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UNIVERSITY OF CALIFORNIA
RIVERSIDE

(Mis)Aligned Ambitions? Parent Resources, Student Alignment,
and Piecing Together the Hispanic College Puzzle

A Dissertation submitted in partial satisfaction
of the requirements for the degree of

Doctor of Philosophy

in

Education

by

Sarah Margaret Ryan

June 2012

Dissertation Committee:
Dr. Robert K. Ream, Chairperson
Dr. Douglas E. Mitchell
Dr. Robert A. Hanneman
Dr. Lindsey E. Malcom-Piqueux
Dr. Sigal Alon

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Acknowledgements

Just over five years ago, when I started down this road, my husband, having just completed a doctorate degree in chemistry, jokingly said to me, "Congratulations! You are now experiencing one of the two greatest moments that will occur during the process of getting your Ph.D." The first, he explained, occurs upon acceptance, and the second upon completion; however, in between, when the light at the end of the tunnel is not yet in sight, yet no longer is the light back at the beginning visible, those will be the toughest days. And so he was right. While there were many moments of brightness along the way, there were also many challenges and sometimes the road felt very dark. So, thank you, Shannon, for walking with me through this tunnel. Most of all, thank you for being my partner, my friend, and for making me a better person through your presence in my life.

Mom and Dad, where do I even start? My greatest accomplishments have their foundation in your unconditional love and support. You have been my most important teachers. The lessons I have learned from you about life and living contain the priceless knowledge that one will not find in books, including the value of living with humanity. Thank you for believing in me, even when I did not believe in myself. I am here today because you did.

Scott, you have always been my "little" brother, but over these past years, you have also become an amazing friend. Thank you for all of your love and encouragement along the way, for the calls, the cards, the emails. I must also express my deepest gratitude to all of my extended family—the Ryan's, the Clark's, the Von Rueden's—for the support I felt from all of you across the many miles throughout this process.

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Dedication

To Topsy and Streakin' Ethel.

Without each of you my life would not have been possible.
Through each of you I learned that the strength of a woman takes many forms.

ABSTRACT OF THE DISSERTATION

(Mis)Aligned Ambitions? Parent Resources, Student Alignment,
and Piecing Together the Hispanic College Puzzle

by

Sarah Margaret Ryan

Doctor of Philosophy, Graduate School of Education
University of California, Riverside, June 2012
Dr. Robert K. Ream, Chairperson

The fact that Latina/o students are losing ground to their non-Latino White peers in four-year college enrollment and bachelor's degree attainment even as Latino college enrollment and graduation rates are at an all time high constitutes a perplexing puzzle. In order to realize the potential "demographic dividend" embedded in the diverse youth population entering the U.S. workforce in the next two decades, it will be critical to fill in the missing pieces of what has been referred to as the Hispanic college puzzle. The current study contributes several new pieces to the puzzle of Latina/o postsecondary attainment. Using a national longitudinal database and structural equation modeling techniques, I investigate the possibility that the degree of alignment, or, alternatively, *misalignment*, between high school students' postsecondary expectations and their actions taken toward fulfilling those ambitions mediates intergenerational resource transmission.

The results demonstrate that the extent to which students with high postsecondary expectations prepare during high school to realize their goals can have a marked influence on the level at which they enroll in college. This is true regardless of whether the student is White or Latino, and irrespective of nativity status among Latino youth. The findings also suggest that there are meaningful differences both *between* Latino and non-Latino White students, as well as *within* the Latino youth population across generations, with respect to the availability and convertibility of various types of parent capital—in particular, forms of parent social capital—into higher levels of student alignment and college enrollment. Overall, the results of this research suggest that alignment can serve much like a bridge on the road to college, such that when students are able to align their actions with their college expectations and then fully capitalize on that match, they are more likely to enroll in a four-year institution. However, in order for Latino students to bridge their college expectations to higher levels of enrollment, students and their families must be able to forge the sorts of social connections that can help them access and make use of timely and accurate information and guidance during the college choice and enrollment process.

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CHAPTER 1

Introduction

Is there really a need to "puzzle" (Tienda, 2011) over Hispanic¹ college degree attainment? After all, following a 24 % surge in college enrollment between 2009 and 2010, 18- to 24-year-old Hispanic young adults accounted for a record share (15 %) and number (1.8 million) of enrollment at two- and four-year colleges in 2010 (Fry, 2011). Richard Fry, a senior researcher at the Pew Hispanic Center, attributes the dramatic increase in Hispanic college enrollment to the combined influences of population growth, educational gains, and the sluggish economic conditions in the United States since 2008. While 5 % of 18- to 24-year-olds in the United States were of Latino origin in 1972, their proportion had risen to 19 % by 2010. Moreover, while only 13 % of young Hispanic adults were enrolled in college in 1972, this figure had increased to 32 % in 2010.

Yet despite these encouraging signs, the college enrollment rate of 18- to 24-year old Hispanics remains well below the rates observed for Black (38 %), Asian (62 %), and White (43 %) young adults and, consistent with research documenting the propensity of Latinos to enroll in two-year institutions, much of the Hispanic enrollment growth has occurred at the community college level (Fry, 2011). Of all Latino young adults who were attending college in the fall of 2010, 54 % were at a four-year institution compared with 63 % of Black, 78 % of Asian, and 73 % of White 18- to 24-year-olds.

Latino college enrollment and graduation rates may be at an all time high, but Latino students continue to trail behind their peers from other groups. With a 2010 bachelor's degree completion rate of 13 % , Hispanic 25- to 29-year-olds continue to be

the least educated racial/ethnic group in the United States (Fry, 2011). The gap in bachelor's-degree attainment between Latino and White young adults constitutes the largest disparity in educational outcomes between the nation's (shrinking) White majority and its largest (and fastest-growing) minority group (Aud et al., 2010). As Figure 1.1 demonstrates, while the percentage of Latinos completing a bachelor's degree grew from just under 6 % in 1971 to 13 % in 2010, during that same period the attainment gap with their White counterparts grew by 11 percentage points.

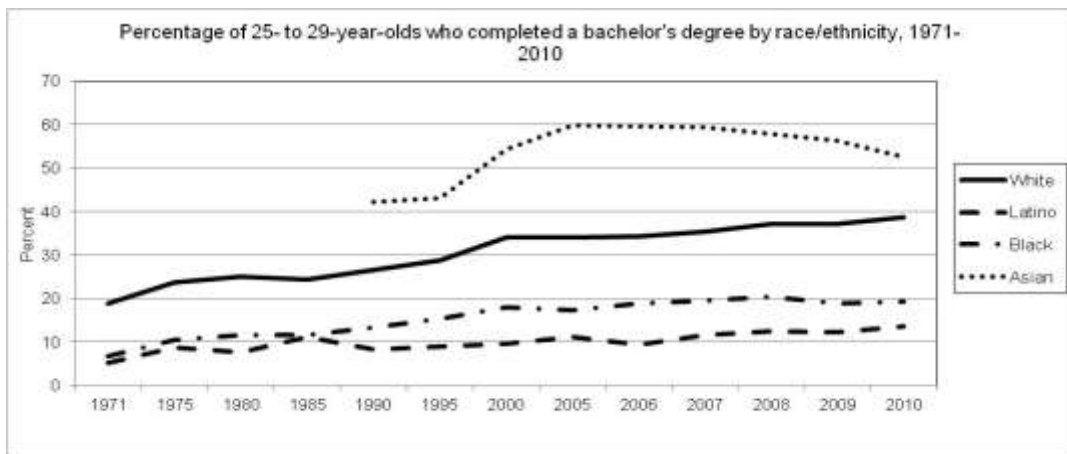


Figure 1.1. Trends in bachelor's degree completion across racial/ethnic groups, 1971-2010. Source. Aud, S., Hussar, W., Kena, G., Bianco, K., Frohlich, L., Kemp, J., Tahan, K. (2011). The condition of education 2011. (NCES Rpt. No. 2011-033). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.

These group-level differences in bachelor's degree attainment are preceded by group-level differences in the attainment of a high school diploma or equivalent² as well as the completion of some amount of college (See Figure 1.2). Together, the patterns described here indicate that, arguably more so than many other issues floating in the policy primeval soup (Kingdon, 1995), the issue of postsecondary access and attainment among U.S. Hispanic youth demands puzzling over.

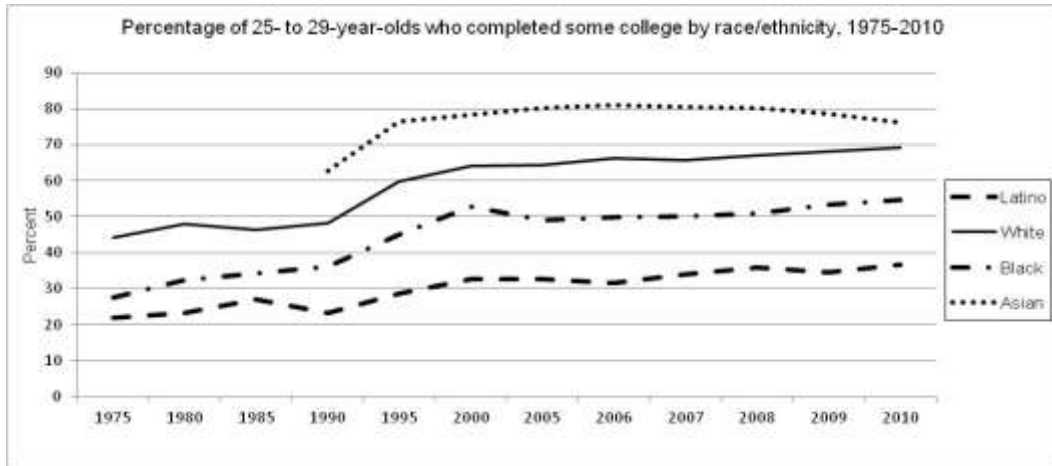


Figure 1.2. Trends in the completion of some college across racial/ethnic groups, 1971-2010. Source: Aud, S., Hussar, W., Kena, G., Bianco, K., Frohlich, L., Kemp, J., Tahan, K. (2011). The condition of education 2011. (NCES Rpt. No. 2011-033). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.

The United States Latino Population

At 50.5 million, the size of the Latino population in the United States makes this country home to the second largest Latino population worldwide, surpassed only by Mexico (U.S. Census Bureau, 2011). While 63 % of the U.S. Hispanic population is of Mexican origin, data from the U.S. Census Bureau (2011) provide evidence that Hispanic individuals in this country can trace their roots to well over 20 different nations. The proportion of the U.S. Latino population represented by each of the three largest national origin groups (Mexico, Puerto Rico, and Cuba), as well as by individuals of some other Hispanic origin, is depicted in Figure 1.3.

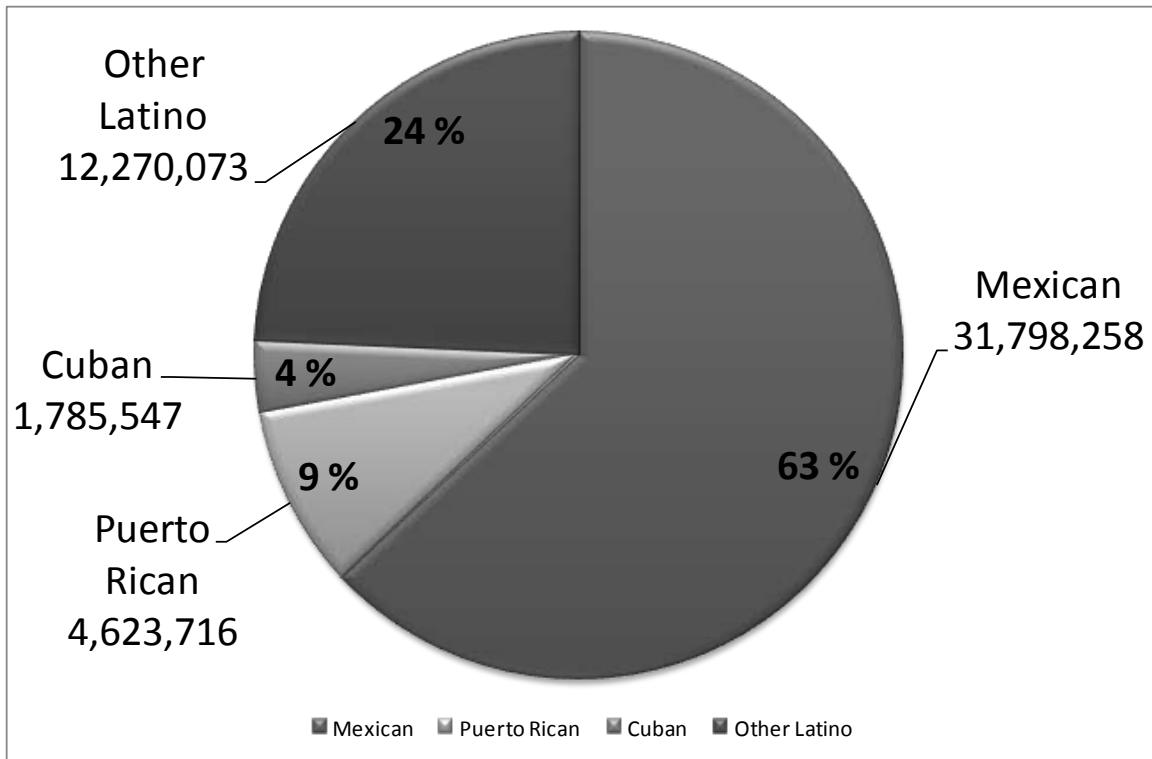


Figure 1.3. Distribution of U.S. Latino population according to national origin.
 Source. U.S. Census Bureau. (2011). The Hispanic Population, 2010. (Census Brief No. C2010BR-04).
 Washington, DC: U.S. Census Bureau.

Latinos in the United States are also a youthful population. While the median age of the United States population as a whole stands at 36.8 years, among Latinos the median age is 27.4 years. In 2009, 26 % of children younger than age 5 in the U.S. were Latino and, overall, Latinos comprised 22 % of youth younger than 18 (U.S. Census Bureau, 2009). While a substantial proportion (41 %) of Hispanics in the U.S. live in the West, between 2000 and 2010 the Hispanic population grew most significantly in the South and the Midwest, growing by 57 % and 49 % respectively in these two regions (Passel et al., 2011). These shifting population dynamics have led demographers to predict that over half of the college-age population growth in the coming decade will be

made up of Hispanic students and that, as a group, Hispanics will comprise a substantial percentage of U.S. adults in the labor force by 2025 (Nuñez & Kim, 2012).

These population trends coincide with another trend among U.S. employers, namely that over the past several decades they have been demanding ever more educated workers (Rouse & Kemple, 2009). Advances in technology as well as the globalized economy have forced less-skilled U.S. workers to compete increasingly with similar workers throughout the world. In order to distinguish themselves from billions of other workers all around the globe, it has become almost a necessity for youth in the U.S. to have some postsecondary schooling (Rouse & Kemple, 2009). When considering population and workforce trends together, it is difficult to avoid the conclusion that the future economic and social welfare of the United States hinges in part on our collective ability to promote college access and completion for its non-White, and especially Latino, populations (Bowen, Chingos, & McPherson, 2009).

So why *is* it that as Latinos make up a greater share of prospective college enrollees, and despite the increase in their college enrollment rates, they trail all other racial and ethnic groups in the percentage who earn a bachelor's degree (Alon, Domina, & Tienda, 2010; Gándara & Contreras, 2009; Swail, Cabrera, & Lee, 2004)? Whether it is the individual concerned about his or her tax burden or the policymaker preoccupied with the economic well-being of the nation, the answer to this question is one in which all members of U.S. society ought to be interested.

Addressing the need for more nuanced research on Latino postsecondary transitions, the proposed study contributes several pieces currently missing from the Hispanic college puzzle.

The Current Study

Much has been written about disparities in educational outcomes across racial, ethnic, and socioeconomic groups. However, less well understood is how different groups of students make decisions about whether, and at what level, to enroll in college. Moreover, the role that less tangible forms of parent social capital, together with parents' economic and human capital resources, play during the college choice process has been largely overlooked.

A careful consideration of factors behind college access and enrollment trends among Hispanic youth reveals that little is known about the quantity and quality of parents' formal and informal social ties relevant to the college choice process of their child. Enrolling in college and obtaining a degree are not simply the result of parents' income and education. Instead, according to social capital theory, the efficient exchange of money and information also depends on the interpersonal ties and social structures that bind people together (Bourdieu, 1986; Coleman, 1988). Social relations and communal affiliations can facilitate or hinder the exchange of resources (Granovetter, 1982; Portes, 1998), and therefore relations among parents, their children, and school agents must also be accounted for as “forms” of social capital (McNeal, 1999; 2005; Ream & Palardy, 2008). One missing piece from the Hispanic college attainment puzzle is the role played by social resources in the process of college access and persistence.

A second missing piece is the measure of *alignment* between students' postsecondary expectations on the one hand, and the actions they have taken toward the fulfillment of their college ambitions on the other. Over a decade ago, work by Schneider and Stevenson (1999) revealed the existence of an "ambitious generation" of youth, the vast majority of whom aspired to a college degree but often were misguided about how to get there. These students were referred to as having misaligned ambitions. Acknowledging Adelman's (2005) observation that the actions students take to "get there" must be situated within the context of their expectations, the proposed study recasts alignment as between students' postsecondary expectations and the course of action in which they engage that align with those ambitions.

Finally, I connect the first two pieces in order to pursue several research hypotheses. First, I hypothesize that both parent resources and the alignment between students' expectations and preparation are important factors influencing student college enrollment. It is also hypothesized that parent resources bolster student alignment which in turn impacts the transition from high school to college. Finally, I hypothesize that the degree of alignment may either facilitate or hinder the transmission of parent resources known to influence youth's transitions to postsecondary education.

The share of the U.S. population identifying as non-Hispanic White is projected to drop from 65 % to 46 % between 2010 and 2050, while the share comprised by individuals who identify as Hispanic is expected to rise from 16 % to 30 % during the same time period (U.S. Census Bureau, 2008). Given the nature of these striking changes in the composition of the U.S. population, I focus specifically on whether the direction

and magnitude of associations among parent resources, student alignment, and college enrollment differ between Hispanic and non-Hispanic White students. I also examine whether there are differences in the associations of interest *within* the Latino youth population according to student nativity status.³ Despite the fact that over 62 % of Latino children under the age of 18 are immigrants or the children of immigrants, relatively few studies have focused on the relationship between immigrant status and college choice behavior among Latino youth (Hagy & Staniec, 2001; Wells, 2010). Across the three studies included in this dissertation, I examine six research hypotheses and associated research questions:

Hypothesis 1. In comparison to White students, Latino students demonstrate a greater degree of misalignment between their college expectations and college-going actions, while among Latino students the average level of alignment increases with each passing generation.

Research question 1. Does the level of alignment between 12th grade students' postsecondary expectations and preparation vary between Latinos and non-Latino Whites or among Latinos according to student nativity status?

Hypothesis 2. Parent resources (as measured when students are in 10th grade) influence students' initial postsecondary enrollment decisions (as measured when students are in 12th grade).

Research question 2. Is variation in students' postsecondary enrollment status as measured two years beyond the 12th grade year related to parent resources?

Hypothesis 3. Parent resources influence alignment between students' postsecondary expectations of a professional or advanced degree and their related preparatory actions and academic performance?

Research Question 3. Is alignment associated with parent resources?

Hypothesis 4. Student alignment mediates the impact of parent resources on students' postsecondary enrollment decisions.

Research Question 4. Do parent resources indirectly influence students' level of postsecondary enrollment?

Hypothesis 5. Race/ethnicity moderates associations among parent resources, student alignment, and postsecondary enrollment—the magnitude of the associations are least pronounced among U.S. Latinos.

Research Question 5. Do associations among parent resources, student alignment, and postsecondary enrollment vary between Latinos and non-Latino Whites?

Hypothesis 6. Student nativity status moderates associations among parent resources, student alignment, and postsecondary enrollment—the magnitude of the associations are least pronounced among immigrant youth.

Research Question 6. Do associations among parent resources, student alignment, and postsecondary enrollment vary among Latinos according to student nativity status?

I investigate the research hypotheses and associated research questions using data from the *Educational Longitudinal Study of 2002 (ELS:2002)* and structural equation modeling techniques. The *ELS* dataset includes a nationally representative cohort of 10th graders in 2002 (see: <http://nces.ed.gov/surveys/els2002/>). The full research sample

includes all Latino and non-Latino White students who had obtained a high school diploma or had completed an alternative credential by May of 2005 and who, in 2004, reported ultimately expecting to complete a BA or advanced degree (Latino N=1,027; White N= 5,425). The *ELS* dataset is especially suited to the proposed study given that it was explicitly designed to explore students' transitions from high school into postsecondary education and the workforce.

Literature Review

Probing the “Puzzle” of Latino College Degree Attainment

The deepest roots of this research derive from the recent scholarship of Alon, Domina, and Tienda (2010), who examined two suggested reasons for differential patterns of postsecondary enrollment and attainment among Latino youth—namely, parents' level of education and parents' nativity status. The researchers used several longitudinal datasets to assess the intergenerational educational mobility of recent cohorts of high school graduates.⁴ Their aim was to better understand whether the trailing postsecondary attainment of Latinos indicates a “temporary lull” due to an influx of immigrants with low levels of education or instead reflects a more entrenched pattern of unequal rates of social status transmission relative to Whites.

Additionally, because “decoding the Hispanic college puzzle requires consideration of both quantitative and qualitative aspects of postsecondary outcomes” (p. 1811), these scholars examined not simply whether a student enrolls in any college at all, but also the type (two-year vs. four-year) and selectivity of the institution into which students matriculated. Numerous studies have demonstrated that the type and selectivity

of the college attended influences the probability of graduation as well as long-term life chances (Alon & Tienda, 2005; Bowen & Bok, 1998; Kane, 1998).

What Alon and her colleagues (2010) found was that group-level differences in parent education and nativity only partly explained the gap in college enrollment among Latino and White students. Broadly, their results indicated that the main difference between Latinos and Whites stems from differential access to four-year institutions. While prior scholarship largely attributes this phenomenon to family background—most often parents' education—Latino students with college-educated parents were significantly less likely than White students with similarly educated parents to enroll at any college, but particularly at a four-year institution. Turning from enrollment to degree attainment, at all levels of parent education Latino high school graduates from both national cohort studies with data on attainment were less likely to obtain a bachelor's degree than similarly situated White students.⁵ Especially noteworthy was the fact that among students with college-educated parents, White youth were nearly twice as likely to earn a four-year degree.

In theory, educational expansion enables upward intergenerational mobility, especially for groups with traditionally low levels of educational attainment (Blau & Duncan, 1967). However, the research conducted by Alon and colleagues suggests that Latino parents less readily transmit educationally advantageous resources to their children relative to similarly resourced White parents, and that these differences are not fully accounted for by parents' level of education or by parents' nativity status. Further, inequalities across ethnic lines have persisted for over three decades—indeed, the data

suggest greater disparities in the likelihood of college attendance over time—suggesting that the puzzle of Latino college access and attainment is less a momentary lull than a persistent conundrum (Alon et al., 2010).

However it remains unclear what mechanisms may be operating to hinder the transfer of such resources from parent to child. The proposed study suggests one overlooked mechanism is the degree of alignment between high school students' postsecondary expectations and their actions taken during high school toward fulfilling those ambitions.

Postsecondary Expectations and Alignment

Expectations. In the literature addressing the educational futures U.S. youth and their parents envision, the term 'expectations' is often used interchangeably with 'aspirations.' Both have been identified in the literature as having a marked impact on the educational attainment process (Bohon, Johnson & Gorman, 2006; Cabrera & LaNasa, 2001; Hanson, 1994; Kao & Tienda, 1998, 2005; Perna, 2006). While aspirations and expectations are conceptually similar, aspirations are somewhat abstract, indicating idealistic hopes for the future. Aspirations represent values to an extent (Perna & Titus, 2005) but may also reflect students' socialization into a society which places ever increasing importance on higher education. This research employs expectations as a more concrete indicator of students' educational ambitions. I follow the work of other scholars who conceptualize aspirations as reflecting an ideal or what students and parents *want* to see happen, versus expectations which reflect what they believe will *actually occur* (Bohon et al., 2006; Goldenberg, et al., 2001; Hanson, 1994; Mickelson, 1989, 1990).⁶

Acting on expectations. While most students expect to go to college, many students, particularly first-generation college-goers and underrepresented minority youth, do not fully understand what sequence of preparatory actions are required to get there (Dounay, 2006). In their work on the detrimental effects of the disconnect between the nation's K-12 education system and its postsecondary system, Venezia and colleagues (2003) demonstrated that many students and their parents, as well as educators, are quite confused or misinformed about how students should prepare for college. This may be particularly true among Latino students. The research literature has consistently documented a lack of access to timely and accurate information about all aspects of college among Hispanic students and their families (O'Connor, 2009).

Berkner and Chavez (1997) proposed five somewhat sequential steps along the path to college enrollment, although students do not always think of the process in these terms (Hossler, Schmit, & Vesper, 1999). These five steps are roughly aligned with Hossler and Gallagher's (1987) three-stage—predisposition, search, and choice—model of the college choice process. The first step involves the decision to pursue postsecondary education and at what type of institution (e.g. academic or vocational, two-year or four-year). Next, students must prepare academically for college-level work, which means becoming at least minimally college-qualified. For students aiming to attend a four-year college or university, becoming academically prepared often means completing a certain number of credits or years in core academic areas, as well as in a foreign language. Research by Adelman (1999) suggests that the highest level of coursework completed in certain subjects, particularly math, serves as a proxy indicator of the quality and intensity

of academic preparation. As a third step, students usually need to complete either the SAT or ACT entrance examination. Fourth, students choose one or more institutions they wish to attend and submit applications. Finally, students must gain acceptance and make the financial and other arrangements necessary to enroll.

While many of the actions required to make one's way to college have been identified, the evidence suggests that information about this sequence of steps nonetheless remains out of reach for many families. Those students and their parents who do have access to accurate and timely information will be more likely to engage in actions which align with their educational expectations.

Alignment. In this investigation, I expand upon the work of Schneider and colleagues (Kim & Schneider, 2005; Schneider & Stevenson, 1999) and their notion of aligned ambitions. In *The Ambitious Generation*, Schneider and Stevenson (1999) use the term 'ambitions' to refer to the goals youth hold, both educational and occupational. Where the occupational goals and educational goals of adolescents are complementary—in other words, when youth know the type of job they want and how much education they will need to get there—the authors refer to these youth as having *aligned ambitions*.⁷

As Schneider and Stevenson argue, ambitions play a critical role in the lives of adolescents. However, the authors caution, “although very ambitious, many adolescents find it very difficult to fulfill their dreams” (p. 4). Many students are uninformed about the actual steps they need to take to achieve their goals. Further, they often do not realize that many of the choices they make in the present will open up certain future opportunities but close off others. Choices which may seem inconsequential at the time,

such as which courses to take during high school, will influence students' preparation for college; other choices, such as whether to attend a community college or a four-year university, can impact a student's chances of earning a bachelor's degree. Misguided or uninformed choices can exact a high cost. The authors assert that when students do not have a coherent plan for their educational and occupational futures, they are likely to feel overwhelmed by the many possible choices they face. Schneider and Stevenson refer to these youth who have high ambitions but no clear plan for reaching them as having *misaligned ambitions*.

The proposed research offers a slightly different conceptualization of alignment *vis-à-vis* the college choice process. Here, alignment will refer to the match between students' stated postsecondary expectations of obtaining at least a bachelor's degree, on the one hand, and the extent of their preparation toward the fulfillment of those expectations, on the other. In this study, students who have not taken actions known to influence bachelor's degree completion demonstrate misalignment between their postsecondary expectations and actions.

The notion of alignment proposed in this dissertation research can be seen as a representation of Morgan's ideas on prefigurative and preparatory commitment. Morgan (2002) argued that as a student leaves high school the most critical determinant of the course that his or her transition to adulthood will follow will be the decision of whether or not to immediately enter college. Morgan maintained that the strength of a student's *prefigurative* commitment toward enrolling in college following high school would predict his or her level of *preparatory* commitment, the latter being evidenced in the

everyday actions the student took (or did not) that best positioned him or her to realize this goal.

Morgan suggested that both prefigurative and preparatory commitments are a function of the precision of the student's beliefs about his or her chances of successfully enrolling in and navigating college, as well as beliefs about the expected returns (i.e. income) he or she could expect as a result of doing so. The author further asserted that as students develop beliefs about their chances of enrolling in and succeeding in college, as well as about the long-term consequences of doing so, both the amount and accuracy of information available to them will strongly influence these beliefs. Morgan specifically noted that the views and actions of parents, teachers, siblings, and peers would almost certainly inform students' beliefs.

As Morgan (2002) suggested, access to timely and accurate college-relevant information related to students' expectations helps them take appropriate steps on the path to college. Unfortunately, "policies are often not in place to ensure that *all* students and parents—not just those who have already learned how to negotiate the system—receive the information they need" (Dounay, 2006, p. 4).

Access to College-Relevant Information

Karen (2002) underscores the particular importance of access to accurate postsecondary knowledge in the United States, given that the admissions process is not standardized among colleges. Although unclear regarding the direction of causality, the timing of obtaining this knowledge and information is also influential, as having early

college plans substantially increases the likelihood of taking a college preparatory curriculum and enrolling in college (Cabrera & LaNasa, 2000).

A substantial body of scholarship leads to the conclusion that college-relevant information is not equitably distributed among student populations. Some research has demonstrated that a majority of Latino and Black students spend upwards of eight hours each day in K-12 schools where there is a lack of teachers and counselors equipped to help them think about and prepare for college (Oakes et al., 2006; Pérez & McDonough, 2008). Students may have high academic and career expectations, yet face significant obstacles in the form of inadequate or inappropriate high school programs and school structures (Oakes et al., 2006; Solórzano 1992). Citing a number of other scholars, McClafferty-Jarsky, McDonough, and Núñez (2009) suggest that historically underrepresented students may be tracked away from college preparatory curricula (Oakes, 2008; Oakes et al, 2006) and further assert that many minority students interested in college are often advised by teachers and siblings to start at the community college level in order to improve their grades and save money, despite the fact that two-year institutions may not provide effective transfer mechanisms to four-year institutions (Gonzalez, Stoner, & Jovel, 2003; Oakes et al., 2006; Pérez & McDonough, 2008)” (p 359). When schools are not prepared to fulfill this critical role as a guide on the path to college, the task falls even more squarely on the shoulders of parents. This fact may have unique significance for Latino parents. Research suggests that Latino parents in particular may be inclined to let school agents determine their children’s academic programs for a variety of reasons, be it a limited capacity to communicate in English, a predisposition

that it is primarily the school's role to select appropriate curricula for their child, or a perception that school personnel best know what the child needs (Auerbach, 2004; Ceja, 2004; Oliva, 2007).

Auerbach (2004, p. 126) observes that "the struggle for college access is a central concern for Latino families." Expounding upon this assertion, the author points out that Latino students remain underrepresented in four-year colleges and universities and are often disproportionately impacted by rising costs and competition in admissions as well as drastic reductions in grant-based aid. Combined with a lack of institutional supports such as access to adequate postsecondary counseling, particularly in some locations, Auerbach concludes that "the burden of college planning has fallen increasingly on Latino students and their families on an uneven playing field" (p. 126).

This makes all the more concerning work by Gándara (1998, 2002) demonstrating that the single most important obstacle to college access for Latino students is a lack of instrumental knowledge about the sequence of actions necessary to go on to college. Moreover, the earlier discussed work by Alon and colleagues suggests the possibility that this may be the case even when Latino parents have completed a four-year degree.

College Choice and Immigrant Generation

When we do compare levels of educational attainment between Latino and non-Latino White youth, in addition to parent income and education or access to information, one of the most widely cited explanations for the continuing, and possibly widening, college enrollment and attainment disparities is that the continuing influx of immigrants from Mexico and other Latin American nations serves to depress overall rates of

educational achievement and attainment among the U.S. Hispanic population. From this perspective, a common argument is that because the majority of Hispanic immigrant parents are poorly educated themselves, their immigrant and second-generation children will be less likely to enroll in college but, this line of argument continues, by the third generation and beyond, Hispanic students can be expected to achieve and attain at levels similar to comparable White students as education levels increase with each passing generation (Fry, 2004; Wojtkiewicz & Donato, 1995; Smith, 2003).⁸

While the trend just described might have captured the experiences of at least some earlier waves of immigrants, unlike this earlier period during which immigrants could move up the rungs of the social mobility ladder without much, if any, formal education, since 1965 immigrants to the United States have entered a nation that has been maneuvering through what Harrison and Bluestone (1988) referred to as a "Great U-Turn." In other words, beginning in the latter half of the 20th century the U.S. has increasingly shifted from an industrial economy, in which natural resources and labor were the critical resources, to an economy in which knowledge is the key resource and source of advantage in international competition (Drucker, 1993). As a result, notes Rumbaut (2008), because higher levels of education are now required to secure the jobs that can ensure economic and social mobility, recent waves of immigrants, and their descendants, have encountered a United States in which postsecondary education is more critical to upward mobility than perhaps ever before.

It is somewhat surprising, then, as Hagy & Staniec (2001) noted, that much of the existing research on the education of immigrants and their children focuses on primary or

secondary school outcomes (Kao & Tienda, 1995; Rumbaut, 1995; White & Kaufman, 1997) or on adult immigrants' post-migration investments in education (Borjas, 1982; Kahn, 1997). The fact that few studies have simultaneously addressed immigrant status and college choice behavior with a specific focus on the nation's largest and fastest-growing minority group exposes a sizeable gap in the research literature (Tienda & Mitchell, 2006).

Chiswick and DebBurman (2004) described how sociologists and anthropologists, who have played a predominant role in building a body of research around immigrant education, have relied primarily upon two theories in much of the existing literature, specifically cultural discontinuity theory and cultural ecology theory. The thrust of cultural discontinuity theory is that immigrant youth experience linguistic and cultural disadvantages as well as internal and interactional conflict between home and school (Carter & Segura, 1979; Trueba, 1987; Perlmann, 1988). For example, the immigrant parent/child bond may be susceptible to language and cultural differences that serve to exacerbate the “generation gap” between immigrant parents and their U.S.-born children (Buriel & Cardoza, 1988; Valenzuela, 1999). Researchers in this camp have observed that as the duration of their residence increases, however, immigrants become more acculturated to U.S. society and their educational attainment increases. In this way, cultural discontinuity theory parallels the tenet of status attainment theory that predicts increases in occupational and educational attainment from one generation to the next.

Cultural-ecological theorists, on the other hand, argue against this straight-line assimilation model, instead contending that immigrant achievement and attainment is

influenced by an intricate interaction of numerous factors including the reasons for immigration, perceptions of opportunity, and the value in the labor market for additional attainment (Ogbu, 1978, 1987; Ogbu & Matute-Bianchi, 1986).

More recently other scholars researching immigrant education have encountered results that do not neatly fit into the cultural discontinuity approach nor the cultural-ecological framework. These studies have suggested that nativity status has a marked influence on educational outcomes, with second-generation immigrants typically outperforming both their first- and third-generation counterparts (Portes & Rumbaut, 1990; Rong & Grant, 1992; Kao & Tienda, 1995), with the caveat that first-generation children immigrating at very young ages (the so-called 1.5 generation) often perform similarly to second-generation youth (Rumbaut, 2004).⁹ Additionally, many of these studies have also demonstrated that, in addition to generation status, ethnicity also impacts educational attainment among immigrants and their children born in the U.S. (Rong & Grant, 1992; Kao, Tienda, & Schneider, 1996). The general pattern with respect to ethnicity has been such that Asians outperform other groups while Hispanic students have lower achievement and attainment levels as well as higher dropout rates than East Asians and non-Hispanic Whites (Arias, 1986; Hirschman & Wong, 1986; Velez, 1989). This latter finding highlights the necessity to more carefully investigate generational differences not only between but also *within* specific ethnic groups.

Rather than viewing the assimilation process as a unilinear and additive process, this *segmented assimilation* perspective acknowledges that educational and economic outcomes vary within and between immigrant groups and attempts to more fully explain

this variation. Segmented assimilation theory contends that a downward or stagnated pathway across generations will be observed with greater frequency in disadvantaged contexts due to the erosion of positive attitudes and optimistic expectations among third generation immigrants who will encounter structural barriers to social mobility as well as discrimination more often than their immigrant counterparts living in relatively more advantaged contexts.

Still, despite exposure to influences that might place immigrants at risk of downward mobility, there are also protective forces that, when in place, can foster resilience to these forces among immigrant youth (Zhou & Kim, 2006). From the segmented assimilation perspective, the maintenance of a strong ethnic identity through close ties to a cohesive immigrant community and within the family may help youth resist the influence of unfavorable elements present in some poor and inner-city neighborhoods. As Coleman (1988) observed, when children are situated within closely-knit communities in which parents "co-parent" to some extent by reinforcing each other's norms and sanctions in the supervision of children, the resultant intergenerational closure can be seen as evidence of parent social capital because it can help parents inculcate desired values and behaviors in their children. Close ties to one's ethnic community and a strong ethnic identity may build social capital that can serve to protect youth against detrimental influences that may be present in poor inner-city environments (Portes & Rumbaut, 2001; Portes & Zhou, 1993; Zhou & Kim, 2006). As evidence of this assertion, Portes and Rumbaut (2001) cite their research demonstrating that bilingual students

achieved at higher levels than their ethnic peers who spoke only English and that students also performed better when they maintained intra-ethnic group friendships.

Portes and Rumbaut (2001) assert that Hispanic youth may be at particular risk of downward mobility across generations due to relatively low levels of parent human capital and a negative receptive environment, particularly among Mexican-origin students, who make up the majority of Latino youth. The parents of many first- and second-generation Latino students enter the United States with little or no formal education, limited command of the English language, and job prospects limited to low-wage sectors of a U.S. economy in which few routes to upward occupational status exist for those without a certain level of educational qualifications (Portes & Zhou, 1993). Additionally, Hispanic youth tend to be more likely than their non-Latino White counterparts to live in racially and economically segregated neighborhoods.

Overall, the research literature addressing differences across immigrant generations in the extent to which they experience upward (or downward) mobility as they assimilate and/or acculturate (or do not) to life in the United States is far from conclusive. This is not surprising inasmuch as any observed differences will depend on many factors, including but not limited to an individual's national origin, family background, English capabilities, and prior educational experiences, as well as the multiple and overlapping contexts into which he or she is received and the outcome under consideration (Portes & Zhao, 1993; Portes & Rumbaut, 2001).

Given that the fundamental issue of the structural context in which Hispanic immigrants and their children are situated is beyond the scope of this study, this research

is not intended to evaluate the tenets of any one theoretical approach to immigrant assimilation. Instead, I take a more inductive approach to the ways in which different generations of Latino students may experience the college choice and enrollment process by exploring the match between their educational expectations and the actions they have taken toward realizing those expectations, as well as the role that expectation-action alignment plays in mediating associations among parent assets and students' college enrollment decisions. Recent research has demonstrated that, regardless of nativity status, Hispanic youth and their parents hold high expectations (Burciaga et al., 2009). However, research has also demonstrated that Latino students and their families face considerable challenges in accessing the college-relevant information that can help youth convert expectations into actions and realized ambitions.

Theoretical Framework

Research on student transitions to postsecondary education has been informed by several theoretical perspectives. I begin by reviewing the two main theoretical approaches to the college choice process.

Theoretical Underpinnings of Prior Research

The phrase 'student college choice' has been used to refer both to students' decision to continue their education at the postsecondary level as well as their decision to enroll in a specific institution of higher education. The process of student college choice has attracted interest from a wide audience, including researchers from various academic disciplines but also institutional, state, and federal policymakers (Hossler & Stage, 1992). Hossler and colleagues (1989) identify four types of college choice models, including

econometric, consumer, sociological, and combined models. These four models fall under two theoretical perspectives (Hossler et al., 1989; Perna, 2006): an economic model of human capital investment and a sociological model of status attainment.

Human capital investment. Neo-classical economists originally introduced human capital theory (Schultz, 1961; Becker, 1962) to explain how altering people's knowledge and skill levels sets in motion higher earnings and a more efficient use of economic capital (Coleman, 1990). Investments in human capital are intended to enhance individual productivity by amplifying mental and physical abilities (Becker, 1962). Differences in productivity are in turn explained by individuals' investments in their own development—for example in the amount of education they complete or in their own emotional and physical health (Becker, 1962, 1993). Becker (1993) asserts that while there are a number of valuable types of human capital investments, investments in education and training will prove most beneficial. Traditional models of human capital investment typically focus on the proverbial rational man who decides whether to invest in additional education after comparing the expected lifetime benefits with the expected costs. These costs are both monetary and nonmonetary, as well as of a direct and an indirect nature (Becker, 1962, 1993; Ellwood & Kane, 2000; Perna, 2006). Economists later attempted to acknowledge that differences among individuals in the expected costs and benefits of higher education do not completely account for observed variation in college choice. They have suggested that such differences are also the result of factors influencing the demand for, as well as the supply of, resources for investing in human capital. Those individuals with greater academic preparation and achievement and/or

larger stocks of personal economic resources are predicted to exhibit a higher likelihood of college enrollment (Catsiapis, 1987).

Sociological perspectives. Perna (2006) recognizes that the human capital investment model illustrates the effects of variables such as academic ability and family income on decisions related to college, but concludes that the approach is of limited utility when it comes to understanding sources of variation in college choices across groups. Forces of supply and demand explain some of the observed differences across groups on outcomes such as college enrollment, but not all (Perna, 2000). Sociological approaches to college choice have emerged from traditional status attainment models and attempt to address other factors that are often less tangible and more interpersonal than those accounted for in economic models of human capital.

Developed by perhaps two of the most recognized figures in status attainment theory and research, Blau and Duncan's (1967) approach "might be the single most replicated model that sociology has seen" (Pfeffer, 2007, p. 1). In their summary of traditional models of status attainment, Hossler and colleagues (1999) note that these models focus on the effects of students' socioeconomic status on their educational and occupational aspirations. In traditional status attainment models, educational aspirations are determined by both academic preparation and achievement as well as by SES. Economically advantaged students receive more encouragement from important others, including parents, peers, and teachers. Supportive interpersonal relations, in turn, bolster expectations which are predicted to promote greater educational and occupational attainments. More recent research within a sociological framework probes the ways in

which sociological constructs of cultural and social capital are related to student college choice (Perna, 2006). As with human, physical, and economic forms of capital, cultural and social capital are resources which can be invested to facilitate upward mobility. Forms of cultural and social capital can also be manipulated to delineate social boundaries where insiders are advantaged in ways that increase productivity while outsiders are disadvantaged (Coleman, 1988; Lamont & Lareau, 1988; Perna, 2006).

A fairly nascent body of research has attempted to operationalize and measure social capital and the role of social capital during the Latino college choice process, drawing on both Coleman and Bourdieu. Findings from this research suggest that both ethnicity as well as economic *and* social resources merit consideration as important influences (Auerbach, 2004; Kim & Schneider, 2005; McDonough, 1997; Nuñez & Kim, 2012; Pérez & McDonough, 2008; Perna, 2000, 2006; Perna & Titus, 2005; Person & Rosenbaum, 2006). With this in mind, the theoretical approach to the proposed research conceptualizes parents' resources as forms of capital and views the role of social capital as particularly important in the college choice process.

Social Capital Theory

Portes and Sensenbrenner (1993) assert that the "effervescence" of research drawing on the notion of social capital has partially veiled the fact that many of the ideas which can be found in the various definitions and manifestations of social capital have been a part of the sociological tradition all along. From this perspective, the scholarship of principal sociological theorists such as Emile Durkheim, Max Weber, Georg Simmel, and Karl Marx is, in a sense, central to the founding of the field of social capital inquiry.

From Durkheim we received the notion of *value introjection* which emphasizes the moral character of contractual relationships and economic actions that are guided by value precepts acquired through the socialization process (Portes & Sensenbrenner, 1993; Schuller, Baron, & Field, 2000; Woolcock, 1998). It is value introjection that helps us to understand the noneconomic social forces that can compel individuals to take actions beyond those which are utility maximizing (Fulkerson & Thompson, 2008; Portes & Sensenbrenner, 1993). Explaining the connection to the notion of social capital, Portes and Sensenbrenner write that "[v]alue introjection is the first source of social capital because it prompts individuals to behave in ways other than naked greed; such behavior then becomes appropriable by others or by the collectivity as a resource" (p. 1323).

The second antecedent of social capital comes from the microinteractionist tradition, specifically Georg Simmel's ideas about *reciprocity transactions*, or the exchange of intangible goods such as favors, information, approval and other valued items (Fulkerson & Thompson, 2008; Portes & Sensenbrenner, 1993). Here the individual is acting in the service of self-interest, however, unlike in the marketplace, the transactions involve social intangibles rather than money or material goods (Blau, 1964; Portes & Sensenbrenner, 1993). Reciprocity transactions give rise to social capital comprised of "chits" that are accumulated through previous good deeds to others and which are insured, in a sense, by the norm of reciprocity (Portes & Sensenbrenner, 1993).

A third precursor to social capital is *bounded solidarity* which comes to us from the conflict tradition, and more specifically the work of Marx and Engels (Portes & Sensenbrenner, 1993). The thrust of the idea of bounded solidarity is that situational

circumstances can lead to group-oriented behavior spurred not by early value introjection but instead by the reaction of a group of people who, in a specific context, face common adversities (Portes & Sensenbrenner, 1993).

Finally, out of the rational-utilitarian tradition Weber offers the notion of *enforceable trust*, which involves those instances in which individual actors set aside current self interests to the expectations of the group in exchange for future returns associated with "good standing" in the collectivity (Fulkerson & Thompson, 2008; Portes & Sensenbrenner, 1993).

Fulkerson and Thompson (2008) observe that the contested meaning of social capital since its inception has resulted in numerous debates. For example, is social capital a property of individuals or collectivities (Portes, 2000)? What are the specific concepts of which social capital consists? Is social capital a resource (Bourdieu, 1986; Loury, 1977) or is it a process (Bankston & Zhou, 2002)? How is social capital related to social structure (Coleman, 1988, 1990)? How is the value of social capital determined, and how does the value change in different contexts (Schafft & Brown, 2003)?

Fulkerson and Thompson go on to reason that at the root of many of the debates around the notion of social capital is the very fact, noted by Portes and Sensenbrenner (1993), that the theory draws not from one primary sociological tradition but from all of them. As a result, the social capital postulate encompasses numerous incompatible and conflicting images (Portes & Sensenbrenner, 1993; Schuller, Baron, & Field, 2000; Woolcock, 1998). Yet the pair of scholars also sees this characteristic of the social capital postulate as providing it with the unique potential to integrate ideas from each of the four

major sociological traditions (see Collins, 1994). They further contend that the ideas listed above drawing from the main sociological traditions have come together in a way that organizes the "social capital debate" into two competing camps.

On the one hand are the normative social capitalists (Fulkerson & Thompson, 2008) who, drawing on the Durkheimian tradition, view social capital as those features of social structure that give rise to collective action aimed at providing shared benefits for some group (Coleman, 1988, 1990). The perspective on social capital championed in this "camp" is perhaps best exemplified in the work of Robert Putnam and, to a certain extent, James Coleman. Normative social capitalists, write Fulkerson and Thompson, are interested in the study of social capital from a social organization perspective and tend to emphasize reciprocity transactions and value introjection. A principal belief is that social capital can help explain patterns of development across communities, regions, and nations.

The other contingency includes the resource social capitalists (Fulkerson & Thompson, 2008) who draw upon the interactionist and conflict traditions in their approach to social capital, which they view as a critical component of any attempt to explain inequalities in the accumulation of valued resources, both tangible (educational attainment, wealth) and intangible (power, prestige). Resource social capitalists have also recognized the important influence of context on both the availability and convertibility of social capital. Drawing on notions of enforceable trust and bounded solidarity, this group defines social capital (broadly speaking) in terms of the investments that individuals make in their social networks with the expectation of a future return in some

form (Fulkerson & Thompson, 2008, drawing on Bourdieu, 1986; Fernandez, Castilla, & Moore, 2000; Lin, 2001; Portes, 1998).

Either directly or indirectly, the references found in current social capital research typically point to Coleman, Bourdieu, and/or Putnam (Wall, Ferrazi, and Schryer, 1998), although there have been several other independent formulations.¹⁰ In this research, I draw upon valuable insights from both the normative-oriented and resource-centered perspectives on social capital by grounding my theoretical framework in the work of both economic sociologist, James Coleman, and cultural sociologist, Pierre Bourdieu. These two scholars are arguably two of the most prominent figures in social capital theory (Dika & Singh, 2002). For his part, Coleman (1990) finds an implicit connection between social capital and neoclassical economic thought as embodied in the theory of human capital. However, he does so in a reformist sense, emphasizing the ways that relationships among individuals, as well as between individuals and social structures, facilitate norms and rational pursuits. Bourdieu's more critical conception of social capital (Bourdieu, 1986) bears the imprint of his earlier work addressing cultural capital and cultural reproduction (Bourdieu, 1977). According to Bourdieu, social capital contributes to the maintenance or alteration of one's position in the social hierarchy.¹¹

When it comes to decisions around postsecondary education, networks and relationships that are limited in exposure to institutions of higher education and/or lack complete and accurate information about the college choice process may limit the postsecondary opportunities of students. Family and friends comprise an individual's *strong ties* (Granovetter, 1973) and represent sources of critical social support; they may

or may not, however, provide information and other resources critical to social mobility. Granovetter, an economic sociologist, argues that it is *weak ties*, or acquaintances, which connect us to important information and resources from distant reaches of the social system. A lack of access to high levels of *college-relevant* resources, and to the networks in which these resources are embedded, may constrain Latino students' college options and opportunities—even where Latino parents command levels of income and education similar to their non-Latino White counterparts.

Social Capital Theory and the Current Investigation

In this investigation, social capital refers to individuals' capacity to gain access to scarce resources—including economic capital and employment or educational opportunities (Granovetter, 1982), as well as knowledge and information (Becker, 1964)—by virtue of their membership in groups and participation in broader structures of society (Bourdieu, 1986; Coleman, 1988). This definition attempts to capture elements of both Coleman's as well as Bourdieu's work on social capital. Coleman views parents' roles as predominant in promoting their children's status attainment, while Bourdieu's approach describes the restrictions imposed by structural barriers (Dika and Singh, 2002).

Coleman's functionalist interpretation of social capital is most frequently deployed in the educational literature (Dika & Singh, 2002) and has typically been used to study the positive effects of social capital on school-related outcomes—most often achievement and attainment (Dika & Singh, 2002; Ream & Palardy, 2008). Coleman focuses on the educationally utile role social capital plays in communicating norms, trust, authority and social control within social networks (Perna, 2006). There is by now an

extensive literature, which draws mainly from Coleman, on the implications of parent social capital, especially in the form of parent involvement, for students' educational advancement (Paulson, 1994; Sui-Chu Ho & Willms, 1996; Kao & Tienda, 1998). It is Coleman's perspective that Schneider and Stevenson (1999) draw upon in their work on aligned ambitions when they write (p. 150):

...although parents' education and resources affect their children's educational attainment, it is the family's social capital, the strong social ties within the family, that can be a resource for students with aligned ambitions. Prior research on families has shown the importance of such familial ties for improving academic performance.

Schneider and Stevenson further explain that among students with varying educational expectations, it was those youth with aligned ambitions who were more likely to discuss issues related to higher education and future careers with their parents. It should be noted, however, that Schneider and Stevenson do not attend to the alternate possibility—which will be explored in the proposed research—that it may be student-parent discussions around students' academic and occupational futures which engenders aligned ambitions. The pair concludes (p. 150), “In families where young people have aligned ambitions, there is a strong interest in what happens in their courses and how well they do in school.” They suggest that parents can assist their children in strategically making decisions by becoming better informed about their adolescents, by mobilizing nonfinancial resources, and by allocating financial resources. Statements such as this, however, risk naturalizing inequalities across racial, ethnic, and socioeconomic lines.

Assumptions that only when students have aligned ambitions are parents interested in their academic success as well as that all parents are on even footing in accessing and converting resources for the benefit of their children seem at best over-simplified—and at worst, negligent to the realities of social life.

Bourdieu, in contrast to Coleman, attends to social realities and the ways in which some individuals are advantaged because of their membership in particular groups (Portes, 1998). Bourdieu (1986) proposes that the volume and quality of social capital possessed by a person depends on both the size of the network of connections he or she can mobilize as well as on the volume of capital—economic, human, cultural, and symbolic—possessed by each connection or social tie (Dika & Singh, 2002). Thus, Bourdieu’s social capital comprises two elements—the social relationship allowing for access to resources, and also the quantity and quality of those resources (Portes, 1998). Bourdieu views social capital as a mechanism of social stratification; in other words, social capital is used by the dominant class to maintain its dominant position (Lin, 2001). That social capital is less tangible and more easily “hidden” than, say, economic or human forms of capital augments its capacity to serve as a mechanism of stratification (Ream, 2005).

In this research it is expected that college-educated and high-SES Latino parents may evidence lower rates of transmission of various kinds of economic and human capital (Alon et al., 2010; O’Connor, 2009). It is possible that compared to their White counterparts, Latino parents may also experience reduced access to college-relevant resources through their social networks. This could be due either to the type and quantity

of resources embedded in these networks and/or their own positions and the positions of their social ties within social structures (Lin, 2001).

Before continuing, it is important to acknowledge the fact that research employing notions of social capital has muddied the nuances of the theory by implying that social capital is something that one either has or does not have. Kao (2004) observes that in social science research we often measure the extent to which an individual possesses a given resource, such that the value is positive or zero. If we apply this framework to social capital, the implication is that some parents may possess social capital that enables them to engender academic success among their offspring while other parents have no social capital to provide when it comes to school. Thus it is critical to note that while the above statements imply that Latino students might have little access to certain forms of social capital, and attendant resources, through their social networks, this is not to say that they lack social capital altogether.

Further, beyond the extent to which certain forms of social capital are available to an individual, social capital also has a recognized, if under-acknowledged, downside (Portes, 1998; Portes & Landolt, 1996). Kao has suggested that beyond simply lacking certain forms of social capital, parents may hold expectations that actively work against school performance and educational attainment. Kao (2004) gives the example of parents who have achieved financial success without higher education and who effectively communicate to their children that schooling is not always necessary for a comfortable lifestyle. Kao suggests that the potential social capital may itself be negative in this instance, at least with respect to education. I would offer that Kao's discussion of the

downside of social capital reveals the complexity of the notion as well as the complications that can arise as we try to find the words to describe it. For instance, it is difficult to judge whether, in the context of the example Kao provides, it is the parent social capital *itself* which is "negative" or if it is instead the case that a particular form of social capital, *in a particular framework* (educational attainment) and *from a certain perspective* (researcher, mainstream society), may exert a negative influence on a specific outcome (college enrollment).

It is arguably more helpful to consider work by Ream (2003), who distinguishes the *availability* of social capital from its *convertibility*. Ream found that while Mexican-American adolescents evidenced higher stocks of social capital in the form of academically relevant teacher/student interaction than their White counterparts, this advantage was not reflected in test score performance. The researcher concluded based on these findings that the same forms of social capital may hold differential exchange value across the two groups. In the case of students in schools, this might be a function of the classroom context, the social positions of the students, and the quality and skills of teachers with whom they interact in this domain. As in the economy, where different forms of currency have different exchange values depending on where exchange is attempted, so too is the exchange value of social capital domain-specific. Further, as Ream notes, not all relationships are convertible into educationally useful outcomes. In addition to domain of use, convertibility likely depends on characteristics of those with whom exchange is attempted.

In the proposed research, I seek to reexamine and extend previous results showing that human and economic forms of parent capital may be differentially convertible into successful educational outcomes among Latino and White adolescents. This research places particular emphasis on less tangible resources that inhere in parental relations, and therefore shines a light on whether the social exchange of resources may also impact alignment between students' expectations and actions as well as their postsecondary trajectories. Social capital theory guides this work. Before moving ahead, I conclude this introductory chapter with a summary of key findings and an overview of what is to come.

Summary of Findings

The findings from this research indicated that the extent to which students' expectations of completing a bachelor's degree were aligned with the actions they took during high school toward achieving this goal played a critical role in the college choice and enrollment process among a nationally representative sample of Hispanic youth. This was true regardless of whether a student was Hispanic or White and regardless of nativity status. Yet while the extent of alignment between students' college expectations and actions played a critical role in the college choice process among Latino youth, the findings also indicated that in most instances the resources available to their parents, including forms of social, economic, and human capital, varied according to both race and ethnicity, as well as with respect to Hispanic students' nativity status, in their influences on student alignment and college enrollment.

In further developing work by Schneider and others through the notion of alignment, this research offers a unique contribution to the existing literature on

postsecondary transitions by demonstrating the importance of the match between students' postsecondary goals, on the one hand, and the actions they take in reach of those goals, on the other hand, for their college enrollment prospects. The critical nature of alignment for enrollment in a four-year institution could be interpreted as good news, but perhaps only to the extent that the development of aligned ambitions is equally useful across student populations in the pursuit of a four-year degree. On this count, it was troubling that higher levels of expectation-action alignment were less convertible into four-year enrollment among Latino youth. Further, while student alignment appeared to play a crucial role in the college choice process for both groups, the level of alignment functioned to bolster the relationship between parent resources and enrollment only among White students.

The current study also adds new information to the existing knowledge base regarding cross-group similarities and differences in the availability and usefulness of socially-valued resources that parents often use to support their child's pursuit of college enrollment. The results suggested that some forms of parent resources, particularly parents' social resources, were differentially convertible with respect to expectation-action alignment and, indirectly, college enrollment across the two groups. At first glance, it was puzzling that in contrast to some research suggesting that parent education and/or parent income may be more convertible into positive educational outcomes among Whites than among minority youth (Alon et al., 2010; O'Connor, 2009; O'Connor, Hammack, & Scott, 2010), the utility of these two types of parent resources did not differ significantly across the groups studied here. It became evident, however, that the

inclusion of several forms of parent social capital in this research helped to explain this inconsistency.

Also of interest in this study was the extent to which first, second, and third-plus generation Hispanic students demonstrated expectation-action alignment. Across generation status, students demonstrated similar levels of expectation-action alignment, although alignment levels were highest among second-generation Hispanic youth. The absence of marked increases in the match between students' college expectations and preparatory actions could be interpreted as partially supporting the segmented assimilation hypothesis, although average levels of expectation-action alignment seemed fairly level across generations and not only between second and third-plus generation Hispanic students.

With respect to the availability and utility of parent resources in the college choice and enrollment process across student immigrant status groups the findings suggested the challenges that arise when we attempt to understand and explain the experiences of immigrants and their children. The influences exerted by parents' social, economic, and human capital resources on both alignment and enrollment varied across generation status. Further, and contrary to the relatively strong influence exerted by at least some kinds of parent resources among immigrant youth, among second generation Hispanic youth none of the parent assets investigated had a marked impact on either alignment or enrollment. Finally, it was only among Hispanic children born to parents who were also born in the U.S. that high levels of parent human capital promoted higher levels of student alignment.

The findings suggested by the exploration of cross-generation similarities and differences among Hispanic youth during the college choice and enrollment process. provide some support for the so-called "immigrant paradox." The immigrant paradox refers to the pattern characterized by immigrant success and subsequent generational decline following the second generation (García-Coll & Marks, 2011), and such a pattern was observed in the finding that both the observed and predicted levels of alignment and enrollment were highest among second generation Hispanic youth. However, at the same time, a paradox of a different sort was observed in the finding that the effects of various types and forms of parent capital on alignment and enrollment were nonetheless stronger among first and third-plus generation Hispanic students.

In sum, the findings encountered through this research shine an important light on several aspects of the college choice and enrollment process as experienced by both Latino and non-Latino White youth. The introduction of the notion of expectation-action alignment as a quantifiable and investigable construct calls attention to the critical yet underexplored role that the match between a student's ambitions and his or her actions plays in the pursuit of a four-year degree. Further, this research illuminates the differential availability and utility of the social resources at parents' command during the college choice and enrollment process across the two groups under study. The findings encountered here lead to a number of important directions for policy and practice related to the college preparation and enrollment decisions of Hispanic youth.

Overview of the Dissertation

As stated earlier, this study offers several key pieces currently missing from the Latino college attainment puzzle. The first missing piece is the measure of *alignment* between students' expectations of obtaining a bachelor's degree on the one hand, and the actions they have taken toward the fulfillment of these ambitions on the other. Reflecting the theoretical approach to this research, the second missing piece is the measure of parents' formal and informal social ties. Finally, I connect these two pieces and I hypothesize a sequence of association such that parent resources bolster students' alignment, which in turn affects the transition from high school to initial postsecondary enrollment.

These three elements comprise a unifying theme across the three studies included in this dissertation. In the first study, presented in Chapter 2, I acknowledge the assertion made by Pérez & McDonough (2008) that the experiences of Latino youth as they navigate the college choice process are in many ways distinctly different from the experiences of students from other racial and ethnic backgrounds. The first study explores whether and to what extent student alignment mediates the influence that forms of parent human, economic, and social capital have on the level at which Latino students are enrolled in college two years after high school completion. Drawing from a nationally representative sample of Latino students who were in the 10th grade in 2002, I focus on those adolescents who reported in the spring of their senior year of high school that they expected to ultimately complete a bachelor's or advanced degree.

In Chapter 3, I use the second study to peer more closely into the "black box of ethnicity" (Zhou & Kim, 2006). Specifically, I investigate the extent to which the match between students' college expectations and actions mediates intergenerational resource transmission during the college choice process within this group of Latino students according to students' nativity status. I also consider whether the direction and magnitude of the associations among parent resources, student alignment, and level of college enrollment are measurably different when comparing the three different generation status cohorts (first, second, and third-plus).

In Chapter 4, I address whether the hypothesized process in which student expectation-action alignment mediates the influence of different types of parent capital on college enrollment differs depending on student race/ethnicity. This third study builds upon the findings of previous scholarship which suggested that parents' economic and human capital resources may be less easily converted into higher levels of college enrollment and attainment among Hispanic youth relative to their non-Hispanic White counterparts.

The fifth and final chapter of this dissertation draws upon the findings encountered in these three studies to lay out some of the implications for policy and educational practice. I also suggest several directions for further inquiry that might both expand upon and add nuance to the results of this research.

Looking Ahead

The higher education system in the United States experienced rapid expansion in the latter half of the 20th century. That this phenomenon has not been limited to the U.S.,

but has occurred worldwide and has not escaped the attention of policymakers (Schofer & Meyer, 2005). Since taking office, President Barack Obama has continued to reaffirm the goal that the United States produce an additional eight million college graduates by 2020 and reclaim the world's top spot as the country with the highest percentage of college graduates. While this rising tide of education has arguably lifted all boats, overall higher college participation rates for all demographic groups have directed attention away from enduring inequities along race and ethnic lines (Alon et al., 2010; Tienda & Mitchell, 2006). This research draws attention back toward these inequities as they impact Latino students who expect to complete a bachelor's or advanced degree.

¹ On the west coast the meta-categorical term Latina/o is often preferred to Hispanic (Bean and Tienda, 1987). Yet when U.S. Latinos/Hispanics are asked to choose between the panethnic terms, Hispanic is preferred over Latino by a 3 to 1 margin (National Research Council, 2006). Here, both terms are used interchangeably, but it is recognized that neither of these labels fully captures the vast ethnic and cultural heritage of the populations of interest.

² Nonetheless, Hispanic students have made important gains in high school completion. While the Hispanic 18- to 24-year-old population has increased 38 % since 2000, the number of high school completers in this age group increased by 68 % during the same time period (Fry, 2011). For the first time ever the October 2010 Current Population Survey showed a Latino dropout rate below 20 % and the concomitant high school completion rate was a record high of 73 %.

³ The student nativity, or immigrant generation, status variable was created using three *ELS:2002* variables indicating the country of birth (U.S. or non-U.S.) for the student's mother (BYP17) and father (BYP20), as well as for the student (BYP23). First-generation refers to foreign-born students of foreign born parents, second-generation includes native-born students with at least one foreign-born parent, and third-generation captures students born in the United States whose parents were also born in the United States.

⁴ National senior cohorts from the years 1982, 1992, and 2004 come from the *High School and Beyond*, *National Educational Longitudinal Study of 1988*, and *Educational Longitudinal Study of 2002* surveys. Given that sample sizes of immigrant parents are small in these national studies, a large, representative survey of Texas public high school graduates in 2002 (Texas Higher Education Opportunity Project) was used to allow for sample stratification by both parental education and nativity.

⁵ Data on postsecondary attainment has not yet been collected from sample members of the *Educational Longitudinal Study of 2002*.

⁶ This differentiation can be seen in the *ELS:2002* survey instruments where, for example, parents are asked how far they *want* their child to go in school and, separately, how far they think their child *will* go in school. In the student survey, high school students are asked to indicate how important they think it is to get a good education, and then elsewhere asked to indicate how far they think they will go in school.

⁷ While it is not clear in this work whether Schneider and Stevenson are using ambitions to refer to aspirations, expectations, or both, in later work building upon the notion of alignment Kim and Schneider (2005) operationalize ambitions as postsecondary expectations.

⁸ Recent data lends support to this line of thinking. While the overall bachelor's degree completion rate among 25- to 29-year-old Latino young adults was 13 % in 2010, among native-born Latino youth it was 20 % (Fry, 2011). Nonetheless, rates of bachelor's degree completion even among native-born Latino youth is barely half that of their White counterparts. This trend reflects similar Hispanic-White differences in enrollment at four-year institutions.

⁹ Rumbaut (2004) disaggregates generational cohorts into finer-grained sub-groups, in other words, "splitting" rather than "lumping." These sub-cohorts include the 1.0, 1.25, 1.5, 1.75, 2.0 and 2.5 generations. While Rumbaut finds differences across these more finely calibrated generational groupings on a variety of outcomes, such an analysis is beyond the scope of this research.

¹⁰ Putnam (2002) alleges that there have been six independent formulations of social capital, including those of: (1) Lyda J. Hanifan, (2) a group of Canadian sociologists, (3) Jane Jacobs, (4) Glenn Loury, (5) Pierre Bourdieu, and (6) James Coleman.

¹¹ Cultural capital exists as a system of attributes which may be embodied (dispositions of the mind and body, such as values or mannerisms), objectified (cultural goods such as fine art), and institutionalized (educational credentials, for example) (Bourdieu, 1986; Bourdieu & Passeron, 1977). Central to Bourdieu's (1986; 1998) work on cultural capital are also notions of *habitus* and *field*. The social space in which individuals interact is a field characterized by the push and pull of social forces among agents with various means and ends; this field is organized by the "rules of the game," although these rules are not explicit. The field is ever-changing, making valued forms of cultural capital dynamic and arbitrary (Dika & Singh, 2002). Moreover, the "players" on the field each bring to it a different set of dispositions, or a habitus. Individuals come bearing a variety of forms of cultural capital, some of which are more valued than others.

CHAPTER 2

Assets, Alignment, and Access: Probing the College Enrollment Process Among Latina/o Students

Why is it that as U.S. Hispanics¹² make up a greater share of prospective college enrollees, and despite the increase in their college enrollment rates, they trail all other racial and ethnic groups in the percentage who earn a bachelor's degree (Alon, Domina, & Tienda, 2010; Gándara & Contreras, 2009; Swail, Cabrera, & Lee, 2004)? The future economic and social welfare of the United States hinges in part on the answer to this question (Bowen, Chingos, & McPherson, 2009). With a Latino population of 50.1 million, the United States is home to the second largest Latino population worldwide, surpassed only by Mexico (U.S. Census Bureau, 2011), and Latinos in the United States are a youthful population. While the median age of the United States population as a whole stands at 36.8 years, among Latinos the median age is 27.4 years. In 2009, 26 % of children younger than 5 in the U.S. were Latino and, overall, Latinos comprised 22 % of youth younger than 18 (U.S. Census Bureau, 2009). So again, why, when more than half of the college-age population growth in the coming decade is expected to be made up of Hispanic students, are we not seeing more substantial improvement in their four-year degree attainment rates?

In attempting to try to piece together this “puzzle” of Hispanic college degree attainment (Tienda, 2011), a number of studies have focused on Hispanic students' secondary academic performance as well as their academic preparation for college as one piece of the puzzle (Arbona & Nora, 2007; Swail et al., 2005; Zarate & Gallimore, 2005). Other research fits a few puzzle pieces into place by focusing on the influence of family

resources such as parent income and education on Hispanic students' postsecondary attainment (Alon et al., 2010; Gándara & Contreras, 2009; Oakes, et al., 2006; O'Connor, 2009; Perna, 2000). Recent investigations have also begun to probe the effects of parents' less tangible assets such as social and cultural capital (Gonzalez, Stoner, & Jovel, 2003; Perna, 2000; Perna & Titus, 2005). Yet important gaps remain in our understanding of the specific needs of Latino students as they navigate the road to college (Nora & Crisp, 2009). In particular, we know little about the potential mechanisms that may mediate the role that parent resources, particularly less tangible forms of social resources, play in the college choice process (Tienda, 2011). This research addresses that gap.

The Current Study

A careful consideration of factors behind college access and enrollment trends among Hispanic youth reveals that little is known about the quantity and quality of parents' formal and informal social ties relevant to the college choice process of their child. Enrolling in college and obtaining a degree are not simply the products of parents' income and education. Instead, the efficient exchange of money and information, according to social capital theory also depends on the interpersonal ties and social structures that bind people together (Bourdieu, 1986; Coleman, 1988). Social relations and communal affiliations can facilitate or hinder the exchange of resources (Granovetter, 1982; Portes, 1998), and therefore relations among parents, their children, and school agents must also be accounted for as “forms” of social capital (McNeal, 1999; 2005; Ream & Palardy, 2008). One missing piece from the Hispanic college attainment puzzle is the role played by social resources in the process of college access and persistence.

A second missing piece is the measure of *alignment* between students' postsecondary expectations on the one hand, and the actions they have taken toward the fulfillment of their college ambitions on the other. Over a decade ago, work by Schneider and Stevenson (1999) revealed the existence of an "ambitious generation" of youth, the vast majority of whom aspired to a college degree but often were misguided about how to get there. These students were referred to as having misaligned ambitions. Acknowledging Adelman's (2005) observation that the actions students take to "get there" must be situated within the context of their expectations, the proposed study recasts alignment as between students' postsecondary expectations and the course of action in which they engage that align with those ambitions.

In this research, I connect these two missing pieces in order to investigate several research hypotheses. Specifically, I use longitudinal survey data and structural equation modeling techniques to specify the sequence and nature of the associations among parent resources, student alignment, and college enrollment. First, I hypothesize that both parent resources and the alignment between students' expectations and preparation are important factors influencing student college enrollment. It is also hypothesized that parent resources bolster student alignment which in turn impacts the transition from high school to college. Finally, I hypothesize that the degree of alignment may either facilitate or hinder the transmission of parent resources known to influence youth's transitions to postsecondary education. I examine each of these hypotheses via the following research questions.

Research Questions

Research Question 1. Is variation in students' initial postsecondary enrollment status related to parent resources?

Research Question 2. Is alignment between students' 12th grade college expectations and the actions they have taken in reach of those expectations associated with parent resources as measured during the 10th grade year?

Research Question 3. Do parent resources indirectly influence students' initial postsecondary enrollment *via* alignment?

Literature Review

Postsecondary Expectations and Alignment

In the literature addressing the educational futures that U.S. youth and their parents envision, the term 'expectations' is often used interchangeably with 'aspirations.' Both have been identified in the literature as having a marked impact on the educational attainment process (Bohon, Johnson & Gorman, 2006; Cabrera & LaNasa, 2001; Hanson, 1994; Kao & Tienda, 1998; Perna, 2006). Aspirations represent values to an extent (Perna & Titus, 2005) but may also reflect students' socialization into a society which places ever increasing importance on higher education. This research employs expectations as a more concrete indicator of students' educational ambitions (Bohon et al., 2006; Goldenberg, et al., 2001; Hanson, 1994; Mickelson, 1989, 1990).¹³

In order to realize their ambitions, students who plan to complete a four-year degree must engage in a specific series of actions. Berkner and Chavez (1997) proposed a sequence of five essential actions required to master the process of college enrollment,

although students do not always think of the process sequentially (Hossler, Schmit, & Vesper, 1999).¹⁴ These five steps are roughly aligned with Hossler and Gallagher's (1987) three-stage model—predisposition, search, and choice—of the college choice process. According to Berkner and Chavez, the first step involves the decision to pursue postsecondary education and at what type of institution (e.g. academic or vocational, two-year or four-year). Next, students must prepare academically for college-level work, which means becoming at least minimally college-qualified. Research by Adelman (1999, 2005) suggests that the highest level of coursework completed in certain subjects, particularly math, serves as a proxy indicator of the quality and intensity of academic preparation. As a third step, students usually need to complete either the SAT or ACT entrance examination. Fourth, students choose one or more institutions they wish to attend and submit applications and, finally, students must gain acceptance and make the financial and other arrangements necessary to enroll.

While the actions required to make one's way to college have been identified, the evidence suggests that information about this sequence of steps nonetheless remains out of reach for many families. This lack of information, or even misinformation, appears to be especially prevalent among Latino students (Gándara, 1998, 2002; Gonzalez et al., 2003; Immerwahr, 2003). As O'Connor (2009, p. 137) writes, “the literature is very consistent in its documentation of the incomplete information Hispanic students possess regarding higher education.” This information gap is concerning inasmuch as those students and their parents who do have timely access to accurate information will be more likely to engage in actions which align with their educational expectations.

Theoretical Framework

The phrase 'student college choice' has been used to refer both to the decision to continue one's education at the postsecondary level as well as to the decision to enroll in a specific institution of higher education. The process of student college choice has attracted interest from a wide audience, including researchers from various academic disciplines but also institutional, state, and federal policymakers (Hossler & Stage, 1992). Hossler and colleagues (1989) identify four types of college choice models, including econometric, consumer, sociological, and combined models.

While early investigations of college access arose within the econometric tradition and focused primarily on human and financial capital, more recent research within a sociological framework probes the ways in which sociological constructs of cultural and social capital are related to student college choice (Perna, 2006; Perna & Thomas, 2008). As with human, physical, and economic forms of capital, cultural and social capital are resources which can be invested to facilitate upward mobility. Forms of cultural and social capital can also be manipulated to delineate social boundaries where insiders are advantaged in ways that increase productivity while outsiders are disadvantaged (Bourdieu, 1986; Coleman, 1988; Lamont & Lareau, 1988; Perna, 2006).

As McNeal (1999) observes, notions of cultural and social capital have sometimes overlapped. This is not surprising inasmuch as economic sociologist, James Coleman, and cultural sociologist, Pierre Bourdieu, are two of the most prominent figures in social capital theory (Dika & Singh, 2002). In peeling apart this overlap, Ream (2005) explains how Coleman (1990) draws linkages between social capital and neoclassical economic

thought as embodied in the theory of human capital. Bourdieu's more critical conception of social capital (Bourdieu, 1986) hearkens back to his earlier work addressing cultural capital and cultural reproduction (Bourdieu, 1977).¹⁵ Recent research on Latino college choice has attempted to operationalize and measure various forms of social capital, drawing on both Coleman and Bourdieu (see, for example, Perna, 2006; Perna & Titus, 2005; Gonzalez, et al., 2003).

In this investigation, social capital refers to individuals' capacity to gain access to scarce resources—including economic capital and employment or educational opportunities (Granovetter, 1982), as well as knowledge and information (Becker, 1964)—by virtue of their membership in groups and participation in broader structures of society. This definition attempts to capture elements of both Coleman's as well as Bourdieu's work on social capital. Coleman views parents' roles as predominant in promoting their children's status attainment, while Bourdieu's approach describes the restrictions imposed by structural barriers (Bourdieu, 1986; Coleman, 1988; Dika and Singh, 2002).

Particular emphasis is placed on less tangible resources that inhere in parental relations. Accordingly, this research shines a light on whether the intergenerational transmission of not only parents' human capital and economic resources, but also the social exchange of resources among parents, may impact alignment between students' expectations and actions as well as their postsecondary enrollment behavior. Social capital theory guides this work.

Methods

Data Source and Participants

This research uses data from the *Educational Longitudinal Study of 2002 (ELS:2002)*, an integrated, multilevel study that involves multiple respondent populations including students, their parents, their teachers, and school personnel.¹⁶ Initial data from student sample members was collected during the base-year interview in the spring of 2002, when students were in 10th grade. The first follow-up interview was conducted in 2004, and the second follow-up interview occurred in 2006, when most sample members would have been two years beyond high-school graduation. The *ELS* dataset is especially suited to the proposed study for three reasons. First, *ELS* is designed to explore students' transitions from secondary school into postsecondary education or the workforce. Second, *ELS* contains variables that enable measurement of parent resources, including social capital, that are known to affect student postsecondary transitions. Finally, *ELS* contains items that measure students' postsecondary expectations, as well as items that measure students' actions toward the fulfillment of expectations; taken together, these items indicate alignment of students' postsecondary expectations and preparation.

Drawing from the base-year panel of 2002 10th graders who were then resurveyed in 2004 and 2006 ($N = 13,221$), the initial sample for this study includes all students who had obtained a high school diploma or had completed an alternative credential by June of 2005 (one year beyond expected high school completion) and who reported in 2004 that they expected to complete a BA or advanced degree ($N = 8,555$).¹⁷ The study sample is

further limited to Latino students whose stated educational expectation in their senior year was the completion of a bachelor's degree ($N = 1,024$). The degree of missingness on the observed variables ranged from 0 % to 13 % among students (average missingness <2 %), and from 0 % to 24 % among parents (average missingness <13 %).

Dependent variable. The key outcome of interest in this investigation is the level of college enrollment in 2006. This outcome, measured a year and half after expected high school graduation, reflects whether a student was (1) not enrolled in any postsecondary institution (includes stop- and drop-outs), (2) enrolled in a 1- or two-year institution, or (3) enrolled in a four-year institution.¹⁸

Background variables. To reduce the probability of unmeasured selection processes, a number of control covariates that could account for the influence of parent resources on both alignment and postsecondary outcomes are included in the exploratory models.¹⁹ These background variables include base year postsecondary expectations, base year standardized test score composite, gender, family structure, and school control (public or private).²⁰

Parent resources. I conceptualize the economic and sociological resources at parents' command as interrelated types of capital that play a role in students' transitions to postsecondary education. Information from the base year data collection about three kinds of parent resources are included in this investigation. Measures of *economic* and *human* capital provide relatively concrete indicators of resources parents invest on behalf of their children. Measures of *social* capital represent less tangible but particularly

important reflections of parents' access to information, *via* social exchange, about college investment decisions.

A careful examination of theory and prior research has informed the selection of indicators for the social capital constructs employed in this research. Given that the social aspects of resource exchange are multidimensional and complex (Ream, 2005), I attempted to maintain greater conceptual coherence by searching the *ELS* dataset for items reflecting the frequency and nature of parents' interactions with others around issues and activities relevant to their child's college choice process.²¹ This was especially true in the selection of indicators approximating parents' social exchanges with their children and with school agents. I use latent factor analysis to measure parental stocks of some forms of social capital in this investigation. Latent factor analysis allows the researcher to examine hypothetical constructs using a variety of observable indicators of the constructs which can be directly measured (Raykov & Marcoulides, 2006). Ultimately, I developed three latent constructs representing various forms of parent social capital. Reliability estimates for each construct were $\leq .80$.²²

- *College-Relevant School Social Capital*: a three-item construct including the frequency with which the parent contacts the school about the student's course selection, about the student's school program for the following year, and about the student's plans after high school.
- *College-Relevant Family Social Capital*: a three-item construct including the frequency with which the parent provides the student with advice about selecting

high school courses, about plans for taking college entrance exams, and about applying to college after high school.

- *Intergenerational Closure*: a five-item construct including whether the parent reports knowing the mother and/or the father of the student's closest friend, the number of times a parent of one of the student's friends gave the parent advice about the school's courses or teachers, how often the parent has received a favor from a parent of one of the student's friends, and how often the parent has provided a favor to a parent of one of the student's friends.

Economic capital is represented by an indicator of parents' income from all sources, which to some degree reflects their actual ability to pay for college (Perna & Titus, 2005).²³ This measure, taken during base-year data collection, was rescaled by NCES as a 13-level continuous variable prior to data release. Human capital is represented by a single indicator of the highest level of education completed by either parent. Following Alon et al. (2010), I collapsed this 5-level measure into a 3-level variable indicating whether the highest level of education completed by either parent was no college experience, some college experience, or a bachelor's or advanced degree.²⁴

Measuring alignment. The alignment measure was created, using latent factor analysis, by situating within students' expectations of completing a bachelor's degree their level of college preparation and academic performance. Data pertaining to college preparation and academic performance reflect the actions students have taken toward realizing their expectations as of the first follow-up when most students in the *ELS* sample were in 12th grade. Data regarding students' actions are based primarily on

student reports, with some cross-verification using institutional data. Variables were selected which indicate whether the student is academically prepared, as reflected by his or her cumulative high school GPA and the highest math course he or she has taken (based on students' high school transcripts), whether the student has taken a college entrance exam, and whether the student has applied to one or more four-year colleges.

Morgan (2002) described a student's *prefigurative* commitment as his or her cognitive commitment toward enrollment in college following high school and also described the notion of *preparatory* commitment as "the potentially observable course of everyday behavior that positions an individual to realize his or her prefigurative commitment" (p. 392). Following Morgan (2002), the notion of alignment proposed in the current research can be seen as an approximation of the match between a student's prefigurative and preparatory commitments.²⁵

Conceptual Framework and Statistical Analyses

I examine the hypothesized impact of parent resources on Latino student college enrollment *via* student expectation-action alignment using structural equation modeling (SEM) techniques (Mplus statistical software, Version 6.0, Muthén & Muthén, 2010). The use of SEM techniques allows me to simultaneously test associations among the variables and constructs of interest and to investigate the time-sequenced process depicted in the conceptual framework (see Figure 2.1).²⁶

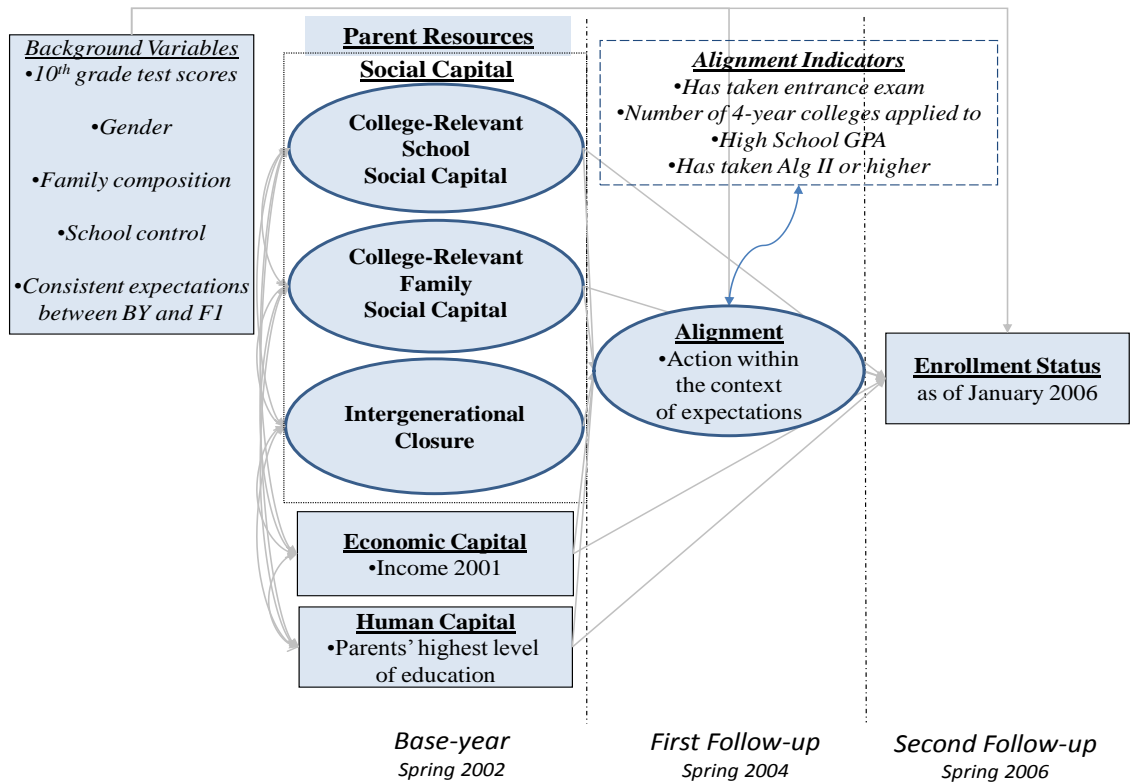


Figure 2.1. Conceptual framework.²⁷

This research employs ordered probit regression given that the outcome is a categorical variable with three levels.²⁸ The probit regression model is typically presented in terms of the conditional probability of y given x . In the context of this research, the conditional probability of being enrolled at level q for student i can be represented by the following statistical model,

$$Prob(y = q \mid \eta_{iy}, \mathbf{x}_i) = 1 - \Phi [(\tau_p + \lambda_y \eta_i + \kappa_j \mathbf{x}_i) (1/\sqrt{\theta_y})]$$

where $\boldsymbol{\eta}$ is a vector of latent factor means for individual i with the observed outcome variable y and \mathbf{x} is a vector of observed covariates for individual i . The Cumulative Distribution Function of the standard normal distribution is represented by Φ , and τ defines a threshold ($-\tau = \alpha$) for the observed latent response variable y^* that underlies the

observed y such that that $y = q$ is observed when y^* exceeds τ_p , the threshold separating the $y = p$ from $y = q$. The vector of probit regression coefficients for the regression of y on the latent factors for individual i is represented by λ and the vector of probit regression coefficients for the regression of y on the observed covariates is represented by κ . Finally, θ is the residual variance of y .

In order to examine whether the alignment between students' postsecondary expectations and actions during high school mediates the impact of parent resources on postsecondary enrollment, I use the four-step process outlined by Baron and Kenny (1986) and others (e.g. Kenny, Kashy, & Bolger, 1998; Mackinnon & Fairchild, 2009; Mackinnon, Lockwood, Hoffman, West, & Sheets, 2002). First, variation in levels of parent resources should share a significant association with variation in the outcome, college enrollment status as of January 2006. Second, variation in levels of parent resources must significantly account for variations in alignment. Third, variations in alignment must significantly account for variations in enrollment, controlling for parent resources. Last, when the impact of parent resources on alignment and the impact of alignment on enrollment are accounted for, any previously significant associations between parent resources and enrollment must be reduced—in the instance of full mediation to insignificance (Baron & Kenny, 1986; Little, Card, Bovaird, Preacher, & Crandall, 2007). According to this framework, the presence of mediation requires that at least the second and third of the four criteria listed above be fulfilled.²⁹

Results

The results are presented in two main sections. First, I describe the average characteristics of the sample as reflected by the variables and constructs of interest in this investigation. Second, I model links among the focal variables and constructs via the four-step process used to examine whether student alignment mediates the association between parent resources and student college enrollment behavior.

Descriptive Findings

The descriptive analyses are displayed in Table 2.1. The mean sample family income for Latinos in 2001 was just over \$30,000 (median \approx \$35,000) and the highest average level of education attained by either parent was some college. Sixty percent of students in the sample lived with both parents and most (77 %) attended a public high school. Almost 80 % of the students in the sample also had expectations of completing a bachelor's degree in 10th grade. The average sample member had an accumulated high school grade point average just under 3.0 and had passed Algebra II. Almost three quarters of the sample (73 %) had taken at least one college entrance exam, perhaps reflecting the increasing number of students taking entrance exams nationally in response to an increasingly competitive college admissions environment (Contreras, 2005). The average student in the sample had applied to at least one four-year college or university and was enrolled in a one- or two-year institution in 2006.

Table 2.1. *Descriptive Statistics on Primary Study Measures*

	M(SD)	Range
<u>Parent Resources</u>		
<i>Social Capital</i>		
College-Relevant School Social Capital ^{ab}	0.43(0.89)	-0.63 - 2.94
<i>How often parent contacts school about academic program</i>	1.42(0.66)	1(never) - 4(5+ times)
<i>How often parent contacts school about course selection</i>	1.28(0.55)	1(never) - 4(5+ times)
<i>How often parent contacts school about plans after high school</i>	1.25(0.55)	1(never) - 4(5+ times)
<i>College-Relevant Family Social Capital^{ab}</i>		
<i>How often parent provides advice about course selection</i>	2.38(0.68)	1(never) - 3(often)
<i>How often parent provides advice about taking entrance exams</i>	2.19(0.77)	1(never) - 3(often)
<i>How often parent provides advice about applying to college</i>	2.21(0.79)	1(never) - 3(often)
<i>Intergenerational Closure^{ab}</i>		
<i>Knows mother of child's closest friend</i>	0.81(0.39)	0(no) - 1(yes)
<i>Knows father of child's closest friend</i>	0.63(0.48)	0(no) - 1(yes)
<i>How often parent of child's friend gives advice about teachers and courses at the school</i>	1.36(0.70)	1(never) - 4(5+ times)
<i>How often parent of child's friend provides a favor to parent</i>	2.09(1.13)	1(never) - 4(5+ times)
<i>How often parent provides favor to parent of child's friend</i>	2.20(1.13)	1(never) - 4(5+ times)
<i>Economic Capital</i>		
Income	8.63(2.37)	1(no income) - 13(\$200,000+) ³⁰
<i>Human Capital</i>		
Education	2.01(0.81)	1(no college) - 3 (BA or advanced degree)
<u>Student Alignment</u>		
Expectation-Action Alignment ^{ab}	3.39(0.95)	1.48 - 5.79
<i>High school GPA</i>	4.05(1.37)	0(0.00-1.00) - 6(3.51-4.00)
<i>Highest math course completed</i>	2.32(0.75)	1(< Alg II) - 3(> Alg II)
<i>Has take a college entrance exam</i>	0.73(0.44)	0(no) - 1(yes)
<i>Number of four-year institutions applied to</i>	1.54(1.21)	0(none) - 3(2+)
<u>College Enrollment</u>		
Level of enrollment in 2006	2.00(0.85)	1(not enrolled) - 3 (four-year enrolled)
<u>Background Covariates</u>		
Consistent Expectations	0.78(0.41)	0(no) - 1(yes)
Test scores	49.74(8.88)	20.91 - 81.04
Gender	1.58(0.49)	1(male) - 2(female)
Family composition	0.40(0.49)	0(both parents) - 1(other)
School control	0.23(0.42)	0(public) - 1(private)

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006. Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Note: N=1,022. Statistics based on weighted sample.

^a Latent factor means adjusted for background covariates.³¹

^b Latent factor ranges reflect the range of estimated latent factor scores among individuals in the sample.³²

Mediation

Step 1. I began by regressing 2006 college enrollment status on 2002 parent resources while controlling for consistency of student college expectations between 2002 and 2004, student test scores, gender, family composition, and school control. This model, which demonstrated a strong fit to the data, showed significant effects for all control variables ($p < .05$ in each case) except gender.³³ All of the control variables shared a positive relationship with enrollment with the exception of family composition. Among the various types and forms of parent resources under investigation in this research, it was only parent human capital in the form of a bachelor's or advanced degree which approached a significant association with college enrollment status ($t(109)=1.81$, $p=.07$). Details for this model, including probit regression coefficients, standard errors, and t values, as well as model fit statistics are presented in Table 2.2.

Table 2.2. *College Enrollment Regressed on Parent Resources*

	College Enrollment Status		
	<i>b</i>	<i>SE</i>	<i>t</i>
<u>Parent Resources</u>			
<i>Social Capital</i>			
College-Relevant School Social Capital	0.05	0.10	0.52
College-Relevant Family Social Capital	0.00	0.09	0.05
Intergenerational Closure	0.15	0.11	1.32
<i>Economic Capital</i>			
Income	0.01	0.02	0.71
<i>Human Capital</i>			
Education: Some college	-0.07	0.10	-0.64
Education: BA or above	0.22	0.12	1.81
<u>Background Covariates</u>			
Consistent expectations	0.28	0.11	2.46
Test scores	0.43	0.06	7.14
Female	0.11	0.10	1.05
Family composition	-.20	0.10	-2.14
Private school	0.35	0.12	2.83
<u>Fit Statistics</u>			
χ^2	129.90(109), <i>p</i> = .08		
CFI	0.99		
RMSEA	0.01 (90% CI, 0.00-0.02)		

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006. Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Note: N = 1,022; CFI = Comparative Fit Index. RMSEA = Root Mean Square Error of Approximation; When using the WLSMV estimator, the chi-square statistic provided in Mplus is not distributed as chi-square.

In contrast to a substantial literature on the positive influence that higher levels of parent income have on the college-going behavior of adolescents, the association between parent income and college enrollment for this nationally representative sample of Latino students was not significant.³⁴ In addition, parent stocks of college-relevant social capital did not significantly account for variation in college enrollment. In line with the work discussed earlier by Alon and colleagues (2010), this pattern of effects suggests that

many of the parent resources we typically assume would share a significant association with students' college-going behavior do not seem to provide the expected level of advantage among Hispanic students.³⁵

Step 2. I continued by regressing 2004 student expectation-action alignment on parent resources and control variables. In this model, which also fit the data well, all of the control covariates exerted a significant influence on student alignment. It is worth noting that being a female confers the expected advantage among Hispanic youth in this model whereas the association between gender and enrollment did not reach significance in the previous model (see Table 2.2), suggesting that the enrollment advantage experienced by Latinas may work through their higher levels of alignment. Further, the fact that the positive association between alignment and having consistently high expectations between 10th grade and 12th grade appears to be stronger than the association between consistent expectations and enrollment (see Table 2.2) may partly reflect the pathway via which the demonstrated positive effect of having bachelor's degree expectation in 10th grade confers an enrollment advantage among Hispanic students (Arbona & Nora, 2007). Additionally, attending a Catholic or other private school also appears to support the development of greater levels of alignment. Turning to the influence of parent resources on alignment, none of the types of resources in the model shared a significant association with student alignment. Not unlike the pattern of effects observed between parent resources and college enrollment, these results suggest that among Latino students, one's level of alignment between expectations and the actions undertaken during high school in pursuit of those expectations has more to do with

individual characteristics and the type of high school attended than with the intergenerational transmission of resources from parent to child. This finding is consistent with other recent research (Engberg & Wolniak, 2010; Nuñez & Kim, 2012). Details are provided in Table 2.3.

Table 2.3. Student Alignment Regressed on Parent Resources

	Alignment		
	<i>b</i>	SE	<i>t</i>
<u>Parent Resources</u>			
<i>Social Capital</i>			
College-Relevant School Social Capital	0.12	0.07	1.67
College-Relevant Family Social Capital	0.04	0.06	0.76
Intergenerational Closure	0.05	0.08	0.59
<i>Economic Capital</i>			
Income	0.01	0.02	0.28
<i>Human Capital</i>			
Education: Some college	-0.10	0.10	-1.04
Education: BA or above	0.05	0.11	0.47
<u>Background Covariates</u>			
Consistent expectations	0.47	0.11	4.31
Test scores	0.57	0.07	8.37
Female	0.19	0.08	2.50
Family composition	-0.16	0.08	-1.95
Private school	0.36	0.12	3.13
<u>Fit Statistics</u>			
χ^2	224.70(166), <i>p</i> =.00		
CFI	0.98		
RMSEA	0.02 (90% CI, 0.01-0.03)		

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006.

Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Note: N = 1,022; CFI = Comparative Fit Index. RMSEA = Root Mean Square Error of Approximation; When using the WLSMV estimator, the chi-square statistic provided in Mplus is not distributed as chi-square.

Step 3. Next, I proceeded to regress college enrollment on student alignment and control covariates. This model was also a good fit with the data. Immediately evident was

the fact that, as expected, the level of alignment between a student's college expectations and related actions shares a strong ($t(27)=12.76, p=.00$) association with his or her college enrollment status in 2006. In fact, in the presence of alignment, the previously significant effects exerted by all of the control covariates on college enrollment behavior in Step 1 lose their significance. Additional details are presented in Table 2.4.

Table 2.4. *College Enrollment Regressed on Student Alignment*

	College Enrollment Status		
	<i>b</i>	SE	<i>t</i>
<u>Student Alignment</u>			
Expectation-Action Alignment	0.98	0.08	12.76
<u>Background Covariates</u>			
Consistent expectations	-0.16	0.10	-1.53
Test scores	-0.09	0.07	-1.21
Female	-0.07	0.09	-0.79
Family composition	-0.07	0.10	-0.68
Private school	0.06	0.12	0.51
<u>Fit Statistics</u>			
χ^2	70.68(27), $p=.00$		
CFI	0.96		
RMSEA	0.04 (90% CI, 0.03-0.05)		

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006.

Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Note: N = 1,022; CFI = Comparative Fit Index. RMSEA = Root Mean Square Error of Approximation; When using the WLSMV estimator, the chi-square statistic provided in Mplus is not distributed as chi-square.

Step 4. I concluded this series of analyses by regressing 2006 college enrollment status on 2002 parent resources, 2004 student alignment, and model control covariates.

This model, which again fit the data well and explains 61 % of the variability in the outcome measure, also demonstrates the positive influence that student expectation-action alignment has on college enrollment ($t(177)=12.15, p=.00$). Similar to the pattern

observed in Step 3, in the presence of alignment none of the control covariates share a significant relationship with enrollment. Interestingly, having high expectations, high test scores, and being a female do not confer the expected positive boost for enrollment outcomes above and beyond the extent to which these characteristics promote alignment.³⁶ Results suggest that, on average, a one unit increase in the level of student alignment in 2004 is associated with a 0.98 standard deviation unit increase in the latent variable underlying the observed level of college enrollment in 2006.

It is perhaps most informative to consider the predicted probabilities of enrollment status given a standard deviation increase in alignment.³⁷ For the average Latino student,³⁸ increasing alignment by one standard deviation increases the predicted probability of enrollment in a four-year institution from 27 % to 76 %—almost a 50 percentage point increase (see Appendix A2 for details). Perhaps not surprisingly, given the results observed in Step 2, none of the types and forms of parent resources under investigation exerted a significant effect on college enrollment via an influence on student alignment. Model details are provided in Table 2.5.

Table 2.5. *Full Structural Equation Model*³⁹

	College Enrollment Status		
	<i>b</i>	SE	<i>t</i>
<u>Parent Resources</u>			
<i>Social Capital</i>			
College-Relevant School Social Capital	-0.05	0.08	-0.65
College-Relevant Family Social Capital	-0.04	-0.08	-0.54
Intergenerational Closure	0.10	0.10	0.99
<i>Economic Capital</i>			
Income	0.01	0.02	0.35
<i>Human Capital</i>			
Education: Some college	0.03	0.10	0.26
Education: BA or above	0.17	0.12	1.42
<u>Student Alignment</u>			
Expectation-Action Alignment	0.98	0.08	12.15
<u>Background Covariates</u>			
Consistent expectations	-0.16	0.11	-1.54
Test scores	-0.11	0.08	-1.37
Female	-0.08	0.09	-0.85
Family composition	-0.05	0.10	-0.51
Private school	0.02	0.12	0.17
<u>Fit Statistics</u>			
χ^2	240.98(177), $p=.00$		
CFI	0.98		
RMSEA	0.02 (90% CI, 0.01-0.03)		

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006.

Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Note: N = 1,022; CFI = Comparative Fit Index. RMSEA = Root Mean Square Error of Approximation; When using the WLSMV estimator, the chi-square statistic provided in Mplus is not distributed as chi-square.

Mediated and Total Effects

As stated earlier, in order to conclude that partial or full mediation is occurring, at least two criteria must be fulfilled. First, the given independent measure, or type of parent resource, must share a significant relationship with the mediating measure, alignment.

The second criterion for mediation requires that the effect of the mediator must be

significantly associated with the outcome, here enrollment status, when controlling for the independent measures in the model, here parent resources. Regarding the first criterion, none of the types of parent resources investigated here shared a significant association with student alignment. While alignment proved to be strongly associated with college enrollment among this sample of Latino students, fulfilling the second criteria, alignment did not mediate the influence of any of the types and forms of parent resources included in this investigation.

The decomposition of the total effect of each type and form of parent resources into its direct and indirect effects is presented in Table 2.6. These results again demonstrate that parent resources did not exert a particularly strong influence on enrollment, making the presence of mediation unlikely. Indeed, only one type of parent resource, parent human capital in the form of a bachelor's or advanced degree, had a significant ($t(177) = 2.24, p = .03$) total effect on college enrollment. Further, none of the indirect effects of parent resources on enrollment *via* alignment reached significance.

Contrary to the hypothesis that parent resources would "do their work" *via* student alignment, these resources did not share significant associations with alignment. While alignment appears to be a critical component of the college choice process among Hispanic students, those factors supporting the development of aligned expectations and actions among this group of students remain less than clear.

Table 2.6. *Decomposition of the Total Effect of Parent Resources on College Enrollment*

	Direct Effect			Indirect Effect through Alignment			Total Effect		
	<i>b</i>	<i>SE</i>	<i>t</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>b</i>	<i>SE</i>	<i>t</i>
<i>Parent Resources</i>									
<i>Social Capital</i>									
College-Relevant School social capital	-0.04	0.09	-0.47	0.10	0.08	1.33	0.06	0.10	0.60
College-Relevant Family Social Capital	-0.05	0.09	-0.62	0.05	0.07	0.79	0.00	0.08	0.01
Intergenerational closure	0.10	0.11	0.89	0.05	0.10	0.42	0.15	0.13	1.16
<i>Economic Capital</i>									
Income	0.01	0.03	0.24	0.01	0.02	0.45	0.02	0.02	0.81
<i>Human Capital</i>									
Education: BA or above	0.17	0.12	1.39	0.10	0.12	0.87	0.27	0.12	2.24

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006.

Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Note: N = 1,022; Probit regression parameter coefficients differ slightly from those provided in Table 2.5; this results from the fact that model results for the decomposition of effects were requested with bootstrapped standard errors.

Discussion

Through an investigation of the linkages among parent resources, student alignment and student enrollment behavior, this research makes several important contributions to the literature on postsecondary transitions among Latino youth. First, few studies have attempted to examine the educational utility of network-bound parental resources among specific racial and ethnic groups (Ream & Rumberger, 2008). I address this gap. In addition, I further develop work by Schneider and others on the notion of alignment, specifically with respect to the relationship between students' postsecondary expectations and actions. Finally, I link various types of parent resources with student alignment in order to explore whether the degree of alignment either facilitates or hinders

the transmission of parent resources known to influence youth's transitions to postsecondary education.

Findings indicate that while student alignment appears to play a crucial role in the college choice process, few of the parent resources under investigation exerted a particularly strong influence, either directly or indirectly, on college enrollment among this sample of Latino students. Perhaps this latter finding should not come as a complete surprise given that recent scholarship on the associations among parent income and Latino student college outcomes has provided similar results (Alon et al., 2010; Gándara & Contreras, 2009; Nuñez & Kim, 2012; O'Connor, 2009). The one exception was parent human capital in the form of a bachelor's or advanced degree, which does appear to provide students holding bachelor's degree expectations with a boost in terms of the level at which they enroll in college. Further, and contrary to expectations, none of the types and forms of parent resources under investigation were strongly related to student alignment, although parent-initiated contact with school agents around decisions related to course selection and their child's future plans was moderately associated with alignment. Thus, while alignment plays an important role in the college choice process, sharing a strong association with college enrollment, the level of alignment did not function as mediator between parent resources and enrollment among Latino students.

It appears that when it comes to the college choice process, the varied resources that Hispanic parents command do not entirely predict where their child is headed. Also important appears to be the degree to which students develop informed goals and expectations regarding their futures and then take the important steps, at the right time,

that will allow them to realize those expectations. In other words, it appears that "getting aligned" by the time students reach the end of high school plays a critical role in their enrollment behavior. To the extent that alignment can be developed through the support, encouragement, and assistance not only of parents, but also of school personnel, friends and other family, community members, and policymakers, the critical nature of alignment could be good news. However, for the importance of alignment to work to the advantage of Latino students, rather than serving as an additional barrier to a college degree, researchers will need to continue building better understandings of how alignment develops among Latino students. The contributions made by psychosocial factors such as self-efficacy, academic engagement and motivation to the development of alignment may be particularly fruitful lines of inquiry.

Auerbach (2004, p. 126) concludes that "the burden of college planning has fallen increasingly on Latino students and their families on an uneven playing field." While numerous scholars have documented the positive influence of family in the Latino college choice process (Ceja, 2004; Gándara, 1995; Pérez, 1999; Pérez & McDonough 2008), the present research suggests that at least some Hispanic parents may be nested in social networks that remain limited in terms of their informational resources related to helping their child realize their postsecondary expectations. There is a need for more nuanced inquiry into how, when, and from which resourceful others, both kin and non-kin, Latino students and their parents gain access to critical information about getting into and getting through college.

Additionally, although Hispanic students may have high academic and career expectations, the fact that they often face significant obstacles in the form of inadequate or inappropriate high school programs and school structures only serves to compound the effects of limited access to college information within the family (Oakes, Silver, & Mendoza, 2006; Oakes et al., 2006; Solórzano 1992a, 1992b; Valenzuela, 1999). In their chapter outlining policy measures for addressing cross-group disparities in educational outcomes, Mitchell and colleagues (2012) note that addressing achievement and attainment gaps depends largely on "intentionally designing a social support system that encompasses every student—a network of people who seamlessly link home and school so as to produce a countervailing force in the lives of at-risk youth" (p.137). The findings of the current research hint at the need for the development of more meaningful and resourceful linkages between students, parents, and schools when it comes supporting Latino youth in their efforts to realize educational goals.

Limitations

The findings presented here add to the small but growing body of research which seeks to better understand how Latino youth and their families navigate the college choice process by adding a number of new pieces to the puzzle of Hispanic degree attainment. Still, this study, like any, is not without limitations.

First, while quantitative methodologies are of particular value in testing and confirming theoretical propositions about the college choice process for specific populations, they preclude the ability to understand this process for any specific individual. Thus, while external validity may be high, allowing for wider generalizability,

this research is limited with respect to understanding the nuances of how and why the college choice process and transitions to postsecondary education unfold (or not) in specific ways for individual youth. Additionally, with respect to the issue of generalizability, it is important to remember that this research excludes students who did not expect to complete a bachelor's degree in their senior year and/or who did not complete high school. These exclusions were made given that individuals who do not aspire to a BA degree may attend two-year schools for a variety of reasons but are generally not interested in attending four-year schools (O'Connor et al., 2009). Excluding such students allowed me to focus on the research issue of interest, that is, whether the extent to which students' actions are aligned with their bachelor's degree expectations serves to either impede or promote the intergenerational transfer of resources and therefore ultimately plays a role in the lower observed rates of bachelor's degree attainment among Latinos. However, this makes the sample included in this research a relatively selective group of students meaning that any conclusions drawn from this research may not be applicable to the entire Latino college-age population.

In addition, because the population of Latinos in the United States is not monolithic, it is possible that there may be different patterns of college choice depending on students' national origin and nativity status. This study attempted to address national origin differences by including Mexican-origin status as a covariate in preliminary models. The relatively small sample sizes of other Latino sub-groups (e.g. Cuban, Dominican, Puerto Rican, Salvadoran) did not allow for further disaggregation. Whether the associations among the resources at parents' command, student alignment, and student

college enrollment might vary across generations of Latino youth merits further consideration, especially given the salience of similarities and/or differences across generation status for understanding whether lower levels of access to and persistence in higher education observed among U.S. Hispanics relative to their non-Hispanic White counterparts represents a "temporary lull" or instead reflects "stymied mobility" (Alon et al., 2010; Tienda, 2011). Examining more carefully whether the process modeled in this research differs among U.S. Hispanic youth according to immigrant generation status constitutes an important next step as I continue to engage in research related to the Hispanic college puzzle.

Finally, as Lin (2001) observes, individual action cannot be fully understood except in relation to the social context in which it occurs. While this study has the advantage of allowing for a close examination of the ways in which certain characteristics of parents and students impact the process of college choice, it was not designed to investigate the further influence of students' community, school, and state policy contexts. It is hoped that findings from this study will inform future research on the effect of context in postsecondary transitions among Latino students.

Concluding Remarks

The equation that combines Latinos' lower educational attainment with the fact that Latinos as a group will comprise a substantial percentage of U.S. adults in the labor force by 2025 sums up to the conclusion that improving the educational success of Latinos is critical to promote their own individual social mobility but also to at least preserve, and hopefully enhance, the vitality of the U.S. economy and labor force.

Perhaps the most important finding arising out of this investigation is that alignment between student college expectations and action plays an extraordinarily critical role in the college choice process. To the extent that Latino students become aligned through access to timely and accurate information about getting into and getting through college, one question worth pursuing is this: If something is inhibiting the flow of college information to Latino students through their parents, then who are the non-parental individuals in students' social networks providing critical information about how to realize their ambitions? More broadly speaking, why is it that some Latino youth align their actions with their high expectations while others do not?

Reflecting on the fact that programmatic efforts aimed at boosting postsecondary access and retention among low income youth and students of color are not making as big of a difference as was hoped, Datnow and colleagues (2010) point out that there exists a knowledge gap about the specific populations who are the intended recipients of these interventions. Continuing to fill in the holes in our knowledge regarding how the population of Hispanic students in the United States come to align the expectations they have about college with the actions they take in pursuit of those ambitions is an imperative next step in piecing together the complex puzzle of Hispanic college attainment.

¹² On the west coast the meta-categorical term Latina/o is often preferred to Hispanic (Bean and Tienda, 1987). Yet when U.S. Latinos/Hispanics are asked to choose between the panethnic terms, Hispanic is preferred over Latino by a 3 to 1 margin (National Research Council, 2006). Here, both terms are used interchangeably, but it is recognized that neither of these labels comes close to capturing the vast ethnic and cultural heritage of the populations of interest.

¹³ This differentiation can be seen in the *ELS:2002* survey instruments where, for example, parents are asked how far they *want* their child to go in school and, separately, how far they think their child *will* go in school. In the student survey, high school students are asked to indicate how important they think it is to get a good education, and then elsewhere asked to indicate how far they think they will go in school.

¹⁴ The five steps outlined by Berkner and Chavez comprise what can arguably be considered the minimum number of actions required to gain "competitor" status in the college entrance competition. Yet, many parents from middle and high socioeconomic backgrounds engage in a process of "concerted cultivation" (Lareau, 2000) with their children and, as Alon (2009) notes, these parents are highly involved in decisions about their children's academic activities and high school course placements (Lareau, 2000; Lareau and Horvat, 1999; Lucas, 1999; Massey et al., 2003). As stratification in the postsecondary system has continued to intensify since the mid-1980s, these parents have increasingly engaged in steps stretching far beyond those outlined by Berkner and Chavez. Alon goes on to state that this augmented sequence of *parental* actions includes, for example, enrolling their children in admissions test-preparation activities and selecting the high school that will provide an adequately rigorous college-preparatory curricula, all with the goal of situating the student in optimal field position during the "college admissions game" (Moll, 1978; 1979).

¹⁵ Cultural capital exists as a system of attributes which may be embodied (dispositions of the mind and body, such as values or mannerisms), objectified (cultural goods such as fine art), and institutionalized (educational credentials, for example) (Bourdieu, 1986; Bourdieu & Passeron, 1977). Central to Bourdieu's (1986) work on cultural capital are also notions of *habitus* and *field*. The social space in which individuals interact is a field characterized by the push and pull of social forces among agents with various means and ends; this field is organized by the "rules of the game," although these rules are not explicit. The field is ever-changing, making valued forms of cultural capital dynamic and arbitrary. Moreover, the "players" on the field each bring to it a different set of dispositions, or a habitus. Individuals come bearing a variety of forms of cultural capital, some of which are more valued than others.

¹⁶ The *ELS* data were collected through a two-stage stratified random sampling strategy such that the dataset includes a nationally representative cohort of 10th graders in 2002 (see: <http://nces.ed.gov/surveys/els2002/>). In the first stage of the sampling strategy, schools were stratified by region, urbanicity, and control (public, Catholic, or other private). Each school had a probability of selection into the school sample proportionate to its size. The final sample of schools consisted of 752 responding schools with a 10th grade, including 580 public schools and 172 private schools (including Catholic schools). During the second stage, students were selected into the sample using a clustering technique whereby a random sample of 24-26 students were selected from each school (as opposed to classrooms). Asian and Pacific Islander students were over-sampled. Of about 17,600 eligible selected sophomores, about 15,400 completed a base-year questionnaire, resulting in a weighted response rate of 87 %. The first follow-up interview took place in the spring of 2004, when most sample members were seniors in high school. The first follow-up included 16,500 students and 15,000 participated, for a weighted response rate of 89 %. The second follow-up interview took place in 2006, approximately 2 years after most sample members had graduated from high school. Of the 15,900 eligible sample members, 14,200 participated in the second follow-up, leading to a weighted response rate of 88 %. This study uses student

survey data from the base year, first follow-up and second follow-up, as well as parent survey data from the base year. The weighted response rate for the parent survey was 87.5 %.

¹⁷ Including students who expect to complete some level of postsecondary education less than a bachelor's degree could muddy the results of the analysis, given that not all students who enroll in a two-year college want or expect to complete a bachelor's degree.

¹⁸ The outcome variable was originally coded to indicate whether a student (1) never enrolled, (2) stopped or dropped out of a postsecondary institution, (3) was enrolled in a 1-year program, (4) was enrolled in a two-year institution, or (5) was enrolled in a four-year institution at the time of data collection. For the purposes of this research, the first and second categories were combined, as were the third and fourth categories, resulting in a three-level ordered outcome. Preliminary analyses indicated a likely violation of the assumption of parallel slopes when using the five-category outcome; collapsing the outcome into three categories resulted in the parallel slopes assumption being satisfied. The assumption of parallel slopes, an important assumption in ordered probit or logit regression analyses, essentially means that if a variable is associated with the likelihood of an individual being in the ordered categories of the outcome, then it is assumed that the probit coefficient linking this variable to the outcome holds the same value across all levels of the outcome (Borooah, 2002).

¹⁹ Selection bias is an ongoing issue in educational research. In any study without randomized assignment, we may never know whether we have fully assessed all possible sources of initial differences among individuals. It is important to acknowledge that, in the process of college choice, students self-select into different types of institutions for a variety of reasons. In fact, to some extent, this research models that selection process. Further, this study is of an exploratory nature, intended to better understand the mechanisms by which parent resources may (or may not) influence student college enrollment behavior. Subsequent confirmatory work will provide an appropriate context for the employment of quasi-experimental design techniques, addressing to an even greater extent selection issues and possible causal associations.

²⁰ A dummy variable, consistent postsecondary expectations, is included because students who maintain consistent bachelor's degree expectations may be more likely to pursue postsecondary education, particularly at a four-year institution (Kao & Tienda, 1998). The omitted category reflects those students who did not expect to complete bachelor's degree in 10th grade. The base year standardized test score composite is included to control for differences in achievement prior to data collection given that achievement differences are expected to influence postsecondary trajectories. A dummy variable, female, was created to control for gender, with the omitted category being male. Another dummy variable was created to reflect family structure. The omitted category for this variable is a student who lives with both biological parents. The dummy variable for school control, with the omitted category being public school, helps account for the fact that the type of school a student attends (here public or private) may influence his or her transition to adulthood (Adelman, 2002).

²¹ The identification of appropriate proxies for complex sociological constructs such as social capital is not without its complications. In the search for appropriate indicators of such constructs, there often exists a gap between the data one wants and the data one has access to. As stated earlier, I carefully combed through the available data related to college-relevant forms of social capital in a search for observable indicators of parents' social resources, assets which are *not* directly observable. Nonetheless, I was limited by the data in the extent to which I was able to closely approximate the number and nature of parents' associations with their children, with the school, and with other parents around issues related to college access and enrollment. There remains a need for large scale datasets that allow educational researchers to better understand and approximate the social networks and resources of both parents and students.

²² I attempt to approximate a more accurate estimation of reliability for each of the latent factors employed in this research through the use of Raykov's strategy for estimation of scale reliability, which was originally developed for use with LISREL software and was adapted for use with MPlus software. This reliability coefficient, ρ , has the advantage of not assuming tau-equivalence of the latent factor indicators. In addition, this reliability coefficient can be interpreted to generalize to the population for which the instrument (here, the latent factor) is being developed rather than only to the current research sample (Raykov, 2001).

²³ It is, however, recognized that income does not reflect parents' total net worth, or wealth, and that this limits its accuracy as an indicator of "ability to pay" for college (Conley, 2001).

²⁴ While a number of researchers have conceptualized parents' level of education as an indicator of cultural capital, it is arguable that educational attainment is best viewed as a general reflection of an individual's unique skills and developed capabilities, skills and capabilities being the components of human capital according to Becker (1962).

²⁵ Morgan (2002) suggested that an individual's preparatory commitment to a future course of behavior is a direct function of the strength of his or her prefigurative commitment to that course of behavior. Unfortunately, the *ELS* data do not provide a ready measure of the strength of students' college expectations making it difficult to evaluate this assumption.

²⁶ The use of structural equation modeling statistical analysis techniques affords the researcher numerous advantages (Raykov & Marcoulides, 2006). First, SEM can confirm the measurement model in which multiple items are hypothesized to reflect latent constructs while specifically accounting for measurement error.²⁶ Additionally, SEM improves upon techniques such as multiple regression through its capacity to estimate both direct and indirect effects while controlling for other aspects of the model. Finally, the use of SEM techniques allows me to capitalize upon the longitudinal nature of the *ELS* data.

²⁷ While several background covariates are employed in the model estimation, for ease of readability, these associations are not depicted in the conceptual model. In the conceptual framework, ellipses depict latent measures while rectangles represent observed measures.

²⁸ The probit link is used with the robust weighted least squares (WLSMV) estimator in the Mplus software. When using the WLSMV estimator with model covariates, model estimation proceeds in four steps. First, univariate probit regressions of each y^* on all x variables are conducted using all people with data on that y^* and the x variables. Second, bivariate probit regressions of each pair of y^* variables on the x variables are conducted using all people with data for that pair. Third, the weight matrix is estimated. Finally, the model is fit using weighted least squares. The first two steps of the model estimation use maximum likelihood estimation to handle missingness. Cases with missing data on any of the observed covariates or the outcome variable are dropped. This resulted in 2 cases being dropped from the analyses.

²⁹ While the first and fourth steps demonstrate whether mediation is complete and consistent (Kenny, Kashy, & Bolger, 1998), the second and third steps outline the only criteria needed to determine whether mediation is occurring. Partial, as opposed to complete, mediation is occurring when the association between the initial variable(s) and the outcome is reduced in absolute magnitude when the mediator is included but remains non-zero.

³⁰ The 13 income levels used by NCES are as follows: (1) no income; (2) \$1,000 or less; (3) \$1,001-\$5,000; (4) \$5,001-\$10,000; (5) \$10,001-\$15,000; (6) \$15,001-\$20,000; (7) \$20,001-\$25,000; (8) \$25,001-\$35,000; (9) \$35,001-\$50,000; (10) \$50,001-\$75,000; (11) \$75,001-\$100,000; (12) \$100,001-\$200,000; (13) \$200,001 or more.

³¹ The decision was made to present latent factor means conditional on other model measures given that, within the structural equation modeling framework, the simultaneous estimation of all model parameters, including latent factor means, implies that examining a particular parameter in isolation of the others lacks substantive meaning. Additionally, it is only possible to arrive at latent factor means that are comparable across groups by way of structural invariance testing, which presupposes that measurement invariance has been established. Once again, there is little to be gained in terms of substantive value by evaluating the invariance of any particular model parameter, including mean factor scores, in isolation of other aspects of the full structural model (See Appendix A4 for further information regarding the use of multiple group invariance testing to compare latent factor means across Latino and White students and parents).

³² Latent factor ranges reflect the range of estimated latent factor scores among individuals in the sample. Negative values result from the fact that factor scores are not centered. The process of factor score estimation provides a metric by assigning factor scores a mean of zero (L. Muthén, 12/1/2006, Mplus Discussion Board). In the case where a latent factor is predicted by other factors in the model, the metric for the dependent latent factor is also adjusted for the influence of each of those predictors. These score ranges are derived from the model in which the alignment construct is regressed on parent resources and model covariates. It was not possible to estimate latent factor scores for the full model because one cannot estimate latent factor scores in Mplus when the model includes a dependent variable regressed on another dependent variable (in this model, enrollment regressed on alignment). Given that estimated latent factor means do not differ markedly between this model and the full structural model, it is assumed that the latent factor score ranges likely do not differ substantially either.

³³ The chi-square statistic, which evaluates the size of the discrepancy between the sample and fitted covariance matrices, is the traditional method for evaluating overall model fit (Hooper, Coughlan, & Mullen, 2008; Hu & Bentler, 1999). Models with good fit should evince insignificant results at or below 0.05. However, there are a number of severe limitations in the use of the chi-square (Hooper et al., 2008). This test assumes multivariate normality and is also extremely sensitive to sample size. Departures from normality or sample sizes above around 200 nearly always lead to rejection of the model even when it is properly specified (McIntosh, 2006; Bentler & Bonnet, 1980). The comparative fit index (CFI) assumes the null/independence model (i.e. that all latent variables are uncorrelated) and compares the sample covariance matrix with this null model. The CFI, unlike some fit indices, accounts for sample size (Hooper et al., 2008). Values of the CFI can range from 0 to 1.0 and Hu and Bentler (1999) suggest that a CFI of at least 0.95 is desirable in order to conclude a good fit between the model and the observed data. The root mean square error of approximation (RMSEA) indicates how well the model would fit the population covariance matrix given unknown but optimally chosen parameters (Hooper et al., 2008). The RMSEA has come to be considered a more informative index than many others in recent years given its sensitivity to the number of parameters estimated in the model (Hooper et al., 2008). The suggested upper-limit cutoff for the RMSEA is 0.06 (Hu & Bentler, 1999).

³⁴ This finding may reflect the potentially nonlinear effect of parent income on college enrollment (see Nuñez & Kim, 2012). In fact, when the full structural model is estimated with parent income collapsed into quartiles, in comparison to students from the lowest income quartile, it is only those students from the highest income quartile for whom parent income has a significant (positive association, $p=.03$) total effect on enrollment. However, the positive influence of parent income on enrollment among students from the highest income quartile is fully mediated by alignment such that the direct effect of income on enrollment among all of the Latino students in this sample is non-significant.

³⁵ In an attempt to address national origin differences among Latino youth, I ran each of the models discussed here with a covariate indicating whether or not the student was of Mexican origin. Approximately 58% of the students in the current sample are of Mexican origin. None of the results were significantly different between Latino students of Mexican origin and those of some other national origin.

The relatively small sample sizes of other Latino sub-groups (e.g. Cuban, Dominican, Puerto Rican, Salvadoran) did not allow for further disaggregation.

³⁶ In recent years, both researchers and the popular media have taken notice of the fact that, since about the 1980s, female college attendance rates have surpassed those of their male peers (Riegle-Crumb, 2010). At first glance, the absence of a female advantage in the full structural model appears to stand in contrast to this widely documented female postsecondary enrollment advantage. However, the absence of a significant positive effect for females in the full model is largely explained by two principal factors, both of which are consistent with previous research that attempts to explain higher levels of college participation among women. First, in the sample that includes all Hispanic and White *ELS* participants who were present in all three data waves, the gender split is almost exactly half male and half female. However, after limiting the research sample to students who expected to complete a BA or above in 12th grade and who had completed a high school diploma or equivalent by one year after expected high school completion, the gender split for the becomes about 60 % female and 40 % male. So one reason for the less marked female edge in enrollment rates has to do with sample selection. This fits with findings from other research demonstrating that both Hispanic and White females are less likely than their male counterparts to drop out of school, and are more likely to have higher educational aspirations and to state that education is an important way in which to get ahead (Bae et al., 2000; Crosnoe et al., 2004; Freeman, 2004; Gándara, 2005; López, 2003; Mead, 2006; NCES, 2001; Saenz & Ponjuan, 2009). Second, and consistent with a substantial literature which documents greater levels of academic performance and academic orientation among girls (see Riegle-Crumb, 2010), including greater levels of college preparedness, there is a female advantage evident in the research sample, yet it shows up not in the results of the full model but in the significantly higher levels of expectation-action alignment observed among the girls in the sample (see Table 2.3). These results are consistent with recent research demonstrating that the initially significantly higher rates of enrollment at both two- and four-year colleges among Hispanic females relative to Hispanic males are reduced to nonsignificance once high school grade point average and course taking patterns are accounted for (Riegle-Crumb, 2010).

³⁷ While the advantages of estimating marginal effects are recognized, the MPlus software does not provide the researcher access to derivatives for individual sample members. Therefore, with the estimation software used in this research, I did not have the option to pursue marginal effects at the sample means of the model measures nor to generate the sample averages of individual marginal effects for predictors in the model. In the future, I hope to explore the possibility of estimating marginal effects while working with latent factors within an SEM framework via an alternative software choice.

³⁸ This is a student with consistent postsecondary expectations and average standardized test scores attending a public school and living with both parents, at least one of whom had completed some college and who together possess mean stocks of various types of parent resources

³⁹ Standardized coefficients for the full structural model are provided in Appendix A2. While the raw probit coefficient represents the amount of change, in standard deviation units, in y for a one unit change in x , a standardized probit coefficient represents the amount of change, in standard deviation units, in y for a one standard deviation unit change in x .

CHAPTER 3

Parent Assets and Aligned Ambitions: Investigating Latina/o College Choice Across Generations

Major changes to federal immigration legislation in 1965 have resulted in the greatest influx of immigrants to the United States since the turn of the nineteenth century, the majority of whom are from Latin America (Passel, 2011). As a result, one of the nation's most pressing domestic policy concerns is the poor educational achievement and attainment of immigrant youth and the children of immigrants (Haskins & Tienda, 2011). More specifically, it is the constrained educational success experienced by a broad segment of the Latino⁴⁰ youth population in the United States, over 62 % of whom are immigrants or the children of immigrants, that constitutes one of the most critical policy issues of our time (Bowen, Chingos, & McPherson, 2009; Haskins & Tienda, 2011).

The dramatic increase in the number of immigrants admitted to the United States has coincided with major changes in the U.S. economy over the past half-century, characterized by the shift to an increasingly knowledge-based economy in which jobs that do not require some amount of postsecondary education have largely disappeared (Crosnoe & Lopez Turley, 2011; Goldin & Katz, 2009; Harrison & Bluestone, 1988). It is this latter trend, rather than immigrant status per se, which appears to be an important driving force behind the increased academic risk and stagnant educational and economic mobility of Latin American immigrants and their descendants. The majority of Latino immigrants consists of unskilled labor and manual workers whose low levels of education confine them to jobs that situate them at the lower end of the income distribution.

Further, it is at this lowest segment of the income distribution where the postsecondary

attainment rates of youth are low across the board, regardless of immigrant status (Baum & Flores, 2011). In other words, it is especially difficult for all impoverished Americans to rise from the lower rungs of the social mobility ladder, and it is on these rungs where disproportionate numbers of U.S. Hispanics are situated. Yet in order for Hispanics to make the ascent toward jobs that can ensure economic and social mobility, improving their levels of educational attainment is of critical importance—more so, perhaps, than ever before in the history of this nation (Baum & Flores, 2011; Harrison & Bluestone, 1988; Haskins & Tienda, 2011).

It is well-documented by now that as U.S. Hispanics—most of whom are immigrants or the children of immigrants—make up a greater share of the population of prospective college enrollees, and despite the increase in their college enrollment rates, they continue to trail all other racial and ethnic groups in the percentage who earn a bachelor's degree (Alon, Domina, & Tienda, 2010; Gándara & Contreras, 2009; Swail, Cabrera, & Lee, 2004).⁴¹ However, the fact that few studies have addressed college choice behavior by immigrant status with a specific focus on the nation's largest and fastest-growing minority group exposes a sizeable gap in the research literature (Hagy & Staniec, 2001; Tienda & Mitchell, 2006). Moreover, we know little about the potential mechanisms that may mediate the role that parent resources, particularly less tangible forms of social resources, play in the college choice process across generations of Hispanic youth (Tienda, 2011). This study addresses these gaps.

In this investigation, I build upon prior work demonstrating that the extent of *alignment* between students' expectations of completing a bachelor's degree and the

actions they take during high school toward achieving this goal plays a critical role in the college choice and enrollment process among Latino youth. Whether the associations between student alignment and student college enrollment might vary across generations of Latino youth merits further consideration and promises to address a critical question regarding educational mobility—namely, whether lower levels of access to and persistence in higher education observed among U.S. Hispanics relative to their non-Hispanic White counterparts represents a "temporary lull" due to an influx of immigrants or instead reflects "stymied mobility" across generations of Hispanic youth (Alon et al., 2010; Tienda, 2011).

The Current Study

While parents' levels of income and education can have important influences on their children's educational outcomes, these are not the only resources at parents' command that can impact the decisions youth make about enrolling in college. The social ties that connect parents to others can also serve as valuable assets, often facilitating or hindering the exchange of other types of resources (Granovetter, 1982). Therefore, when we consider parent resources, relations among parents, their children, and school agents must also be accounted for as "forms" of social capital (McNeal, 1999; 2005).⁴² Yet, until very recently, the influence of various forms of parent social capital in the process of college access and persistence among Latino youth has received little attention (Perna, 2006). This study contributes to this emergent area of research by examining the role played by various types of parent resources, including forms of social capital, during the

Latino college choice process. I focus specifically on similarities and differences within this student population according to immigrant status.

Recent scholarship has demonstrated that, despite assumptions to the contrary, across generations, Latino youth and their parents do indeed hold high educational expectations, (Burciaga, Perez Huber, & Solorzano, 2009; Gasbarra & Johnson, 2008).⁴³ Nonetheless, there has been little examination of the extent to which Hispanic youth are taking critical steps during high school that will help them realize those expectations, and even less attention to whether the extent of *alignment* between students' college-going expectations and actions differs across generations of Hispanic adolescents. The proposed study address this gap by operationalizing alignment as the extent to which the concrete steps taken by Latino youth during high school correspond with their ambitious college goals.

Finally, I bring parent resources and student alignment together by exploring the associations among different types of parent capital, student expectation-action alignment, and the level at which a student enrolls in college using a nationally representative sample of Latino high school students. It may be that the ways in which Hispanic youth go about preparing for college, and the impact that various kinds of parent assets have during that process, differ depending on whether a student is an immigrant, is the child of immigrants, or was born to parents who were also born in the U.S. Therefore, in this investigation I examine whether the extent to which student expectation-action alignment hinders or facilitates the transmission of several types of resources from parent to child during the college choice and enrollment process varies

according to student nativity status among Hispanic youth. To do so, I pursue the several research questions.

Research Questions

Research Question 1. Is variation in students' initial postsecondary enrollment status related to parent resources?

Research Question 2. Is alignment between students' 12th grade college expectations and the actions they have taken in reach of those expectations associated with parent resources as measured during the 10th grade year?

Research Question 3. Do parent resources indirectly influence students' initial postsecondary enrollment *via* alignment?

Research Question 4. Do associations among parent resources, student alignment, and initial postsecondary enrollment vary according to Latino student generation status?

Literature Review

Baum and Flores (2011) suggest that the recent influx of immigrants into the United States has essentially divided newcomers into two highly distinctive groups. Not unlike native-born youth whose parents have no college experience and other students from low-income backgrounds, one segment of the U.S. immigrant population encounters significant obstacles to enrolling and succeeding in college, even when they have high educational expectations. Among this group of immigrants, who come primarily from Latin America, the Caribbean, and some Southeast Asian countries, low levels of human and economic capital resources are often compounded by a lack of information about how to access college opportunities and even stereotypes that marginalize them in

schools (Baum & Flores, 2011; Crosnoe & Lopez Turley, 2011; Portes, Fernandez-Kelly, & Haller, 2009).

In contrast, other immigrants have found the doors to college flung wide open and some among this group even surpass native White youth in their levels of college enrollment and completion (Baum & Flores, 2011). This immigrant group includes many highly skilled professionals, typically from East Asian countries, who on the whole tend to command higher stocks of socioeconomic resources than the aforementioned group (Baum & Flores, 2011; Crosnoe & Lopez Turley, 2011).

The divergent pathways traversed by these two groups in many ways reflects the theoretical perspective of segmented assimilation, first outlined by Alejandro Portes and Min Zhou in 1993, which has been the predominant framework for the study of immigrant youth in recent history (Crosnoe & Lopez Turley, 2011). Segmented assimilation maintains that the pre-migration characteristics of immigrants, including levels of human, economic, and sociocultural resources, combined with the structural contexts into which the group is received in U.S. society will offer upward socioeconomic mobility for some immigrant youth while restricting the mobility of others.

Given that the fundamental issue of the structural context in which Hispanic immigrants and their children are situated is beyond the scope of this study, this research is not intended to evaluate the tenets of any one theoretical approach to immigrant assimilation. Instead, I take a more inductive approach to the ways in which different generations of Latino students may experience the college choice and enrollment

process by exploring the match between their educational expectations and the actions they have taken toward realizing those expectations, as well as the role that expectation-action alignment plays in mediating associations among parent assets and students' college enrollment decisions. Recent research has demonstrated that, regardless of nativity status, Hispanic youth and their parents hold high expectations (Burciaga et al., 2009). However, research has also demonstrated that Latino students and their families face considerable challenges in accessing the college-relevant information that can help youth convert expectations into actions and realized ambitions.

More specifically, in this investigation I expand upon the work of Schneider and colleagues (Kim & Schneider, 2005; Schneider & Stevenson, 1999) and their notion of aligned ambitions. Among first, second, and third-plus generation Hispanic students who expect to complete a bachelor's degree, *alignment* is a latent measure that captures the shared variation among various indicators of the actions students need to take toward realizing their expectations by the time they complete high school. By nesting this construct within a sample of students limited to those who expect to complete a bachelor's degree, alignment reflects the extent to which students' postsecondary expectations and college-preparatory actions match up with one another. These actions have been selected based on the literature describing those steps which serve as necessary and/or influential precursors to enrollment in four-year institutions of higher education (Arbona & Nora, 2007; Berkner & Chavez, 1997; Swail et al., 2005). Lower scores on the latent alignment construct indicate lower levels of alignment, while higher scores reflect closely matched expectations and actions. In other words, the student who has

high expectations but has not taken the relevant and/or requisite actions necessary to fulfill those expectations demonstrates "misaligned ambitions." The data will show that, regardless of nativity status, the extent to which a student becomes aligned before leaving high school appears to exert a strong force on his or her postsecondary trajectory.

Theoretical Framework

Recent research within a sociological framework probes the ways in which sociological constructs of cultural and social capital are related to student college choice (Perna, 2006). As with human, physical, and economic forms of capital, cultural and social capital are resources which can be invested to facilitate upward mobility. Forms of cultural and social capital can also be manipulated to delineate social boundaries where insiders are advantaged in ways that increase productivity while outsiders are disadvantaged (Coleman, 1988; Lamont & Lareau, 1988; Perna, 2006).

Yet Kao and Rutherford (2007) note that many studies relying on social capital theory examine its overall association with educational outcomes without attending to differences across racial, ethnic, and immigrant groups in the availability of social capital. Findings from those few studies that do attend to differences in the availability and convertibility of social capital across different racial and ethnic groups (Orr, 1999; Ream, 2005; Zhou & Kim, 2006) offer evidence that some students, including those from low-income backgrounds and first-generation college-goers, consider a limited set of potential colleges, in part because they are not aware of how they might determine a range of available colleges that would provide a good fit with their needs and qualifications (McDonough, 1997). Other research within this same vein suggests that

some low-income and minority youth look only to their own friendship and family networks for college advice and information. However these networks, while offering valuable encouragement and support, may only offer limited college information (Hearn, 1997; De La Rosa, 2006; Kim & Schneider, 2005; Person & Rosenbaum, 2006).

In their research examining the availability and convertibility of social capital across race and immigrant status, Kao and Rutherford (2007) found that Hispanic adolescents had less access to social capital than students of other racial and ethnic backgrounds across all generational statuses. Also noteworthy in their findings was the fact that minority and immigrant students often experienced returns to their social capital holdings that varied by the form of social capital and the outcome of interest (Bankston & Zhou, 2002; Ream, 2003).

Given the importance of attending to individuals' access to social capital in the study of human capital production—and especially in the context of this research, forms of social capital that have the potential to connect students to "college knowledge" (Conley, 2007)—I employ social capital theory as a frame through which to better understand the intergenerational transmission of resources among different generations of Hispanic students and their parents as these youth prepare to fulfill their postsecondary ambitions.⁴⁴

Methods

Data Source and Participants

This research uses data from the *Educational Longitudinal Study of 2002* (ELS:2002). The ELS dataset includes a nationally representative cohort of 10th graders

in 2002 (see: <http://nces.ed.gov/surveys/els2002/>) and involves multiple respondent populations, including students, parents, teachers, and administrators.⁴⁵ To date, there have been three waves of data collection, including the 2002 base-year interview, the 2004 first follow-up interview, and the 2006 second follow-up interview. Cohort members will be re-interviewed in 2012, eight years after expected high school completion, in order to allow researchers to examine student outcomes such as persistence in higher education and educational attainment.

In this research, I draw from the base-year panel of 2002 10th graders who were also present for the second and third waves of data collection ($N = 13,221$). The sample used in this study includes those students who had obtained a high school diploma or had completed an alternative credential within one year of their expected high school completion and who reported in expecting to complete a BA or advanced degree in the 12th grade ($N = 8,555$).⁴⁶ While students' college aspirations and expectations in the earlier high school years are often predominantly influenced by their parents, by the 12th grade students look more to peers and adults at school as they consider college choice and application (Bell, Rowan-Kenyon, & Perna, 2009; Hossler et al., 1999). By their senior year of high school, students tend to have a more realistic view of their college options and this view has been informed in part through their interactions with peers, counselors, and teachers. Therefore, the level of education students report expecting to complete when they are in the 12th grade likely more accurately reflects where they see themselves headed in terms of their educational attainment.

In order to examine the college choice and enrollment process across student nativity status, the sample is further limited to first ($N = 176$), second ($N = 308$) and third-plus ($N = 354$) generation Hispanic students whose stated educational expectation in their senior year was the completion of a bachelor's degree.⁴⁷ Information about student generation status was missing for 186 of the initial 1,024 Hispanic sample members and these cases were excluded from the analyses, resulting in a total sample of 838 students. The degree of missingness on the observed variables ranged from 0 % to 13 % among students (average missingness <2 %), and from 0 % to 24 % among parents (average missingness <13 %).

Dependent Variable. The key outcome of interest in this investigation is the student's college enrollment status at the time of the second follow-up in 2006.⁴⁸ This outcome was originally coded to indicate whether a student (1) never enrolled, (2) stopped or dropped out of a postsecondary institution, (3) was enrolled in a 1-year program, (4) was enrolled in a 2-year institution, or (5) was enrolled in a 4-year institution at the time of data collection. For the purposes of this research, the first and second categories were combined, as were the third and fourth categories, such that the outcome variable used in the analyses is an ordered categorical measure and reflects whether a student was (1) not enrolled in any postsecondary institution, (2) enrolled in a one- or two-year institution, or (3) enrolled in a four-year institution.⁴⁹ I use enrollment status as the outcome in this research given that this measure represents the ultimate outcome of the college choice process, capturing both application and acceptance.⁵⁰

Background Variables. A number of control covariates that could account for the influence of parent resources on both alignment and postsecondary outcomes are included in the research analyses.⁵¹ A dummy variable indicating whether the student also expected to complete a bachelor's degree in the 10th grade is included given that students who maintain consistent expectations may be more likely to pursue higher education, particularly at a four-year institution (Kao & Tienda, 1998). The omitted category includes students who did not also expect to complete bachelor's degree in 10th grade. The base-year standardized test score composite is included to control for differences in achievement prior to data collection and a dummy variable was also created to control for gender differences, with the omitted category being male. Another dummy variable was created to reflect family structure and the omitted category for this variable is a student who was living with both biological parents during high school. A dummy variable for school control helps account for the fact that whether a student attends a public or private high school may impact his or her college choice process; the omitted category for school control is a private school.

While the sample sizes of each of the three generations of Hispanic students do not allow for further disaggregation by national origin, a dummy variable was created to indicate whether or not the student was of Mexican origin, with the omitted category being some other national origin. Some research has suggested that youth of Mexican origin may be more likely than students of most other Hispanic subgroups to experience constrained opportunities for upward mobility (Lopez & Stanton-Salazar, 2009; Portes, Fernandez-Kelly, & Haller, 2009; Rumbaut, 2008). To at least partially account for

differences in familiarity with English across groups, a final dummy variable indicates whether or not the student reported that their native language, or the first language they learned to speak, was English (omitted category is native Spanish speaker).

Parent Resources. In an attempt to better integrate the various kinds of resources that parents have available, I conceptualize the sociological and economic resources at parents' command as interrelated types of capital that may influence students' transitions to postsecondary education. Information from the base-year data collection about three kinds of parent resources are included in this investigation. Measures of *social* capital represent parents' access to information, *via* social exchange, about college investment decisions. Measures of *economic* and *human* capital reflect the financial and educational resources parents command on behalf of their children.

A careful examination of theory and prior research has informed the selection of indicators for the social capital constructs employed in this research.⁵² The social aspects of resource exchange are multidimensional, complex, and more easily hidden than the exchange of material resources, making the measurement of social capital inherently challenging (Bourdieu, 1986; Ream & Palardy, 2008). Using both theory and prior research as a guide, I attempted to achieve conceptual coherence in the measurement of the social capital constructs by searching the *ELS* dataset for items reflecting the frequency and nature of parents' interactions with others around issues and activities relevant to their child's college choice process. Additionally, through the use of latent factor analysis to measure parental stocks of some forms of social capital in this investigation, I am able to assess how validly and reliably the shared variance among

indicators of each form of social capital captures the hypothetical underlying construct. Latent factor analysis allows the researcher to examine hypothetical constructs using a variety of observable indicators of the constructs which can be directly measured (Raykov & Marcoulides, 2006).⁵³ Ultimately, I developed three latent constructs representing various forms of parent social capital.⁵⁴

- *College-Relevant School Social Capital*: a three-item construct including the frequency with which the parent contacts the school about the student's course selection, about the student's school program for the following year, and about the student's plans after high school.
- *College-Relevant Family Social Capital*: a three-item construct including the frequency with which the parent provides the student with advice about selecting high school courses, about plans for taking college entrance exams, and about applying to college after high school.
- *Intergenerational Closure*: a five-item construct including whether the parent reports knowing the mother and/or the father of the student's closest friend, the number of times a parent of one of the student's friends gave the parent advice about the school's courses or teachers, how often the parent has received a favor from a parent of one of the student's friends, and how often the parent has provided a favor to a parent of one of the student's friends.

Parent economic capital is represented by an indicator of parents' combined income from all sources in 2001. This measure, taken during base-year data collection, was rescaled by NCES as a 13-level continuous variable prior to data release. Findings

from other research have suggested that parent income shares a positive relationship with college-related outcomes such as the number of college applications submitted, enrollment in either a two-year or four-year institution, enrollment in a four-year institution, and the number of years of schooling completed (Ellwood & Kane, 2000; Hofferth, Boisjoly, & Duncan, 1998; Hurtado et al., 1997; Perna, 2000).

Parent human capital is represented by a single indicator of the highest level of education completed by either parent. The original five-level measure was collapsed into a three-level variable indicating whether the highest level of education completed by either parent was no college experience, some college experience, or a bachelor's (or advanced) degree. Some researchers have conceptualized parents' level of education as an indicator of cultural capital, however I view educational attainment as a better reflection of parents' unique skills and developed capabilities (Becker, 1962).

Expectation-Action Alignment. Alignment is a latent measure that captures the shared variation among various indicators of the actions students have taken by the end of their senior year of high school toward realizing their expectations of ultimately completing a bachelor's degree. In other words, alignment reflects the extent to which students' postsecondary expectations and college-preparatory actions match up with one another. The measure of alignment can be seen as reflecting the match between what Morgan (2002) refers to as a student's *prefigurative* commitment, or cognitive commitment to a future course of behavior, toward enrollment in college following high school and his or her *preparatory* commitment, or "the potentially observable course of

everyday behavior that positions an individual to realize his or her prefigurative commitment" (p. 392).⁵⁵

The alignment measure was created, using latent factor analysis, by situating students' level of college preparation and academic performance expectations within their expectations of completing a bachelor's degree. Data pertaining to college preparation and academic performance indicate whether or not students have taken those actions that arguably serve as important prerequisites to fulfilling their expectations by the time they complete high school (Berkner & Chavez, 1997).⁵⁶ Data regarding students' actions are based primarily on student reports, with some cross-verification using institutional data. The college-preparatory action measures indicate whether the student is academically prepared, as reflected by his or her cumulative high school GPA and the highest math course he or she has completed (based on students' high school transcripts), whether the student has taken a college entrance exam, and whether the student has applied to one or more four-year colleges.

Conceptual Framework and Statistical Analyses

I examine the hypothesized influence of parent resources on student college enrollment *via* student expectation-action alignment across first, second, and third-plus generation Hispanic youth using structural equation modeling (SEM) techniques (Mplus statistical software, Version 6.0, Muthén & Muthén, 2010). The structural equation modeling framework allows me to simultaneously test associations among the variables and constructs of interest and to investigate the time-sequenced process modeled here in the conceptual framework (see Figure 1).

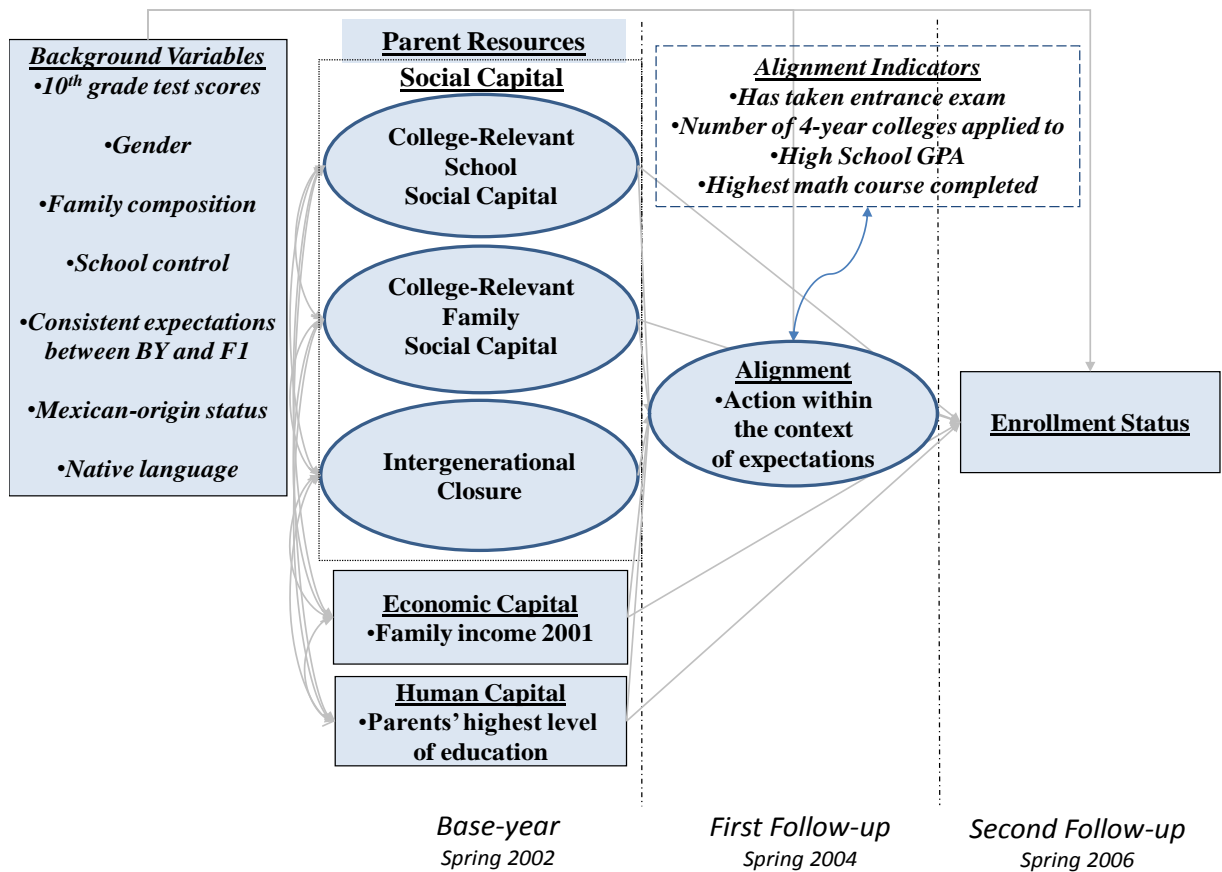


Figure 3.1. Conceptual Framework.⁵⁷

The use of structural equation modeling statistical analysis techniques affords the researcher numerous advantages (Raykov & Marcoulides, 2006). First, SEM can confirm the measurement model in which multiple items are hypothesized to reflect latent constructs while specifically accounting for measurement error.⁵⁸ Additionally, SEM improves upon techniques such as multiple regression through its capacity to estimate both direct and indirect effects while controlling for other aspects of the model. Finally, the use of SEM techniques allows me to capitalize upon the longitudinal nature of the *ELS* data.

Due to the fact that the *ELS* sampling design results in students' being nested in schools, the assumption of the statistical independence of observations is likely violated, which can result in underestimation of standard errors (Ingels et al, 2007; Raudenbush & Bryk, 2002). The Mplus command "complex" was used to adjust the standard errors and model fit indices to account for cluster sampling (Muthén & Muthén, 2010). The "complex" command cues the Mplus software to employ the WLSMV (robust weighted least squares) estimator with categorical data. The WLSMV estimator was employed in these analyses given that almost all of the observed variables used in this research, including the outcome, are either binary or ordered categorical in nature. Like the MLR (robust maximum likelihood) estimator, the WLSMV estimator provides parameter estimates with standard errors and a chi-square test statistic (when applicable) that are robust to non-normality and non-independence of observations (Muthén & Muthén, 2010).⁵⁹ In addition, analytic weights were utilized to compensate for nonrandom sampling techniques and unequal selection probabilities and to allow for the extrapolation of the results to the represented target population.⁶⁰

This research employs ordered probit regression given that the outcome is an ordered categorical variable with three levels. The probit link is used with the WLSMV estimator in the Mplus software.⁶¹ The probit regression model is typically presented in terms of the conditional probability of y given x . In the context of this research, the conditional probability of being enrolled in a 4-year institution (category 3 on the outcome variable) for student i can be represented by the following statistical model,

$$\text{Prob}(y = 3 \text{ (4-year enrollment)} \mid \boldsymbol{\eta}_i, \mathbf{x}_i) = 1 - \Phi \left[\frac{\tau_2 + \boldsymbol{\lambda}_y \boldsymbol{\eta}_i + \boldsymbol{\kappa}_y \mathbf{x}_i}{\sqrt{\theta_y}} \right]$$

where $\boldsymbol{\eta}$ is a vector of latent factor means for individual i with the observed outcome variable y and \mathbf{x} is a vector of observed covariates for individual i . The Cumulative Distribution Function of the standard normal distribution is represented by Φ , and τ defines a threshold ($-\tau = \alpha$) for the observed latent response variable y^* that underlies the observed y such that that $y = 3$ is observed when y^* exceeds τ_2 , the threshold separating the $y = 2$ from $y = 3$. The vector of probit regression coefficients for the regression of y on the latent factors for individual i is represented by $\boldsymbol{\lambda}$ and the vector of probit regression coefficients for the regression of y on the observed covariates is represented by $\boldsymbol{\kappa}$. Finally, θ is the residual variance of y .

Results

The results are presented in two main sections. First, I describe the average characteristics of the sample as reflected by the variables and constructs of interest in this investigation.⁶² Second, I discuss associations among the focal variables and constructs by examining whether student alignment mediates the associations between parent resources and student college enrollment behavior across immigrant generations of Latino youth.

Descriptive Findings

Among Hispanic students in the *ELS:2002* dataset who expected in their senior year that they would complete a bachelor's degree, it is clear that the vast majority of these students ($\geq 80\%$) had similarly high expectations two years earlier when they were in the 10th grade (see Table 3.1). With respect to prior academic preparation, while third-

plus generation students have significantly higher standardized test scores than their first-generation counterparts, in terms of practical significance the difference is just over 3.5 points. The proportion of students attending a private (including Catholic) school increases across generations, with third-plus generation students being significantly more likely than immigrant students to attend a private school. The average immigrant student was not enrolled in any postsecondary institution in 2006, while the average second or third-plus generation Hispanic student was enrolled in a one- or two-year institution.

A majority (58 %) of the students in the sample are female and most live with both parents in the same household, although second-generation Hispanic students are more likely than their immigrant and third-plus generation peers to live with both parents. Depending on generation status, between 59 % and 65 % of the students in the sample are of Mexican origin, which mirrors the representation of Mexican-origin individuals in the U.S. Hispanic population. Students' reported first language varies markedly depending on generation status such that each successive generation is significantly more likely than the previous generation to say that English was their first language.

In examining the average levels of college-relevant school social capital available to parents of the Hispanic students studied here, it appears that immigrant parents of immigrant youth are especially unlikely to contact school personnel about issues relevant to their child's educational prospects. A gradual upward trend across generation status is also observed with parent levels of both college-relevant family social capital and intergenerational closure, although there are no significant differences in mean levels of parents' stocks of social capital after adjusting for other measures in the model.⁶³ These

trends suggests the possibility that with more time in the United States, parents of Hispanic youth may experience at least small increases in their access to some forms of social capital.

Parents' highest education level also increases across generation status, with parents of third-generation students more likely than parents of immigrant and second-generation youth to have completed some amount of college. There are also significant differences in parent income across all student generation cohorts. The average income of immigrant parents of immigrant youth is about \$21,000, which is significantly less than the approximately \$27,000, on average, earned by parents of second-generation youth. With an average income of about \$33,500, native-born parents have a higher level of economic capital than other immigrant parents.

While second generation students evidenced slightly higher average levels of expectation-action alignment than either their first or third-plus generation counterparts, the three generation cohorts demonstrated similar levels of alignment after accounting for demographic characteristics and parent resources. Analyses indicated that, across generation cohorts, prior academic achievement and attending a private school had a significant impact on alignment levels. In addition, second-generation Mexican-origin youth had markedly lower alignment levels, while third-plus generation youth who maintained consistent bachelor's degree expectations and third-plus generation females also had substantially higher alignment levels (see Appendix Table A3.6).

Table 3.1. *Descriptive Statistics on Primary Study Measures*

	First Gen Latino Student	Second Gen Latino Student	Third Gen Latino Student	Range
	M(SD)	M(SD)	M(SD)	
<u>Parent Resources</u>				
<i>Social Capital</i>				
College-Relevant School Social Capital ^a	-0.89(0.96)	0.11(0.47)	0.33(0.37)	-1.14 - 2.67
<i>How often parent contacts school about academic program**¹³</i>	1.18(0.57)	1.31(0.55)	1.49(0.64)	1(never) - 4(5+ times)
<i>course selection</i>	1.15(0.47)	1.23(0.48)	1.25(0.47)	1(never) - 4(5+ times)
<i>plans after high school**¹³</i>	1.21 (0.58)	1.25(0.51)	1.31(0.51)	1(never) - 4(5+ times)
College-Relevant Family Social Capital ^a	0.84(0.92)	1.48(2.43)	1.56(1.57)	-1.28 - 2.28
<i>How often parent provides advice about course selection</i>	2.35(0.73)	2.27(0.70)	2.46(0.63)	1(never) - 3(often)
<i>taking college entrance exams</i>	2.04(0.85)	2.15(0.79)	2.20(0.76)	1(never) - 3(often)
<i>applying to college</i>	2.12(0.83)	2.18(0.83)	2.20(0.77)	1(never) - 3(often)
Intergenerational Closure ^a	0.33(0.82)	0.54(0.58)	0.79(0.48)	-0.80 - 2.23
<i>Knows mother of child's closest friend</i>	0.71(0.46)	0.79(0.41)	0.81(0.39)	0(no) - 1(yes)
<i>Knows father of child's closest friend</i>	0.59(0.49)	0.58(0.49)	0.55(0.50)	0(no) - 1(yes)
<i>How often parent of child's friend gives advice about teachers/courses at school**¹³</i>	1.22(0.55)	1.30(0.64)	1.41(0.73)	1(never) - 4(5+ times)
<i>How often parent of child's friend provides a favor to parent*¹³</i>	1.83(1.11)	2.07(1.14)	2.16(1.14)	1(never) - 4(5+ times)
<i>How often parent provides favor to parent of child's friend**¹³</i>	1.92(1.13)	2..13(1.13)	2.33(1.08)	1(never) - 4(5+ times)
<i>Economic Capital</i>				
Income** ^{12, 13; *23}	7.18(2.46)	8.34(2.32)	8.84(2.29)	1-13(no income)- 13(\$200,000+) ⁶⁴
<i>Human Capital</i>				
Education** ^{13; *23}	1.74(0.78)	1.84(0.83)	2.01(0.77)	1(no college)- 3 (BA or advanced)
<u>Student Alignment</u>				
Expectation-Action Alignment ^a	2.50(0.86)	2.69(0.62)	2.45(0.51)	1.23 - 5.36
<i>High school GPA</i>	3.90(1.43)	4.18(1.33)	4.09(1.33)	0(0.00-1.00) - 6(3.51-4.00)
<i>Highest math course completed**¹²</i>	2.05(0.76)	2.34(0.72)	2.24(0.76)	1(< Alg II) - 3(> Alg II)
<i>Has take a college entrance exam*^{12,13}</i>	0.57(0.50)	0.69(0.46)	0.73(0.45)	0(no) - 1(yes)
<i>Number of four-year institutions applied to**^{13; *23}</i>	1.12(1.18)	1.49(1.20)	1.46(1.20)	0(none) - 3(2+)
<u>College Enrollment</u>				
Level of enrollment in 2006** ¹²	1.90(0.83)	2.13(0.85)	2.06(0.85)	1(not enrolled)- 3(four-year enrolled)

<u>Background Covariates</u>				
Consistent Expectations	0.82(0.39)	0.83(0.37)	0.80(0.40)	0(no) - 1(yes)
Test scores** ¹³	46.92(8.99)	48.97(8.61)	50.54(7.95)	20.91-81.04 21.50-75.12
Gender	1.58(0.49)	1.60(0.49)	1.55(0.50)	1(male) - 2(female)
Family composition ** ^{12, 23}	0.43(0.49)	0.24(0.46)	0.43(0.50)	0(both parents) - 1(other)
School control** ¹³	0.12(0.32)	0.24(0.42)	0.29 (0.46)	0(public) - 1(private)
Mexican origin	0.59(0.49)	0.65(0.48)	0.62(0.48)	0(no) - 1(yes)
Native English speaker** ^{12, 13, 23}	0.10(0.30)	0.44(0.50)	0.85(0.36)	0(no) - 1(yes)

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006. Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Note: First Generation Latino Sample N = 176; Second Generation Latino Sample N = 308; Third-plus Generation Latino Sample N = 354.

^a Model-estimated latent factor means, adjusted for background covariates.

^b Latent factor ranges reflect the ranges of model-estimated individual latent factor scores for each latent construct in the model.⁶⁵

**Mean differences significant at $p \leq .01$ ⁶⁶ (Superscript indicates between which generations the difference was significant).

* Mean differences significant at $p \leq .05$ (Superscript indicates between which generations the difference was significant).

Mediated Effects

Addressing the research questions stipulated earlier, I examined whether there are differences across student immigrant generations in the associations among parent resources, student alignment, and college enrollment. I discuss the results by presenting the direct, indirect, and total effects exerted by parent resources on college enrollment via student alignment.⁶⁷

In order to explore whether the alignment between students' postsecondary expectations and actions during high school mediates the impact of parent resources on postsecondary enrollment, I used the four-step process outlined by Baron and Kenny (1986) and others (e.g. Kenny, Kashy, & Bolger, 1998; Mackinnon & Fairchild, 2009; Mackinnon, Lockwood, Hoffman, West, & Sheets, 2002). First, variation in levels of parent resources should share a significant association with variation in the outcome, here

college enrollment. The first step, which does not account for student alignment, reflects the *total* effect of parent resources on enrollment. Second, variation in levels of parent resources must significantly account for variations in alignment. Third, variations in alignment must significantly account for variations in enrollment, controlling for parent resources. Together, the second and third steps constitute the *indirect* effect of parent resources on enrollment *via* alignment. Last, when the impact of parent resources on alignment and the impact of alignment on enrollment are accounted for, any previously significant associations between parent resources and enrollment must be reduced—in the instance of full mediation to insignificance (Baron & Kenny, 1986; Little, Card, Bovaird, Preacher, & Crandall, 2007). This last step accounts for the *direct* effect of parent resources on enrollment after accounting for alignment. According to this framework, the presence of mediation requires that at least the second and third of the four criteria listed above be fulfilled.⁶⁸ In other words, in order to conclude that partial or full mediation is occurring in the present study, there must be evidence that a particular type of parent resource has a significant *indirect* effect on college enrollment.

The data presented here are derived from the results of the full structural mediation models for each group. As expected, results from the full structural model (see Appendix Table A3.7) indicated that variation in student expectation-action alignment was strongly associated with variation in college enrollment. However, a strong relationship between each type and form of parent resource and alignment must also be present, such that the given resource exerts a significant indirect effect on enrollment through alignment, in order to satisfy the criteria outlined above.

Among first-generation Hispanic students, the results presented in Table 3.2 demonstrate that none of the parent resources included in the investigation had a strong indirect effect on enrollment, suggesting that alignment does not serve to mediate the associations among parent resources and student college enrollment for this group. However, the *total* effects of both college-relevant school social capital and intergenerational closure ($p \leq .05$) and a parent having obtained a bachelor's degree ($p \leq .01$) did reach statistical significance. These strong total effects appear to be driven by the direct associations between these parent resources and enrollment rather than an indirect influence through alignment. The negative influence of college-relevant school social capital on enrollment was an unexpected finding. However, just as it is possible that institutional agents can potentially be sources of negative social capital among Hispanic youth engaged in postsecondary planning (Stanton-Salazar, 1997; Stanton-Salazar & Dornbusch, 1995), perhaps this may also be true in some instances for their *parents*. This is a finding that merits further investigation.

Among second generation Latino youth, what seems striking, particularly given research that has documented a second generation advantage (Kisinitz et al., 2008), is the fact that the social, economic, and human capital resources possessed by their parents do not appear to be strongly related either to alignment or to enrollment. While not statistically significant, the total effects of college-relevant school social capital and the direct effect of college-relevant family social capital on college enrollment seem to exert the strongest influences among second-generation youth. Thus, while there is evidence of a second generation advantage among Hispanic students in this sample as seen in their

higher levels of both alignment and enrollment relative to the other two generation groups, it would seem that there are critical factors beyond the parent resources measured here that help to promote these outcomes. This finding also merits future inquiry.

Finally, the results for third-plus generation Latino youth (Table 3.4) provide evidence that alignment mediates some types of parent resources for this group. In the case of college-relevant school social capital, the significant indirect effect ($p \leq .01$) is strong enough to overcome the negative direct effect that this form of social capital has on college enrollment. These contrasting effects could indicate, for example, that while parents receive information from institutional agents about the importance of their child taking steps such as taking entrance exams and maintaining a good grade point average, Hispanic parents and/or students may also be advised by school personnel that beginning the pursuit of a bachelor's degree at a two-year college is a sensible path. In their ethnographic investigation of the college counseling activities of counselors spread across 14 high schools located in three Southern California counties and serving predominantly underrepresented minority student populations, McDonough and Calderone (2006) found that almost all of the counselors they interviewed tended to promote two-year colleges as the only affordable option for their students who were from low-income backgrounds. Finally, the results for third-generation youth also demonstrate that alignment partially mediates the influence of a parent holding a four-year degree on college enrollment.

Table 3.2. *Decomposition of the Total Effect of Parent Resources on College Enrollment among First Generation Latino Students*

	Direct Effect			Indirect Effect through Alignment			Total Effect		
	<i>b</i>	SE	<i>t</i>	<i>b</i>	SE	<i>t</i>	<i>b</i>	SE	<i>t</i>
<u>Parent Resources</u>									
<i>Social Capital</i>									
College-Relevant									
School Social Capital	-0.19	0.12	-1.59	-0.09	0.10	-0.93	-0.29	0.14	-1.98
College-Relevant									
Family Social Capital	0.25	0.14	1.80	0.02	0.10	0.16	0.27	0.16	1.70
Intergenerational closure	0.30	0.17	1.78	0.09	0.09	0.96	0.39	0.16	2.40
<i>Economic Capital</i>									
Income	-0.06	0.06	-0.93	0.04	0.05	0.71	-0.02	0.05	-0.40
<i>Human Capital</i>									
Education: BA or above	0.39	0.30	1.29	0.38	0.35	1.08	0.77	0.26	2.93

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006. Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Note: N = 176; Probit regression parameter coefficients differ slightly from those provided in Table 5 given that model results for the decomposition of effects were requested with bootstrapped standard errors.

Table 3.3. *Decomposition of the Total Effect of Parent Resources on College Enrollment among Second Generation Latino Students*

	Direct Effect			Indirect Effect through Alignment			Total Effect		
	<i>b</i>	SE	<i>t</i>	<i>b</i>	SE	<i>t</i>	<i>b</i>	SE	<i>t</i>
<u>Parent Resources</u>									
<i>Social Capital</i>									
College-Relevant									
School Social Capital	0.08	0.13	0.58	0.13	0.11	1.22	0.21	0.13	1.60
College-Relevant									
Family Social Capital	-0.20	0.12	-1.63	0.05	0.09	0.50	-0.15	0.15	-1.00
Intergenerational closure	-0.08	0.12	-0.69	0.09	0.10	0.88	0.01	0.14	0.07
<i>Economic Capital</i>									
Income	0.02	0.03	0.54	0.03	0.03	0.83	0.04	0.03	1.23
<i>Human Capital</i>									
Education: BA or above	0.23	0.21	1.10	-0.22	0.19	-1.14	0.01	0.22	0.04

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006. Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Note: N = 308; Probit regression parameter coefficients differ slightly from those provided in Table 5 given that model results for the decomposition of effects were requested with bootstrapped standard errors.

Table 3.4. *Decomposition of the Total Effect of Parent Resources on College Enrollment among Third-Plus Generation Latino Students*

	Direct Effect			Indirect Effect through Alignment			Total Effect		
	<i>b</i>	SE	<i>t</i>	<i>b</i>	SE	<i>t</i>	<i>b</i>	SE	<i>t</i>
<u>Parent Resources</u>									
<i>Social Capital</i>									
College-Relevant									
School Social Capital	-0.14	0.08	-1.72	0.20	0.08	2.49	0.07	0.09	0.78
College-Relevant									
Family Social Capital	-0.05	0.08	-0.60	0.07	0.06	1.09	0.02	0.09	0.26
Intergenerational closure	0.01	0.17	0.04	0.09	0.12	0.78	0.10	0.19	0.53
<i>Economic Capital</i>									
Income	0.10	0.05	2.08	-0.03	0.04	-0.97	0.06	0.04	1.48
<i>Human Capital</i>									
Education: BA or above	-0.07	0.21	-0.33	0.36	0.17	2.12	0.29	0.21	1.39

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006. Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Note: N = 354; Probit regression parameter coefficients differ slightly from those provided in Table 5; this results from the fact that model results for the decomposition of effects were requested with bootstrapped standard errors.

Conditional Probabilities of Enrollment

While the results presented above provide evidence regarding the presence of mediation, because probit coefficients cannot be interpreted in the same manner as linear regression coefficients, it is difficult to fully assess the magnitude of the influences that parent resources and student alignment may have on college enrollment behavior.⁶⁹ Therefore, conditional probabilities were generated for each generation cohort using average (or modal, for dichotomous predictors) values of all model predictors along with their coefficients.⁷⁰

The conditional probabilities for each level of the outcome measure for a student with average sample characteristics is provided in the baseline model for each generation cohort in Table 3.5. Among all three generation cohorts, this is a student with consistent

postsecondary expectations and average standardized test scores for their generation cohort who attends a public school and lives with both parents. In all three groups, the probabilities reflect a student whose parents possess cohort average stocks of social, economic and human capital. While the average level of parent human capital was no college experience among first and second generation groups, the parents of the average third-plus generation student had some college experience. Further, while the average student in the first and second generation cohorts indicated that their first language was Spanish, among third-plus generation students, the majority indicated that their first language was English. These differences in parent education and student language background turn out to be consequential in terms of enrollment probabilities.

In the subsequent rows of Table 3.5, probabilities are sequentially presented based on an increase of one standard deviation in each of the focal model predictors (or a change in category on a dummy predictor) while holding all other model measures constant. What is readily apparent in examining a student's probability of enrolling in a four-year college or university is that the level of expectation-action alignment has a very powerful influence. To wit, across generations of Hispanic youth, a standard deviation increase in the level of alignment corresponds to a 43 to 54 percentage point increase in a student's probability of four-year enrollment, all else being equal. Consistent with the results discussed above, the extent to which the various kinds of parent resources examined here change a student's probability of enrolling (or not enrolling) at a particular level vary in important ways across generation cohorts, although parent resources are

generally less influential than the extent to which student take actions in line with their postsecondary goals. However, there are some exceptions worth mentioning.

As predicted by the strong negative influence of college-relevant school social capital on enrollment among immigrant youth, increasing this stock of parent social capital by one standard deviation actually increases the probability that the student will not be enrolled in any form of postsecondary education while decreasing by nine percentage points the probability that a Latino immigrant student will be enrolled in a four-year college. On the other hand, the strong effect of intergenerational closure among first generation youth has just the opposite effect, decreasing the probability both that the student will not be enrolled or that he or she will be enrolled in a one- or two-year institution while raising by 13 percentage points the probability that the student will be enrolled in a four-year institution.

The fact that none of the parents resources investigated here had a particularly strong influence on enrollment among second-generation youth is evident in the fact that predicted probabilities vary little within this group regardless of which parent resource is increased. However, the negative influence of college-relevant family social capital and the positive influence of a parent having a bachelor's degree that were observed after accounting for alignment among this group do lead to moderate changes in second generations students' enrollment probabilities.

Among third-plus generation students, the finding that higher stocks of parent economic capital provide an enrollment benefit after accounting for alignment is illustrated by the fact that an increase in the level of parent income leads to a noticeable

drop in the probability that the student will not be enrolled while raising the probability that he or she will be enrolled in a four-year college.

Table 3.5. Predicted Probabilities of College Enrollment from Probit Regression Model

	<u>First Generation</u>			<u>Second Generation</u>			<u>Third Generation</u>		
	Not Enrolled	Enrolled, 1- or 2-year	Enrolled, 4-year	Not enrolled	Enrolled, 1- or 2-year	Enrolled, 4-year	Not enrolled	Enrolled, 1- or 2-year	Enrolled, 4-year
Baseline Model	.27	.55	.18	.17	.39	.44	.36	.42	.22
One standard deviation above the mean level of alignment	.01	.26	.72	.01	.12	.87	.05	.25	.70
One standard deviation below the mean level of alignment	.81	.18	.01	.62	.30	.08	.82	.16	.02
One standard deviation increase in parents' stocks of college-relevant school social capital	.39	.51	.11	.14	.38	.48	.42	.40	.18
One standard deviation increase in parents' stocks of college-relevant family social capital	.16	.54	.31	.23	.42	.35	.39	.41	.20
One standard deviation increase in parents' stocks of intergenerational closure around school	.15	.54	.31	.18	.40	.42	.33	.42	.25
One standard deviation increase in parent income	.35	.52	.13	.15	.38	.47	.25	.42	.33
At least one parent with a bachelor's or advanced degree	.10	.49	.41	.11	.34	.55	.32	.42	.25

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006. Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.
Note: First Generation Latino Sample N = 176; Second Generation Latino Sample N = 308; Third-plus Generation Latino Sample N = 354.

Discussion

Over the past decade, the overwhelming majority of research published in influential journals that addresses the educational experiences of immigrant youth has focused on secondary schooling experiences and outcomes, in large part because success

at this level has become a minimum requirement for realizing intergenerational socioeconomic mobility (Crosnoe & Lopez Turley, 2011).

The results from some studies suggest that the educational outcomes of at least some immigrant groups improve across generations (Bean & Tienda, 1987; Hagy & Staniec, 2001; Hirschman, 1996; Matute-Bianchi, 1986; Smith, 2003). Yet other research suggests that, given certain individual and contextual circumstances, some immigrant groups experience downward mobility. The general pattern observed in this second set of studies, often conducted within the framework of segmented assimilation theory, finds second-generation students outperforming their first-generation (immigrant) counterparts. However, this trajectory of upward mobility between first- and second-generation immigrant students does not continue after the second generation, as evidenced by stalled academic achievement, educational attainment, and earnings between the second and third generations (Kao & Tienda, 1995; Portes & Rumbaut, 2001; Wojtkiewicz & Donato, 1995).

While the intent of this research was not to evaluate the tenets of a specific theoretical approach to immigrant assimilation and mobility, some aspects of both the more traditional straight-line assimilation perspective as well as the more recently formulated segmented assimilation theory find support in the results encountered here.

Of particular interest in this study was the extent to which first, second, and third-plus generation Hispanic students demonstrated alignment between their expectations of completing a bachelor's degree and the actions they had taken during high school in line with those expectations. Across generation status, students demonstrated fairly similar

levels of expectation-action alignment, although second generation students did demonstrate higher alignment levels. It is somewhat surprising that the level of alignment did not differ more markedly across generation status, as we might expect that with more time spent living in the United States, students and their parents become more familiar with the American education system and the requirements for college enrollment. On the other hand, and more consistent with the straight-line assimilation perspective, an upward trend, albeit often gradual, was demonstrated across many of the observed measures included in this research. This was true with respect to both student characteristics and parent resources.

Furthermore, the results encountered here with respect to the availability and utility of parent resources in the college choice and enrollment process across student immigrant status groups reflect both the theoretical and empirical challenges inherent in attempts to understand and explain the experiences of immigrants and their children. The influences exerted by parents' social, economic, and human capital resources on both alignment and enrollment varied in both direction and significance across generation groups. Further, and contrary to the relatively strong influence exerted by at least some kinds of parent resources among immigrant and third-plus generation youth, among second generation Hispanic students none of the parent assets investigated had a marked impact on either alignment or enrollment.

The results of this investigation provide some support for the so-called "immigrant paradox," or the pattern characterized by immigrant success and subsequent generational decline following the second generation, insofar as both the observed and

predicted levels of alignment and enrollment were highest among second generation Hispanic youth. However, at the same time, a paradox of a different sort was observed in the finding that the effects of various types and forms of parent capital on alignment and enrollment were nonetheless stronger among first and third-plus generation Hispanic students.

Limitations and Directions for Future Research

The findings presented here offer a valuable contribution to the small but growing body of research which seeks to better understand how Latino youth and their families navigate the college choice process. Specifically, I attempt to unpack the "black box" of ethnicity (Zhou & Kim, 2006) by examining whether the associations among various types of parent resources, the extent to which students' college-going actions align with their bachelor's degree expectations, and college enrollment decisions vary *within* this ambitious population of Hispanic youth according to immigrant generation status. Still, this study, like any, is not without limitations.

One important limitation of the generational analyses presented in this research is that I am not comparing the college enrollment process of Latino immigrants with those of their own children or grandchildren. Instead, I compare the college enrollment process among a sample of Latino youth in 2002 that includes youth who were immigrants, students who were the children of immigrants, and students who were the grandchildren of immigrants. This research can offer some insights into the intergenerational transmission of parent resources during the college choice and enrollment process among

a particular immigrant group over time, but at the same time, there are numerous factors which may help explain the patterns observed that I do not explore.

For example, different cohorts of immigrants may vary in the skills, education levels, and other forms of human and social capital they bring with them, and such compositional differences are not explored in this research. In addition to the composition of different immigrant cohorts, each cohort enters during a distinct period of time across which economic and social conditions may vary in ways that influence their assimilatory and mobility prospects. In addition, readers should be mindful of the fact that the "third-plus" generation of Hispanic immigrants represents a very diverse group. Using data from a nationally representative sample of 2,012 U.S. Hispanics ages 16 or older in 2009, researchers at the Pew Hispanic Center (2009) estimated that about 40% of those in the third and higher generation were the grandchildren of immigrants from Latin America while the rest had family histories in the U.S. dating much further back in time.

I also remind the reader that this research excludes students who did not expect to complete a bachelor's degree in their senior year and/or who did not complete high school. These exclusions were made given that individuals who do not aspire to a BA degree may attend two-year schools for a variety of reasons but are generally not interested in attending four-year schools (O'Connor et al., 2009). However, the aforementioned exclusions mean that the sample included in this research is a more selective group relative to the population of all Hispanic students who were sophomores in U.S. schools in 2002. Any conclusions drawn from this research may not be applicable to this broader population.

It also cannot be ruled out that the relatively small sizes of the immigrant generation cohorts resulted in a lack of power to reject the null hypothesis in cases where it should have been rejected. There may be greater differences between first, second, and third-plus generations of Hispanic students in the process of college choice and enrollment than were evidenced in this research.

Finally, as Lin (2001) observes, individual action cannot be fully understood except in relation to the social context in which it occurs. While this study has the advantage of allowing for a close examination of the ways in which certain characteristics of parents and students impact the process of college choice, it was not designed to also investigate the influence of the school, community, state, and national contexts in which students are embedded. Other research on immigrant experiences and outcomes from a variety of theoretical perspectives has asserted that the characteristics of the contexts into which immigrants are received can powerfully impact, both positively and negatively, the extent to which immigrants and their descendants will experience upward mobility. Therefore, consideration of the potential influences that characteristics of the school and community contexts may have relative to the process investigated in this investigation will be an important next step in this line of research.

Concluding Remarks

In this research, the alignment between students' educational expectations and actions had a powerful impact on college enrollment, suggesting that efforts which promote higher levels of alignment could serve as a lever through which to break down some of the barriers encountered by immigrants, their children, and their grandchildren as

they pursue educational and social mobility in the United States. Yet for the importance of alignment to work to the advantage of all Latino students, rather than serving as an additional barrier to a college degree, researchers will need to continue investigating how Hispanic students, and their parents, can be supported in developing more complete understandings of the steps students must take during high school in order increase the likelihood that they will realize their ambitions.

As generations of Hispanic youth navigate the college choice and enrollment process, the structural constraints that they come up against, as well as the social, cultural, and economic resources they and their parents possess, produce patterns that, while at times unexpected, often unfold in at least some predictable ways (Portes and Zhou, 1993). The fact that, across generations, Hispanic students have lost ground in bachelor's degree attainment to their non-Latino White peers has unfortunately become one of these all too predictable patterns (Alon et al., 2010). The capacity of researchers, practitioners, policymakers, and indeed the larger American public to engage in efforts that can reverse this trend will have great bearing not only on the economic and social mobility of Hispanic individuals but also on the economic and social well-being of this nation well into the future.

⁴⁰ On the west coast the meta-categorical term Latina/o is often preferred to Hispanic (Bean and Tienda, 1987). Yet when U.S. Latinos/Hispanics are asked to choose between the panethnic terms, Hispanic is preferred over Latino by a 3 to 1 margin (National Research Council, 2006). Here, both terms are used interchangeably, but it is recognized that neither of these labels comes close to capturing the vast ethnic and cultural heritage of the populations of interest. I use Latino/os to refer to both male and females unless otherwise specified.

⁴¹ Hispanics, already account for half the growth in the U.S. population since 2000, and more than half of the college-age population growth in the coming decade is expected to be made up of Hispanic students (Nuñez & Kim, 2011).

⁴² In this investigation, social capital refers to individuals' capacity to gain access to scarce resources—including economic capital and employment or educational opportunities (Granovetter, 1982), as well as knowledge and information (Becker, 1964)—by virtue of their membership in groups and participation in broader structures of society (Bourdieu, 1986; Coleman, 1988). This definition attempts to capture elements of both Coleman's as well as Bourdieu's work on social capital. Coleman views parents' roles as predominant in promoting their children's status attainment, while Bourdieu's approach describes the restrictions imposed by structural barriers (Dika and Singh, 2002).

⁴³ The expectation parents of Latino youth have for their child's educational attainment do not appear to vary across generations in this sample. Among parents of immigrant students 95 % expect that their son or daughter will obtain a bachelor's or advanced degree, while among parents of second- and third-generation Latino youth the figures are 96 % and 94 % respectively. This may be due to the fact that my sample is limited to students who expected to complete a bachelor's degree or higher in their senior year—students' high expectations may influence parents' high expectations (and vice versa). Still, when I examine Latino parents' expectations across the entire *ELS* sample, while the percentage of parents who expect their child to complete a bachelor's or advanced degree is not as high, the percentages do not vary substantially across student generation status. Among parents of both immigrant and second-generation Latino students, 89 percent expect this level of educational attainment, while among parents of third-generation students, this figure drops slightly to 84 percent.

⁴⁴ More specifically, Coleman's functionalist interpretation of social capital is most frequently deployed in the educational literature (Dika & Singh, 2002). Coleman's work has typically been used to study the positive effects of social capital on school-related outcomes—most often achievement and attainment (Dika & Singh, 2002; Ream & Palardy, 2008). Coleman focuses on the educationally utile role social capital plays in communicating norms, trust, authority and social control within social networks (Perna, 2006). There is by now an extensive literature, which draws mainly from Coleman, on the implications of parent social capital, especially in the form of parent involvement, for students' educational advancement (Paulson, 1994; Sui-Chu Ho & Willms, 1996; Kao & Tienda, 1998). Bourdieu, in contrast to Coleman, attends to social realities and the ways in which some individuals are advantaged because of their membership in particular groups (Portes, 1998). Bourdieu (1986) proposes that the volume and quality of social capital possessed by a person depends on both the size of the network of connections he or she can mobilize as well as on the volume of capital—economic, human, cultural, and symbolic—possessed by each connection or social tie (Dika & Singh, 2002). Thus, Bourdieu's social capital comprises two elements—the social relationship allowing for access to resources, and also the quantity and quality of those resources (Portes, 1998). Bourdieu views social capital as a mechanism of social stratification; in other words, social capital is used by the dominant class to maintain its dominant position (Lin, 2001; Stanton-Salazar, 1997). That social capital is less tangible and more easily “hidden” than, say, economic or human forms of capital augments its capacity to serve as a mechanism of stratification (Ream, 2005).

⁴⁵ In the first stage of the sampling strategy, schools were stratified by region, urbanicity, and control (public, Catholic, or other private). Each school had a probability of selection into the school sample proportionate to its size. The final sample of schools consisted of 752 responding schools with a 10th grade, including 580 public schools and 172 private schools (including Catholic schools). During the second stage, students were selected into the sample using a clustering technique whereby a random sample of 24-26 students were selected from each school (as opposed to classrooms). Asian and Pacific Islander students were over-sampled. Of about 17,600 eligible selected sophomores, about 15,400 completed a base-year questionnaire, resulting in a weighted response rate of 87 %. The first follow-up interview took place in the spring of 2004, when most sample members were seniors in high school. The first follow-up included 16,500 students and 15,000 participated, for a weighted response rate of 89 %. The second follow-up interview took place in 2006, approximately 2 years after most sample members had graduated from high school. Of the 15,900 eligible sample members, 14,200 participated in the second follow-up, leading to a weighted response rate of 88 %. This study uses student survey data from the base-year, first follow-up and second follow-up, as well as parent survey data from the base-year. The weighted response rate for the parent survey was 87.5 %.

⁴⁶ Including students who expect to complete some level of postsecondary education less than a bachelor's degree could muddy the results of the analysis, given that not all students who enroll in a two-year college want or expect to complete a bachelor's degree.

⁴⁷ The student generation status variable was created using three *ELS:2002* variables indicating the country of birth (U.S. or non-U.S.) for the student's mother (BYP17) and father (BYP20), as well as for the student (BYP23). First-generation refers to foreign-born students of foreign born parents, second-generation includes native-born students with at least one foreign-born parent, and third-generation captures students born in the United States whose parents were also born in the United States.

⁴⁸ While I considered using the sector of the first institution attended after high school as the outcome, this variable did not allow me to include those students who never enrolled. As Alon (2009) notes, not including the range of postsecondary destinations available to students can skew evaluations of equality in educational opportunity given that low-income and minority youth are more likely than other students to discontinue their education upon leaving high school. Further, the bivariate correlation in the *ELS* sample between enrollment status in January of 2006 (the outcome employed in this research) and sector of the first institution attended is 0.95, indicating that while there are theoretical implications attendant with the choice of outcome, statistically the impact is negligible.

⁴⁹ Preliminary analyses indicated a likely violation of the assumption of parallel slopes when using the five-category outcome; collapsing the outcome into three categories resulted in the parallel slopes assumption being satisfied. The assumption of parallel slopes, an important assumption in ordered probit or logit regression analyses, essentially means that if a variable is associated with the likelihood of an individual being in the ordered categories of the outcome, then it is assumed that the probit coefficient linking this variable to the outcome holds the same value across all levels of the outcome (Borooah, 2002).

⁵⁰ In an analysis of four-year college access and enrollment among students in Chicago Public Schools, Roderick et al. (2011) found that of the students who applied to a four-year college, 86 % of them were accepted leading the authors to conclude that acceptance is less of a barrier to a four-year college education than might be expected. The greater obstacle could be found in the fact that many of the students in their sample never faced the college acceptance decisions because they simply did not apply. This finding is consistent with other findings demonstrating that it is application rather than acceptance that explains more of the variability in college enrollment patterns (Manski & Wise, 1983).

⁵¹ Selection bias is an ongoing issue in educational research. In any study without randomized assignment, we may never know whether we have fully assessed all possible sources of initial differences among

individuals. It is important to acknowledge that, in the process of college choice, students self-select into different types of institutions for a variety of reasons. In fact, to some extent, this research models that selection process. Further, this study is of an exploratory nature, intended to better understand the mechanisms by which parent resources may (or may not) influence student college enrollment behavior. Subsequent confirmatory work will provide an appropriate context for the employment of quasi-experimental design techniques, addressing to an even greater extent selection issues and possible causal associations.

⁵² I attempt to approximate a more accurate estimation of reliability for each of the latent factors employed in this research through the use of Raykov's strategy for estimation of scale reliability, which was originally developed for use with LISREL software and was adapted for use with MPlus software. This reliability coefficient, ρ , has the advantage of not assuming tau-equivalence of the latent factor indicators. In addition, this reliability coefficient can be interpreted to generalize to the population for which the instrument (here, the latent factor) is being developed rather than only to the current research sample (Raykov, 2001). Reliability estimates for all latent constructs employed in this research can be found in Appendix Table A3.5.

⁵³ As an intangible asset, social capital is inherently difficult to operationalize and to measure and the identification of appropriate proxies for complex sociological constructs such as social capital poses challenges. Large survey-based databases such as *ELS* provide several measures of *some* dimensions of such notions, but remain limited nonetheless. For example, while it is possible to examine the *frequency* of parents' contacts with their children and other adults, it is more difficult to measure the *nature* of these relationships using the *ELS* data. Further, scholars do not always agree about which measures constitute appropriate indicators of these notions. I carefully combed through the available data related to college-relevant forms of social capital in a search for observable indicators of parents' social resources, assets which are *not* directly observable. Nonetheless, I was limited by the data in the extent to which I was able to closely approximate the number and nature of parents' associations with their children, with the school, and with other parents around issues related to college access and enrollment. There remains a need for large-scale datasets that allow educational researchers to better understand and approximate the social networks and resources accessible via those networks among both parents and students, but also for continued ethnographic research that can help researchers, practitioners, and policymakers to better understand how processes related to college access, persistence, and completion vary within and between racial and ethnic groups.

⁵⁴ Portes (1998) cautions that researchers must take care to distinguish among possessors, sources of, and consequences of social capital, which he defines as the ability to access resources via memberships in social networks and other social structures. I attempt here to measure parent guidance and support for college, parent communication with the school around their child's academic plans and future, and mutual recognition and communication among the parent and parents of their child's friends. These measures primarily reflect consequences of parent social capital.

⁵⁵ One of the assumptions presented by Morgan (2002) is that preparatory commitment to a future course of behavior is a direct function of the strength of the individual's prefigurative commitment to that course of behavior. While the data at hand do not provide a ready measure of the *strength* of students' college expectations, this and other assumptions outlined by Morgan provide compelling avenues for further inquiry.

⁵⁶ Karen (2002) underscores the particular importance of access to accurate postsecondary knowledge in the United States, given that the admissions process is not standardized among colleges. Although unclear regarding the direction of causality, the timing of obtaining this knowledge and information is also influential, as having early college plans substantially increases the likelihood of taking a college preparatory curriculum and enrolling in college (Cabrera & LaNasa, 2000). Given the dataset used in the

investigation, this research could only examine student college expectations and related actions during high school between the 10th and 12th grades. While there are far fewer datasets comparable to *ELS:2002* in range and scope that sample students at time points prior to high school future work in this area must address the nature of student alignment and how students "become aligned" beginning at least in junior high school.

⁵⁷ While several background covariates are employed in the model estimation, for ease of readability, these associations are not depicted in the conceptual model. In the conceptual framework, ellipses depict latent measures while rectangles represent observed measures.

⁵⁸ The capacity of SEM to model latent variables can reduce bias caused by unreliability in measurement (Aiken et al, 1994; Lewis-Beck et al, 2004).

⁵⁹ Unlike the model output provided by the Mplus software when using MLR estimator, however, the output provided when using WLSMV includes a number of fit statistics other than the chi-square statistic. These additional fit indices include the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Weighted Root Mean Residual (WRMR).

⁶⁰ The design weight required to select the appropriate sample for this analysis is a combination of the panel weight for students included in both the first and second follow-ups (F2F1WT>0) and were sample members in the 10th grade (G10COHRT=1). This combination allows for extrapolation to a nationally representative population of 2,000,628 students.

⁶¹ When using the WLSMV estimator with model covariates, model estimation proceeds in four steps. First, univariate probit regressions of each y^* on all x variables are conducted using all people with data on that y^* and the x variables. Second, bivariate probit regressions of each pair of y^* variables on the x variables are conducted using all people with data for that pair. Third, the weight matrix is estimated. Finally, the model is fit using weighted least squares. The first two steps of the model estimation use maximum likelihood estimation to handle missingness. Cases with missing data on any of the observed covariates or the outcome variable are dropped. This resulted in two cases being dropped from the analyses.

⁶² Almost all of the observed variables used in this research are ordinal in measurement scale and were treated as such in all statistical models. This allowed me to be more precise in estimating parameters and model fit statistics. Due both to this measurement issue as well as the fact that data from *ELS:2002* is publicly available, I decided that the provision of descriptive statistics for each of the immigrant generation groups, as opposed to covariance matrices, was a more appropriate way to present these data. The data can be obtained from the National Center for Education Statistics (<http://nces.ed.gov/surveys/els2002>). The correlations among latent model measures within each generation group can be found in Appendix Tables A3.2, A3.3, and A3.4.

⁶³ It is only possible to arrive at latent factor means that are comparable across groups by way of structural invariance testing, during which all model measures, including control covariates, are included. Therefore, I present and compare the adjusted means for the latent factors in the model. (See Appendix A3 for further information regarding the use of multiple group invariance testing to compare latent factor means across immigrant generations).

⁶⁴ The 13 income levels used by NCES are as follows: (1) no income; (2) \$1,000 or less; (3) \$1,001-\$5,000; (4) \$5,001-\$10,000; (5) \$10,001-\$15,000; (6) \$15,001-\$20,000; (7) \$20,001-\$25,000; (8) \$25,001-\$35,000; (9) \$35,001-\$50,000; (10) \$50,001-\$75,000; (11) \$75,001-\$100,000; (12) \$100,001-\$200,000; (13) \$200,001 or more.

⁶⁵ Latent factor ranges reflect the range of estimated latent factor scores among individuals in the sample. Negative values result from the fact that factor scores are not centered. The process of factor score estimation provides a metric by assigning factor scores a mean of zero (L. Muthén, 12/1/2006, Mplus Discussion Board). In the case where a latent factor is predicted by other factors in the model, the metric for the dependent latent factor is also adjusted for the influence of each of those predictors. These score ranges are derived from the model in which the alignment construct is regressed on parent resources and model covariates. It was not possible to estimate latent factor scores for the full model because one cannot estimate latent factor scores in Mplus when the model includes a dependent variable regressed on another dependent variable (in this model, enrollment regressed on alignment). Given that estimated latent factor means do not differ markedly between this model and the full structural model, it is assumed that the latent factor score ranges do not differ substantially either.

⁶⁶ Mean differences on observed measures were estimated using the Bonferroni correction with AM software, a special-purpose software package that has been developed through a partnership between the National Center for Education Statistics and the American Institutes for Research. The AM software is appropriate for the estimation of statistics using complex sample survey data because, as variance estimation software, it was specifically designed to correct for the fact that the data were not collected through a simple random sampling design. Estimates made without taking the complex sampling design tend to underestimate the sampling variance, which can lead to the rejection of the null hypothesis more often than would actually be warranted (Ingels et al., 2004). Mean differences on latent factors were estimated through multiple-group invariance testing using Mplus software (see Appendix A3 for a detailed description of invariance testing procedures used in this research).

⁶⁷ It is recognized that true differences in residual variation across groups can confound cross-group comparisons of probit regression coefficients (see for example Allison, 1999; Long, 2009; Williams, 2009). Typically, in a logit or probit regression situation, the residual variance of y^* is fixed to a constant value across models and across groups (as opposed holding the variance of y constant, as in OLS). This means that the explained and total variances change from model to model, making the comparison of coefficients across models or across groups problematic because y^* is always scaled differently from model to model or group to group. Given that the residual variance of y^* is fixed at one for model identification purposes in probit regression. One needs to somehow control in for differences in residual variation across groups when doing cross-group comparisons or it becomes impossible to make valid comparisons of parameters. When comparing probit coefficients across groups in Mplus using WLSMV estimation, differences across groups in residual variances are in effect controlled for by fixing the residual variances (theta parameterization) or scale factors (delta parameterization) of all y^* 's to one in one group and allowing the residual variances (or scale factors) to be free in the other group(s). In this manner, the differences in residual variances across groups is controlled for or "parceled out" of the coefficient estimates. Thus, having established at least loading and threshold invariance, one can compare whether the magnitudes of parameters differ across groups above and beyond differences across groups in residual variances through comparisons of nested models. (See Mplus Discussion Board for additional details: <http://www.statmodel.com/discussion/messages/23/4094.html?1264813972>)

⁶⁸ While the first and fourth steps demonstrate whether mediation is complete and consistent (Kenny, Kashy, & Bolger, 1998), the second and third steps outline the only criteria needed to determine whether mediation is occurring. Partial, as opposed to complete, mediation is occurring when the association between the initial variable(s) and the outcome is reduced in absolute magnitude when the mediator is included but remains non-zero.

⁶⁹ This is because probit regression coefficients give the impact of the independent variables on the latent variable underlying the outcome (or y^*), rather than on the outcome variable (or y) itself. The latent variable y^* can be converted into a probability estimate for y by computing the cumulative normal of y^* . Yet this transformation results in a non-linear relationship between the coefficients and the probability of

observing a given level of y . Changes in the probability of observing a particular level of y given a change in a predictor will depend upon the value of all of the other predictors in the model and their corresponding coefficients.

⁷⁰ While the advantages of estimating marginal effects are recognized, the MPlus software does not provide the researcher access to derivatives for individual sample members. Therefore, with the estimation software used in this research, I did not have the option to pursue marginal effects at the sample means of the model measures nor to generate the sample averages of individual marginal effects for predictors in the model. In the future, I hope to explore the possibility of estimating marginal effects while working with latent factors within an SEM framework via an alternative software choice.

CHAPTER 4

(Mis)aligned ambitions? Parent Resources, Student Alignment, and Piecing Together the Hispanic College Puzzle

Inasmuch as current U.S. population projections indicate that Hispanic⁷¹ students will continue to comprise an increasing percentage of potential college enrollees well into this century, the lower rates of four-year college enrollment and bachelor's degree attainment among Latina/o adults in the United States present a puzzle, the causes of and solutions to which remain, at best, only partially pieced together (Tienda, 2011). Despite increases in the proportion of Hispanic young adults enrolled in college in the past 30 years, much of the Hispanic enrollment growth has occurred at the community college level (Fry, 2011). Of all Latino young adults attending college in October of 2010, 54 % were at a four-year institution compared with 63 % of Black, 78 % of Asian, and 73 % of White 18- to 24-year-olds. The puzzle of Hispanic educational attainment presents perhaps one of the most critical policy concerns relevant to any efforts targeted at increasing U.S. levels of educational attainment in the coming decades (Nuñez & Kim, 2012; Bowen, Chingos, & McPherson, 2009).

Yet, how are we to piece together this puzzle? Previous research has fit some pieces into place by focusing on parent resources that influence the postsecondary attainment of Hispanic children (Gándara & Contreras, 2009; O'Connor, 2009). Other studies have attempted to account for these differences by focusing on students' academic preparation and the types of postsecondary institutions in which Latino students first enroll. Yet, even when the income and education levels of Latino parents are on par with their White counterparts, something else may be hindering the transmission of

educationally advantageous resources from parents to children during the Latino college choice process (Alon et al., 2010).

Regarding the role of parents, Tienda (2011) suggests that lower levels of four-year college enrollment and completion among Latino youth may be related to the accumulation and usefulness of parents' social resources. Tienda poses the possibility that Hispanic students and their parents are situated in neighborhoods and schools that, while likely offering opportunities to forge the types of social ties that allow for the exchange of *socially supportive* resources, may place constraints on the flow of *educationally relevant* resources, including information about college, among Latino parents.

Turning from parents to students, Adelman (2005) asserts that high expectations are a necessary but not sufficient condition for bachelor's degree attainment. Expectations must be evaluated in combination with academic performance and the actions taken toward the intended goal, including essential steps such as applying to college and taking entrance exams. Exploring the match between college-related expectations and actions may be an especially warranted line of inquiry in the effort to better understand the persistence of lower rates of four-year college enrollment and bachelor's degree attainment among Hispanics in the United States. Using data from the *National Educational Longitudinal Study (NELS)* to investigate differences in college access and choice across different racial and ethnic groups, Hurtado et al. (1997) found that compared to all other groups, Hispanic students applied to fewer colleges, were less likely to engage in an extended college choice process, and were less likely to immediately enroll in college following high school.

Addressing the need for more nuanced research on Latino postsecondary transitions, this investigation offers valuable contributions to our understanding of the Hispanic college puzzle.

The Current Study

Much has been written about disparities in educational outcomes across racial, ethnic, and socioeconomic groups. However, less well understood is how different groups of students make decisions about whether, and at what level, to enroll in college. Moreover, the role that parents' social relations, together with parents' economic and human capital resources, play during the college choice process has been largely overlooked.

A careful consideration of the Hispanic college puzzle reveals that there has been relatively little exploration of how parents' formal and informal social ties may impact the college choice process of their child, including whether the impact differs across racial/ethnic groups. Enrolling in college and obtaining a degree are not simply the products of parents' income and education. Instead, the efficient exchange of money and information, according to social capital theory (Bourdieu, 1986; Coleman, 1988), also depends on the interpersonal ties that bind people together. Social relations and communal affiliations can facilitate or hinder the exchange of resources (Granovetter, 1982), and therefore relations among parents, their children, and school agents must also be accounted for among the resources at parents' disposal as “forms” of social capital (McNeal, 1999; 2005).

A second missing piece is the measure of *alignment* between students' postsecondary expectations on the one hand, and the actual actions they have taken toward the fulfillment of their college ambitions on the other. Over a decade ago, work by Schneider and Stevenson (1999) revealed the existence of an "ambitious generation" of youth, the vast majority of whom aspired to a college degree but often were misguided about how to achieve this goal. The proposed study operationalizes alignment as the degree to which students' postsecondary expectations are matched by the actions in which they engage in pursuit of those ambitions. I use social capital theory as a lens through which to better understand the relationships among parent resources, student expectation-action alignment, and students' initial postsecondary enrollment decisions.

Through the connection of these two pieces, I am able to investigate several research questions. Specifically, I use longitudinal survey data and structural equation modeling techniques to specify the sequence and nature of the associations among parent resources, student alignment, and college enrollment. First, I hypothesize that both parent resources and the alignment between students' expectations and college preparation are important factors influencing student college enrollment. It is also hypothesized that parent resources affect student alignment which in turn impacts the transition from high school to college. Finally, I hypothesize that the degree of alignment may either facilitate or hinder the transmission of parent resources which are known to influence youth's transitions to postsecondary education. Research has suggested that parents' unequal ability to leverage their resources to confer status advantage is responsible for growing racial gaps in college degree attainment (Alon et al., 2010; O'Connor, 2009). However, to

date this body of research overlooks various forms of parent social capital and also disregards alignment as an important mediator in the process of status attainment. I investigate several research questions in order to pursue these hypotheses.

Research Questions

Research Question 1. Does the alignment of 12th grade students' postsecondary expectations versus preparation vary between Latinos and non-Latino Whites?

Research Question 2. Is variation in students' postsecondary enrollment status as measured two years beyond the 12th grade year related to parent resources?

Research Question 3. Is alignment in 12th grade associated with parent resources as measured during the 10th grade year?

Research Question 4. Do associations among parent resources, student alignment, and initial postsecondary enrollment vary between Latinos and non-Latino Whites?

Theoretical Framework

Perna (2006) recognizes that the human capital investment model illustrates the effects of variables such as academic ability and family income on decisions related to college, but concludes that "this approach has limited usefulness for understanding sources of differences in college choices across groups" (p. 107). Sociological approaches to college choice have emerged from traditional status attainment models and attempt to address other factors that are often less tangible and more interpersonal than those accounted for in economic models of human capital.

Recent research within a sociological framework probes the ways in which sociological constructs of cultural and social capital are related to student college choice

(Perna, 2006). As with human, physical, and economic forms of capital, cultural and social capital are resources which can be invested to facilitate upward mobility. Forms of cultural and social capital can also be manipulated to delineate social boundaries where insiders are advantaged in ways that increase productivity while outsiders are disadvantaged (Coleman, 1988; Lamont & Lareau, 1988; Perna, 2006).

Some theorists and researchers interested in the social exchange of resources have argued that access to information largely available only through one's social ties is one manifestation of socioeconomic status (Kerckhoff & Campbell, 1977; Stanton-Salazar & Dornbusch, 1995). From this perspective, any attempt to investigate status attainment that does not attend to the ways in which status or advantage is transferred to children via their own and their parents' various social networks effectively ignores the role of social capital in the production of human capital (Coleman, 1988; Desmond & Lopez Turley, 2009).

Therefore, given the importance of attending to individuals' access to social capital in the study of human capital production, I employ social capital theory as a frame through which to better understand the intergenerational transmission of resources among Latino and White students and their parents as these youth prepare to fulfill their postsecondary ambitions. In the context of this research, forms of social capital that have the potential to connect students to "college knowledge" (Conley, 2007) are considered particularly important.

When it comes to the ways in which parents' relationships with others provide them with access to useful resources, Coleman's functionalist interpretation of social

capital is most frequently deployed in the educational literature (Dika & Singh, 2002). Coleman's work has typically been used to study the positive effects of social capital on school-related outcomes—most often achievement and attainment (Dika & Singh, 2002; Ream & Palardy, 2008). Coleman sees parents' roles as predominant in promoting their children's status attainment and he focuses on the educationally valuable role social capital plays in communicating norms, trust, authority and social control within intergenerational social networks (Perna, 2006). There is by now an extensive literature, which draws mainly from Coleman, on the implications of parent social capital for students' educational advancement (Paulson, 1994; Sui-Chu Ho & Willms, 1996; Kao & Tienda, 1998).

Bourdieu, in contrast to Coleman, attends to social realities and the ways in which some individuals are advantaged because of their membership in particular groups at the same time as other individuals and groups repeatedly come up against the restrictions imposed by structural barriers (Dika & Singh, 2002; Portes, 1998). Bourdieu (1986) proposes that the volume and quality of social capital possessed by a person depends on both the size of the network of connections he or she can mobilize as well as on the volume of capital—economic, human, cultural, and symbolic—possessed by each connection or social tie (Dika & Singh, 2002). Thus, Bourdieu's social capital comprises two elements—the social relationship allowing for access to resources, and also the quantity and quality of those resources (Portes, 1998). Bourdieu views social capital as a mechanism of social stratification; in other words, social capital is used by the dominant class to maintain its dominant position (Lin, 2001; Stanton-Salazar, 1997). That social

capital is less tangible and more easily “hidden” than, say, economic or human forms of capital augments its capacity to serve as a mechanism of stratification (Ream, 2005).

In this investigation, social capital refers to individuals' capacity to gain access to scarce resources—including economic capital and employment or educational opportunities (Granovetter, 1982), as well as knowledge and information (Becker, 1964)—by virtue of their membership in groups and participation in broader structures of society (Bourdieu, 1986; Coleman, 1988). This definition attempts to capture elements of both Coleman's as well as Bourdieu's work on social capital. I seek here to reexamine and extend previous results showing that human and economic forms of capital are transmitted at differential rates from parent to child when comparing Latinos and Whites by placing particular emphasis on less tangible resources that inhere in parental relations. The results of this research may shine a light on whether the social exchange of resources impacts the extent of alignment between students' expectations and actions as well as their postsecondary trajectories. Social capital theory guides this work.

Literature Review

Numerous explanations for lower levels of educational attainment among Latinos in the United States have been proposed, but even in combination these explanations fail to completely account for the lower rates of access to, enrollment in, and completion of higher education among Latino youth (Desmond & Lopez Turley, 2009; Ream, 2005). The fact that these rates remain at levels lower than non-Latino Whites, Blacks, and Asians represents a situation largely unchanged from what Astin (1982) observed some 30 years ago.

In the past several years, some scholars have encountered evidence suggesting that one less-recognized source of observed enrollment and attainment disparities between Hispanic students and their White counterparts is that at least some of the resources that parents can use to the benefit of their child during the college choice process are less convertible into successful outcomes among Hispanic youth (Alon et al., 2010; O'Connor, 2009; O'Connor, Hammack, & Scott, 2010). As one possible explanation for apparent differences in the utility of education and income between Latino and White parents in these studies, Tienda suggests that perhaps even college-educated Hispanic parents may have lower stocks of educationally relevant social capital. Such differences might be due, for example, to having attended less selective universities with weaker alumni networks or receiving their education outside of the U.S. Therefore, lower transmission rates of some resources among Hispanic parents and children during the college choice and enrollment process may reflect incomplete knowledge about these critical determinants of college admission.

Venezia and colleagues (2003) demonstrate that many students and their parents, as well as educators, are quite confused or misinformed about how students should prepare for college. This may be particularly true of Latino students. As others have noted, one striking consistency in the research literature is a thorough documentation of the incomplete information Hispanic students and families possess regarding higher education (Auerbach, 2004; Gándara, 1998, 2002; Gándara & Contreras, 2009; Gonzalez, Stoner, & Jovel, 2003; Immerwahr, 2003; Oakes et al., 2006; O'Connor, 2009; Pérez & McDonough, 2008).

In this investigation, I expand upon the work of Schneider and colleagues (Kim & Schneider, 2005; Schneider & Stevenson, 1999) and their notion of aligned ambitions in order to investigate the possibility that lower rates of resource transmission among Hispanic parents and children during the college choice and enrollment process might reflect a lack of knowledge, accessed through parents' social ties, about the necessary steps students must take to enroll in a four-year institution. In *The Ambitious Generation*, Schneider and Stevenson (1999) asserted that when students do not have a coherent plan for their educational and occupational futures, they are likely to feel overwhelmed by the many possible choices they face. Schneider and Stevenson referred to youth who had high ambitions but no clear plan for reaching them as having *misaligned ambitions*.

Building on these ideas, I conceptualize alignment *vis-à-vis* the college choice process as the match between students' stated postsecondary expectations of obtaining at least a bachelor's degree, on the one hand, and the extent of their preparation toward the fulfillment of those expectations, on the other.⁷² Specifically, among students who expect to complete a bachelor's degree alignment is a latent measure that captures the shared variation among several indicators of the actions students have taken toward realizing their expectations by the time they complete high school. In this way, alignment reflects the extent to which students' postsecondary expectations and college-preparatory actions match up with one another. Lower scores on the latent alignment construct indicate lower levels of alignment, while higher scores reflect closely matched expectations and actions. In other words, the student who has high expectations but has not taken the relevant and/or requisite actions necessary to fulfill those expectations demonstrates misaligned

ambitions. It is expected that whether a student "gets aligned" before leaving high school will likely exert a strong force on his or her postsecondary trajectory.

To operationalize the alignment construct, I draw from the work of Berkner and Chavez (1997) who proposed a sequence of five essential actions required to master the process of college enrollment.⁷³ These five steps are roughly aligned with Hossler and Gallagher's (1987) three-stage—predisposition, search, and choice—model of the college choice process. According to Berkner and Chavez, the first step involves the decision to pursue postsecondary education and at what type of institution (e.g. academic or vocational, two-year or four-year). Next, students must prepare academically for college-level work, which means becoming at least minimally college-qualified. For students aiming to attend a four-year college or university, becoming academically prepared often means completing a certain number of credits or years in core academic areas, as well as in a foreign language. Research by Adelman (1999) suggests that the highest level of coursework completed in certain subjects, particularly math, serves as a proxy indicator of the quality and intensity of academic preparation. As a third step, students usually need to complete either the SAT or ACT entrance examination. Fourth, students choose one or more institutions they wish to attend and submit applications. Finally, students must gain acceptance and make the financial and other arrangements necessary to enroll.

To a large degree, the proposed notion of alignment reflects the match between what Morgan (2002) refers to as *prefigurative* commitment, or the cognitive commitment to enrollment in college following high school, and his or her *preparatory* commitment, or the actions taken from day to day, month to month, and year to year that ultimately

position the student to fulfill his or her prefigurative commitment. However, while Morgan (2002) assumes that the preparatory commitment to a future course of behavior is a direct function of the strength of the individual's prefigurative commitment to that course of behavior, the data at hand do not allow to assess the plausibility of that assumption.

Methods

Data Source and Participants

This research uses data from the *Educational Longitudinal Study of 2002* (*ELS:2002*). The *ELS* data were collected through a two-stage stratified random sampling strategy and include a nationally representative cohort of students in the 10th grade in 2002 (see: <http://nces.ed.gov/surveys/els2002/>).⁷⁴ Multiple respondent populations were surveyed during the base year *ELS* data collection, including students, their parents, their teachers, and their school administrators. In addition to the base year interview, student data was also collected through the first follow-up interview, the high school transcript data collection, and the second follow-up interview. Students in the sample will be interviewed for a final time in 2012 in order to collect information about later outcomes such as postsecondary participation, work experiences, and family life.

The *ELS* was designed to explore students' transitions from secondary school into postsecondary education and the workforce, making this dataset especially appropriate for the current study. For example, *ELS* contains variables that enable measurement of parent resources that are known to affect student postsecondary transitions, as well as

items that measure students' postsecondary expectations and the steps they complete in pursuit of their expectations.

The research sample draws from the base-year panel of 2002 10th graders who were also present for 2004 and 2006 data collection ($N = 13,221$). The sample is limited to students who had obtained a high school diploma or an alternative credential by June of 2005 and who, in 2004, reported ultimately expecting to complete a BA or advanced degree ($N = 8,555$).⁷⁵ In contrast to earlier stages of their K-12 educational experiences, during the later years of high school students are more likely to base their consideration of college choice and application not only on information from their parents but also on their interactions with peers and school staff. Relative to their earlier educational expectations, the level of education students report expecting to complete in the 12th grade is likely a more accurate reflection of where they realistically believe they are headed, particularly in the period immediately following high school.

The study sample is further limited to Latino ($N=1,024$) and non-Latino White ($N=5,420$) students whose stated educational expectation in their senior year was the completion of at least a bachelor's degree ($N=6,444$). This follows from recent research identifying stark discrepancies between Latino and White students in both enrollment and persistence, particularly at four-year institutions. By limiting the study sample to this specific group of Latino and White students, I am better able to address the research issue raised by the fact that a rapidly expanding but less educated U.S. Hispanic population is rushing into the pool of potential workers just as a generation of largely White and predominantly college-educated baby-boomers heads into retirement. The degree of

missingness on the observed variables ranged from 0 %-13 % among students (average missingness <2 %), and from 0 %-24 % among parents (average missingness <13 %).

Dependent Variable. While research investigating disparities in college access has relied upon a number of different outcomes including application, acceptance, and enrollment, the ultimate outcome of the college choice process is enrollment, which captures both application and acceptance.⁷⁶ Therefore, the key outcome of interest in this investigation is college enrollment status.⁷⁷ This outcome, measured a year and half after expected high school graduation, was originally coded to indicate whether a student (1) never enrolled, (2) stopped or dropped out of a postsecondary institution, (3) was enrolled in a one-year program, (4) was enrolled in a two-year institution, or (5) was enrolled in a four-year institutio. For the purposes of this research, the first and second categories were combined, as were the third and fourth categories, such that the outcome variable used in the analyses reflects whether a student was (1) not enrolled in any postsecondary institution, (2) enrolled in a one- or two-year institution, or (3) enrolled in a four-year institution.⁷⁸

Background variables. A number of control covariates are employed in the analytic models that might also account for the influence of parent resources on both alignment and postsecondary enrollment.⁷⁹

Students who maintain consistent bachelor's degree expectations over time may be more likely to enroll in college (Kao & Tienda, 1998). For this reason, a dummy variable indicating whether the student also expected to complete a bachelor's degree in the 10th grade is employed, the omitted category being those students who did not

maintain consistent expectations. The base year standardized test score composite is included to control for achievement differences prior to data collection. A dummy variable, female, is used to control for gender differences, with the omitted category being male. Another dummy variable reflects the student's family structure in the 10th grade, with the omitted category reflecting a student who lives with both biological parents. The dummy variable for school control (omitted category is a public school) helps account for the fact that whether a student attends a public or private high school may influence his or her transition to college (Adelman, 2002).

Parent resources. In this research I attempt to consider both the economic and sociological resources at parents command. Specifically, I conceptualize the economic and sociological resources at parents' command as interrelated types of capital that play a role in students' transitions to postsecondary education. Information about three types of parent resources measured when students were in 10th grade are included in this investigation. Measures of *social* capital represent less tangible but particularly important reflections of parents' access to information, *via* social exchange, about college investment decisions. Measures of *economic* and *human* capital provide relatively concrete indicators of the more readily identified resources parents command on behalf of their children.

A careful examination of theory and prior research has informed the selection of indicators for the social capital constructs employed in this research. While the social aspects of resource exchange are multidimensional and complex (Ream & Palardy, 2008), I attempt to approximate certain *forms* of parent social capital in a conceptually

coherent manner by searching the *ELS* dataset for items reflecting the frequency and content of parents' interactions with others around issues and activities relevant to their child's college choice process.

Coleman (1988) suggests that the social capital that can be built through a parent's involvement in the educational life of their child is derived both from the relationship between the student and his or her parents and the relationship between parents and other adults, especially adults who are also connected to the student's school. For this reason, I specifically focused on those indicators approximating parents' social exchanges with their children, with the parents of their children's friends, and with school agents. I use latent factor analysis to measure parental stocks of several forms of social capital in this investigation. Latent factor analysis allows the researcher to examine hypothetical constructs using a variety of observable indicators of the constructs which can be directly measured (Raykov & Marcoulides, 2006).⁸⁰ Ultimately, I developed three latent constructs representing various forms of parent social capital. Reliability estimates for the latent constructs, all of which were $\geq .80$, can be found in Appendix Table A4.6.

- *College-Relevant School Social Capital (SSC)*: a three-item construct including the frequency with which the parent contacts the school about the student's course selection, about the student's school program for the following year, and about the student's plans after high school.
- *College-Relevant Family Social Capital (FSC)*: a three-item construct including the frequency with which the parent provides the student with advice about

selecting high school courses, about plans for taking college entrance exams, and about applying to college after high school.

- *Intergenerational Closure*: a five-item construct including whether the parent reports knowing the mother and/or the father of the student's closest friend, the number of times a parent of one of the student's friends gave the parent advice about the school's courses or teachers, how often the parent has received a favor from a parent of one of the student's friends, and how often the parent has provided a favor to a parent of one of the student's friends.

Economic capital is represented by an indicator of parents' combined income in 2001, which in part reflects the ability of the parents to pay for college (Perna & Titus, 2005).⁸¹ The income measure was rescaled by NCES as a 13-level continuous variable prior to data release. Findings from prior research have suggested that parent income shares a positive relationship with the number of college applications submitted by the student, as well as his or her enrollment in either a two-year or four-year institution or in a four-year institution only, and also the number of years of schooling completed (Ellwood & Kane, 2000; Hofferth, Boisjoly, & Duncan, 1998; Hurtado et al., 1997; Perna, 2000a).

Some scholars have conceptualized parents' level of education as an indicator of cultural capital. However, following Becker's (1962) conceptualization of human capital, I view educational attainment as a general reflection of an individual's unique skills and developed capabilities. In this study, then, human capital is represented by the highest level of education completed by either parent. The original five-level measure was

collapsed into a three-level variable indicating whether the highest level of education completed by either parent was no college experience, some college experience, or a bachelor's (or advanced) degree.

Measuring alignment. The alignment measure was created, using latent factor analysis, by situating within students' expectations of completing a bachelor's degree their level of college preparation and academic performance. Data pertaining to college preparation and academic performance reflect the actions students have taken toward realizing their expectations as of the first follow-up when most students in the *ELS* sample were in 12th grade. Data regarding students' actions are based primarily on student reports, with some cross-verification using institutional data. These actions have been selected based on the literature describing those steps which serve as necessary and/or influential precursors to enrollment in four-year institutions of higher education (Berkner & Chavez, 1997).⁸² Variables were selected which indicate whether the student is academically prepared, as reflected by his or her cumulative high school GPA and the highest math course he or she has taken (based on students' high school transcripts), whether the student has taken a college entrance exam, and whether the student has applied to one or more four-year colleges.

Conceptual Framework and Statistical Analyses

I examine the hypothesized impact of parent resources on student college enrollment among Latino and White youth *via* student expectation-action alignment using structural equation modeling (SEM) techniques (Mplus statistical software, Version 6.0, Muthén & Muthén, 2010). The use of SEM techniques allows me to simultaneously test

associations among the variables and constructs of interest and to investigate the time-sequenced process modeled in the conceptual framework (see Figure 4.1).

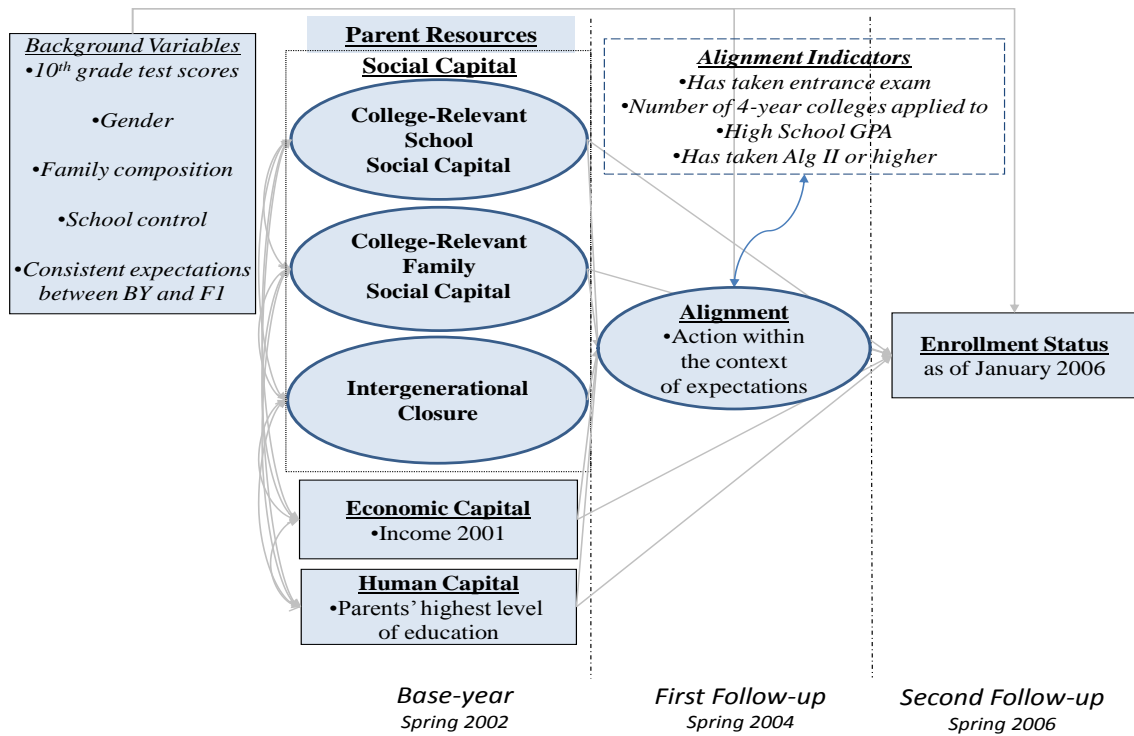


Figure 4.1. Conceptual Framework.⁸³

The use of structural equation modeling statistical analysis offers numerous advantages, particularly in the context of this research (Raykov & Marcoulides, 2006). First, SEM can confirm the measurement model in which multiple items are hypothesized to reflect latent constructs while specifically accounting for measurement error, greatly facilitating the measurement of less tangible sociological constructs.⁸⁴ Additionally, SEM is well-suited for mediation modeling given its capacity to estimate both direct and indirect effects while controlling for other aspects of the model. Finally, the use of SEM techniques allows me to capitalize upon the longitudinal nature of the *ELS* data in order to investigate college choice and enrollment as a time-sequenced *process*.

This research employs ordered probit regression given that the outcome is a categorical variable with three ordinal levels. The probit link is used with the robust weighted least squares (WLSMV) estimator by the Mplus software.⁸⁵ The probit regression model is typically presented in terms of the conditional probability of y given x . In the context of this research, the conditional probability of being enrolled in a four-year institution (category 3 on the outcome variable) for student i can be represented by the following statistical model,

$$Prob(y = 3 \text{ (four-year enrollment)} | \boldsymbol{\eta}_i, \mathbf{x}_i) = 1 - \Phi [(\tau_2 + \boldsymbol{\lambda}_y \boldsymbol{\eta}_i + \boldsymbol{\kappa}_y \mathbf{x}_i) / (1/\sqrt{\theta_y})]$$

where $\boldsymbol{\eta}$ is a vector of latent factor means for individual i with the observed outcome variable y and \mathbf{x} is a vector of observed covariates for individual i . The Cumulative Distribution Function of the standard normal distribution is represented by Φ , and τ defines a threshold ($-\tau = \alpha$) for the observed latent response variable y^* that underlies the observed y such that that $y = 3$ is observed when y^* exceeds τ_2 , or the threshold separating $y = 2$ from $y = 3$. The vector of probit regression coefficients for the regression of y on the latent factors for individual i is represented by $\boldsymbol{\lambda}$ and the vector of probit regression coefficients for the regression of y on the observed covariates is represented by $\boldsymbol{\kappa}$. Finally, θ is the residual variance of y .

In order to examine whether the alignment between students' postsecondary expectations and actions during high school mediates the impact of parent resources on postsecondary enrollment, I use the four-step process outlined by Baron and Kenny (1986) and others (e.g. Kenny, Kashy, & Bolger, 1998; Mackinnon & Fairchild, 2009; Mackinnon, Lockwood, Hoffman, West, & Sheets, 2002). First, variation in levels of

parent resources should share a significant association with variation in the outcome, college enrollment as of January 2006. Second, variation in levels of parent resources must significantly account for variations in alignment. Third, variations in alignment must significantly account for variations in enrollment, controlling for parent resources. Last, when the impact of parent resources on alignment and the impact of alignment on enrollment are accounted for, any previously significant associations between parent resources and enrollment must be reduced—in the instance of full mediation to insignificance (Baron & Kenny, 1986; Little, Card, Bovaird, Preacher, & Crandall, 2007). According to this framework, the presence of mediation requires that at least the second and third of the four criteria listed above be fulfilled.⁸⁶

Results

The results are presented in two main sections. First, I describe the average characteristics of the sample as reflected by the variables and constructs of interest in this investigation. The descriptive results for the latent model variables, namely forms of parent social capital as well as student alignment, account for individual and parent background characteristics.⁸⁷

In the second section, I model links among the focal variables and constructs via the four-step process to examine whether student alignment mediates the association between parent resources and student college enrollment behavior. A detailed description of the model measures employed in this research as well as standardized latent factor loadings are provided in Appendix Table A4.3.

Descriptive Findings

Background characteristics. Consistent with research documenting substantial and persistent disparities between the performance of White and Latino students on standardized tests (a recent review of this data can be found in Kober, Chudowsky, & Chudowsky, 2012), the composite test scores of White students in this sample were, on average, almost 7 points higher than those of their Latino counterparts. Hispanic students were more likely than White students to live in an arrangement other than with both parents but less likely to attend a private school. White students were somewhat more likely to have had expectations of completing a bachelor's degree not only in 12th grade but also in 10th grade, although the vast majority of students in both groups evidenced consistent expectations.

Parent resources. Overall, the data indicate that there are significant differences across groups in the availability of at least some forms of parent social capital, and these differences suggest that parents of Latino youth are disadvantaged relative to parents of White youth. The parents of Latino sample members demonstrated substantially lower levels of college-relevant SSC and intergenerational closure compared to parents of comparable White youth.

Turning to economic capital and human capital, the mean sample family income earned by parents of Latinos in 2001 was just over \$30,000 and the average level of education attained by either parent was no amount of college. In contrast, parents of the average White sample member had a combined family income of just over \$50,000. The

highest level of education attained by either parent of White sample members was, on average, some amount of college.⁸⁸

Student alignment and enrollment. White and Hispanic youth demonstrate similar levels of alignment. White youth outpaced Latino youth on all indicators of alignment, yet levels of alignment do not differ significantly across the two groups after accounting for parent resources and background variables, suggesting that the influence of at least some kinds of parent resources on alignment may vary importantly across groups. The average level of college enrollment in 2006 among both Latino and White students was a one- or two-year institution, although a greater likelihood of being enrolled in a four-year institution pulled the mean upward among White students. A full documentation of descriptive statistics for both groups on all items and constructs of interest is provided in Table 4.1.

Table 4.1. *Descriptive Statistics on Primary Study Measures*

	M(SD)		Range
	Latina/o Student	White Student	
<u>Parent Resources</u>			
<i>Social Capital</i>			
College-Relevant School Social Capital ^a **	0.43(0.89)	0.86(0.82)	-0.63 - 2.94 ^b
<i>How often parent contacts school about academic program**</i>	1.36(0.61)	1.48(0.67)	1(never) - 4(5+ times)
<i>How often parent contacts school about course selection**</i>	1.27(0.53)	1.34(0.54)	1(never) - 4(5+ times)
<i>How often parent contacts school about plans after high school</i>	1.23(0.50)	1.24(0.50)	1(never) - 4(5+ times)
College-Relevant Family Social Capital ^a			
<i>How often parent provides advice about course selection**</i>	0.71(0.87)	0.57(0.82)	-0.89 - 1.98
<i>How often parent provides advice about entrance exams</i>	2.36(0.68)	2.45(0.61)	1(never) - 3(often)
<i>How often parent provides advice about applying to college</i>	2.15(0.79)	2.18(0.72)	1(never) - 3(often)
<i>How often parent provides advice about applying to college</i>	2.16(0.80)	2.15(0.75)	1(never) - 3(often)

Intergenerational Closure ^a **	0.89(0.74)	1.31(0.72)	-0.20 - 2.41
<i>Knows mother of child's closest friend**</i>	0.79(0.41)	0.88(0.33)	0(no) - 1(yes)
<i>Knows father of child's closest friend**</i>	0.57(0.50)	0.77(0.42)	0(no) - 1(yes)
<i>How often parent of child's friend gives advice about teachers and courses at the school**</i>	1.33(0.66)	1.56(0.80)	1(never) - 4(5+ times)
<i>How often parent of child's friend does favor**</i>	2.07(1.13)	2.44(1.05)	1(never) - 4(5+ times)
<i>How often parent does favor for parent of child's friend**</i>	2.17(1.11)	2.54(1.05)	1(never) - 4(5+ times)
<i>Economic Capital</i>			
Income**	8.31(2.41)	10.02(1.85)	1(no income) - 13(\$200,000+) ⁸⁹
<i>Human Capital</i>			
Education**	1.91(0.80)	2.39(0.73)	1(no college) - 3 (BA or higher)
<u>Student Alignment</u>			
Expectation-Action Alignment ^a	3.40(0.95)	4.06(1.02)	1.48 - 5.79
<i>High school GPA**</i>	4.06(1.37)	4.74(1.19)	0(0.00-1.00) - 6(3.51-4.00)
<i>Highest math course completed**</i>	2.23(0.76)	2.53(0.68)	1(< Alg II) - 3(> Alg II)
<i>Has take a college entrance exam**</i>	0.68(0.47)	0.90(0.30)	0(no) - 1(yes)
<i>Number of four-year institutions applied to**</i>	1.40(1.21)	1.76(1.12)	0(none) - 3(2+)
<u>College Enrollment</u>			
Level of enrollment in 2006**	2.00(0.85)	2.37(0.82)	1(not enrolled) - 3(four-year enrolled)
<u>Background Covariates</u>			
Consistent Expectations**	0.82(0.39)	0.91(0.29)	0(no) - 1(yes)
Test scores**	49.18(8.50)	56.47(8.03)	20.91 - 81.04
Gender	1.58(0.49)	1.55(0.50)	1(male) - 2(female)
Family composition **	0.40(0.49)	0.27(0.44)	0(both parents) - 1(other arrangement)
School control**	0.23(0.42)	0.35(0.48)	0(public) - 1(private)

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006.

Statistics weighted by first and second follow-up panel weight and the grade 10 cohort flag.

Note: Latino Sample N = 1,022; White Sample N = 5,415. Statistics based on weighted samples.

^a Latent factor means adjusted for background covariates and other model predictors.

^b Latent factor ranges reflect the ranges of model-estimated individual latent factor scores for each latent construct in the model.⁹⁰

* Mean differences significant at $p \leq .05$

**Mean differences significant at $p \leq .01$ ⁹¹

Mediation

Step 1. I began by regressing 2006 college enrollment status on 2002 parent resources while controlling for several background covariates. This model, which demonstrated a strong fit to the data, showed significant effects for almost all control variables ($p < .05$ in each case).⁹² All of the control variables shared a positive relationship with enrollment with the exception of family composition. Once parent resources, student expectations, and other key demographic variable are accounted for in the model, there is only an enrollment advantage remaining for females among White students. In addition, inasmuch as private schools have been shown to dedicate greater human and material resources to the college counseling function (Simmons, 2011), it seems noteworthy that attending a private high school significantly influences enrollment among both Latino and White students. Finally, and consistent with earlier research, maintaining high educational expectations appears particularly valuable among Latino adolescents (Kao & Tienda, 1998). Invariance testing suggested that maintaining consistent college expectations during high school was even more useful among Latino students than among White students ($\chi^2 \Delta(1) = 5.64, p = .02$).

Among Latino youth, none of the types or forms of parent resources shared a significant relationship with college enrollment at the $p \leq .05$ level. Alternatively, among White youth, most of the parent resources included in this research shared a highly significant association with college enrollment. The associations between enrollment and both college-relevant SSC and having a parent who had completed some college, while not significant, were negative among White students. The relationship between

enrollment and a parent having some college was also negative among Latino students.⁹³

Details for this model are presented in Table 4.2.

Table 4.2. *College Enrollment Regressed on Parent Resources*

	College Enrollment					
	<u>Latina/o Student</u>			<u>White Student</u>		
	<i>b</i>	SE	<i>t</i>	<i>b</i>	SE	<i>t</i>
<u>Parent</u>						
<i>Social Capital</i>						
College-Relevant School Social Capital	0.05	0.10	0.52	-0.03	0.04	-1.55
College-Relevant Family Social Capital	0.00	0.09	0.05	0.15	0.04	3.72
Intergenerational Closure	0.15	0.11	1.32	0.18	0.05	3.81
<i>Economic Capital</i>						
Income	0.01	0.02	0.71	0.05	0.01	3.71
<i>Human Capital</i>						
Some college	-0.07	0.10	-0.64	-0.03	0.06	-0.43
BA or above	0.22	0.12	1.81	0.34	0.07	4.99
<u>Background Covariates</u>						
Consistent expectations	0.28	0.11	2.46	0.11	0.07	1.65
Test scores	0.43	0.06	7.14	0.48	0.03	16.47
Female	0.11	0.10	1.05	0.23	0.04	5.50
Family composition	-0.23	0.10	-2.14	-0.20	0.05	-4.03
School control	0.35	0.12	2.83	0.27	0.06	4.87
<u>Fit Statistics</u>						
χ^2	129.90(109), $p=.08$			320.82(109), $p=.00$		
CFI	0.99			1.00		
RMSEA	0.01 (90% CI, 0.00-0.02)			0.02(90% CI, 0.02-0.02)		

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006. Statistics weighted by first and second follow-up panel weight and the grade 10 cohort flag.

Note: Latino Sample N = 1,022; White Sample N = 5,415. CFI = Comparative Fit Index. RMSEA = Root Mean Square Error of Approximation. When using the WLSMV estimator, the chi-square statistic provided in Mplus is not distributed as chi-square.

Step 2. I continued by regressing 2004 student expectation-action alignment on parent resources and control variables. In this model, which also fit the data well, all but one of the control covariates had a strong positive influence on student alignment at the $p \leq .05$ level for both groups. The effect of family composition was negative. Among

Latinos, the results suggest that a student's level of alignment has more to do with individual characteristics and the type of high school attended than with the intergenerational transmission of resources from parent to child. Among White students a different picture is revealed. While parent income does not share a significant association with alignment, at least one parent having a bachelor's degree as well as all forms of social capital have strong influences on alignment. See Table 4.3 for additional details.

Table 4.3. *Student Alignment Regressed on Parent Resources*

	Alignment					
	<u>Latina/o Student</u>			<u>White Student</u>		
	<i>b</i>	SE	<i>t</i>	<i>b</i>	SE	<i>t</i>
<u>Parent Resources</u>						
Social Capital						
College-Relevant School Social Capital	0.12	0.07	1.67	-0.11	0.03	-3.32
College-Relevant Family Social Capital	0.04	0.06	0.76	0.12	0.03	3.88
Intergenerational Closure	0.05	0.08	0.59	0.13	0.03	4.03
Economic Capital						
Income	0.01	0.02	0.28	0.01	0.01	1.05
Human Capital						
Education: Some college	-0.10	0.10	-1.04	0.00	0.05	0.01
Education: BA or above	0.05	0.12	0.47	0.16	0.05	3.39
<u>Student</u>						
Consistent expectations	0.47	0.11	4.31	0.21	0.05	4.49
Test scores	0.57	0.07	8.37	0.63	0.04	17.99
Female	0.19	0.08	2.50	0.21	0.03	6.86
Family composition	-0.16	0.08	-1.95	-0.26	0.03	-7.80
Private school	0.36	0.12	3.13	0.19	0.04	4.60
<u>Fit Statistics</u>						
χ^2	224.70(166), <i>p</i> =.00			613.97(166), <i>p</i> =.00		
CFI	0.98			0.99		
RMSEA	0.02 (90% CI, 0.01-0.03)			0.02 (90% CI, 0.02-0.02)		

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006. Statistics weighted by first and second follow-up panel weight and the grade 10 cohort flag.

Note: Latino Sample N = 1,022; White Sample N = 5,415. CFI = Comparative Fit Index. RMSEA = Root Mean Square Error of Approximation. When using the WLSMV estimator, the chi-square statistic provided in Mplus is not distributed as chi-square.

Step 3. Next, I proceeded to regress college enrollment on student alignment and the control covariates. This model demonstrated adequate fit with the data. Immediately evident was the fact that the level of alignment between a student's college expectations and related actions shares a strong and highly significant association with his or her college enrollment status in 2006 (Latinos $t(27)=12.76$, $p=.00$; Whites $t(27)=22.02$, $p=.00$). In fact, in the presence of alignment, the previously significant effects exerted by all of the control covariates on college enrollment behavior in Step 1 are no longer significant among Latino youth.

Among White youth, the influence of most control covariates fades to insignificance. The exceptions are the associations between having consistent expectations as well as having high test scores and enrollment. In the presence of alignment, the effects of both of these covariates are significant but are now negative in direction.⁹⁴ This finding suggests the presence in the sample of White students of a somewhat sizeable group of students with relatively high test scores who nonetheless do not demonstrate high levels of alignment and do not enroll in college (or enroll at a lower level than would be predicted by their test scores). For such students, the prediction that they would enroll because of their test score performance is not sustained in the data, and the alignment measure is a better predictor. A corollary pattern could be true for relatively low-achieving students if they demonstrate a level of college enrollment above what is predicted by their test scores.

Worth mentioning is the fact that, before accounting for alignment, attending a private school shared a significant relationship with college enrollment, but when

alignment is accounted for, the relationship between school control and enrollment is no longer significant in either group. This phenomenon may suggest that one of the primary benefits associated with private high-school attendance is that these schools are more prepared to help students take actions during high school that correspond to their educational goals (Simmons, 2011). Additional model details are presented in Table 4.4.

Table 4.4. *College Enrollment Regressed on Alignment*

	College Enrollment Status					
	<u>Latina/o Student</u>			<u>White Student</u>		
	<i>b</i>	SE	<i>t</i>	<i>b</i>	SE	<i>t</i>
<u>Student Alignment</u>						
Expectation-Action Alignment	0.98	0.08	12.76	1.03	0.05	22.02
<u>Background Covariates</u>						
Consistent expectations	-0.16	0.10	-1.53	-0.14	0.06	-2.57
Test scores	-0.09	0.07	-1.21	-0.25	0.04	-5.98
Female	-0.07	0.09	-0.79	-0.03	0.04	-0.72
Family composition	-0.07	0.10	-0.68	0.09	0.05	1.87
Private school	0.06	0.12	0.51	0.02	0.06	0.34
<u>Fit Statistics</u>						
χ^2	70.68(27), <i>p</i> =.00			435.51(27), <i>p</i> =.00		
CFI	0.96			0.91		
RMSEA	0.04 (90% CI, 0.03-0.05)			0.05 (90% CI, 0.05-0.06)		

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006.

Statistics weighted by first and second follow-up panel weight and the grade 10 cohort flag.

Note: Latino Sample N = 1,022; White Sample N = 5,415. CFI = Comparative Fit Index. RMSEA = Root Mean Square Error of Approximation. When using the WLSMV estimator, the chi-square statistic provided in Mplus is not distributed as chi-square.

Step 4. I concluded this series of analyses by regressing 2006 college enrollment status on 2002 parent resources, 2004 student alignment, and model control covariates.

The full structural model, which again fit the data well, explains about 61 % of the variability in enrollment among Latino students and about 67 % among White students.

Here again the positive influence student expectation-action alignment has on college

enrollment is evident (Latinos $t(177)=12.15, p=.00$; Whites $t(177)=20.69, p=.00$). In the presence of alignment none of the control covariates share a significant relationship with enrollment among Latino youth. Significant negative associations between having consistent expectations and test scores on the one hand and enrollment remain among White students. The results suggest that, on average, a one unit increase in the level of student alignment among Latino students in 2004 is associated with an increase of .98 standard deviation units in the latent variable underlying his or her observed level of college enrollment in 2006, and among White students with a 1.03 standard deviation unit increase.

It is informative to consider this finding in terms of the predicted probabilities of college enrollment given a standard deviation increase in alignment.⁹⁵ For the average student in each sample, increasing alignment by one standard deviation increases the predicted probability of enrollment in a 4-year institution from 27 % to 76 % among Latinos and from 57 % to 96 % among Whites.⁹⁶ Although not enough to close the four-year enrollment gap between the two groups, it is worth noting that the boost provided by a standard deviation increase in alignment for Latino students would go a long way in addressing this disparity. Further details regarding predicted probabilities are provided in Appendix Table A4.2.

After accounting for the influence of alignment on enrollment, among Latino students none of the types and forms of parent resources under investigation exerted a significant effect on college enrollment, which is unsurprising given the lack of significant associations observed in steps 1 and 2. Among White adolescents, there is

evidence that alignment may mediate the influence of at least some types and forms of parent resources on enrollment given that the direct effects of all parent resources have dropped to insignificance, excepting the influences of parent income ($p \leq .01$) and a parent having a BA degree or above ($p \leq .05$). See Table 4.5 for model details.

Table 4.5. *Full Structural Model*⁹⁷

	College Enrollment Status					
	<u>Latino/o Sample</u>			<u>White Sample</u>		
	<i>b</i>	SE	<i>t</i>	<i>b</i>	SE	<i>t</i>
<u>Parent Resources</u>						
<i>Social Capital</i>						
College-Relevant School Social Capital	-0.05	0.08	-0.65	0.06	0.04	1.39
College-Relevant Family Social Capital	-0.04	-0.08	-0.54	0.01	0.04	0.14
Intergenerational Closure	0.10	0.10	0.99	0.02	0.05	0.50
<i>Economic Capital</i>						
Income	0.01	0.02	0.35	0.03	0.01	2.45
<i>Human Capital</i>						
Education: Some college	0.03	0.10	0.26	-0.03	0.06	-0.52
Education: BA or above	0.17	0.12	1.42	0.13	0.07	1.98
<u>Student Alignment</u>						
Expectation-Action Alignment	0.98	0.08	12.15	1.03	0.05	20.69
<u>Background Covariates</u>						
Consistent expectations	-0.16	0.11	-1.54	-0.14	0.06	-2.60
Test scores	-0.11	0.08	-1.37	-0.25	0.04	-5.94
Female	-0.08	0.09	-0.85	-0.02	0.04	-0.56
Family composition	-0.05	0.10	-0.51	0.11	0.05	2.18
Private school	0.02	0.12	0.16	0.01	0.06	0.20
<u>Fit Statistics</u>						
χ^2	240.98(177), $p = .00$			744.85(177), $p = .00$		
CFI	0.98			0.99		
RMSEA	0.02 (90% CI, 0.01-0.03)			0.02 (90% CI, 0.02-0.03)		

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006. Statistics weighted by first and second follow-up panel weight and the grade 10 cohort flag. Note: Latino Sample N = 1,022; White Sample N = 5,415. CFI = Comparative Fit Index. RMSEA = Root Mean Square Error of Approximation. When using the WLSMV estimator, the chi-square statistic provided in Mplus is not distributed as chi-square.

Mediated and Total Effects

As stated earlier, in order to conclude that partial or full mediation is occurring, at least two criteria must be fulfilled. First, the effect of an independent variable or construct on the mediating variable or construct must be significant or, in the context of this analysis, the given type of parent resource must share a significant relationship with alignment. The second criterion for mediation requires that the mediator (alignment) be significantly associated with the outcome (level of enrollment) when controlling for the independent measures in the model (parent resources).

Only the second criterion is fulfilled among Hispanic students. While alignment is strongly associated with college enrollment for this group, parent resources do not play a particularly strong role in the college choice process modeled here making mediated effects unlikely. This is borne out by the results, as none of the indirect effects in the full structural model reach significance.

A different story unfolds among White students. Satisfying the first criterion, parent stocks of several resources, including college-relevant FSC and intergenerational closure, as well as income and a high level of human capital, share a significant association with enrollment ($p \leq .01$ in all cases, see Table 4.2). The strong association between alignment and enrollment among White youth fulfills the second criterion.

Below, the total effect of each type and form of parent resource is decomposed into its direct and indirect effects for each group. Among Latino students none of the indirect effects are statistically significant, but parent human capital in the form of a bachelor's or advanced degree has a significant ($t(177)=2.24, p=.03$) total effect on

college enrollment (see Table 4.6). Among White students, on the other hand, each of the parent resources examined here has a significant indirect effect on enrollment via alignment (see Table 4.7). In fact there is evidence that alignment fully mediates the impact of FSC and intergenerational closure on enrollment, as their direct effects on college enrollment drop to non-significance in the presence of alignment. Alignment also partially mediates the associations that parent income and parent education share with enrollment.

In summary, expectation-action alignment appears to be a critical component of the college choice and enrollment process for both groups studied here, but the role that the types and forms of parent assets play as their offspring navigate the process of preparing for and enrolling in college differ in important ways across the two groups.

Table 4.6. *Decomposition of the Total Effect of Parent Resources on College Enrollment, Latino Sample*

	Direct Effect			Indirect Effect through Alignment			Total Effect		
	<i>b</i>	SE	<i>t</i>	<i>b</i>	SE	<i>t</i>	<i>b</i>	SE	<i>t</i>
<i>Parent Resources</i>									
<i>Social Capital</i>									
College-Relevant									
School Social Capital	-0.04	0.09	-0.47	0.10	0.08	1.33	0.06	0.10	0.60
Family Social Capital	-0.05	0.09	-0.62	0.05	0.07	0.79	0.00	0.08	0.01
Intergenerational closure	0.10	0.11	0.89	0.05	0.10	0.42	0.15	0.13	1.16
<i>Economic Capital</i>									
Income	0.01	0.03	0.24	0.01	0.02	0.45	0.02	0.02	0.81
<i>Human Capital</i>									
Education: BA or above	0.17	0.12	1.39	0.10	0.12	0.87	0.27	0.12	2.24

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006.

Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Note: N = 1,022; Coefficients differ slightly from those provided in Table 4.5; this results from the fact that model results for the decomposition of effects were requested with bootstrapped standard errors.

Table 4.7. *Decomposition of the Total Effect of Parent Resources on College Enrollment, White Sample*

	Direct Effect			Indirect Effect through Alignment			Total Effect		
	<i>b</i>	SE	<i>t</i>	<i>b</i>	SE	<i>t</i>	<i>b</i>	SE	<i>t</i>
<u>Parent Resources</u>									
<i>Social Capital</i>									
College-Relevant School Social Capital	0.05	0.04	1.23	-0.13	0.05	-2.79	-0.07	0.04	-1.72
College-Relevant Family Social Capital	0.01	0.04	0.22	0.14	0.04	3.91	0.15	0.04	4.14
Intergenerational closure	0.03	0.05	0.53	0.16	0.04	3.99	0.18	0.04	4.10
<i>Economic Capital</i>									
Income	0.03	0.01	2.31	0.03	0.01	3.35	0.06	0.01	5.16
<i>Human Capital</i>									
Education: BA or above	0.13	0.06	2.09	0.25	0.06	4.50	0.38	0.01	6.75

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006. Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Note: N = 1,022; Coefficients differ slightly from those provided in Table 4.5; this results from the fact that model results for the decomposition of effects were requested with bootstrapped standard errors.

The Utility of Parent Resources Across Groups

Differences across groups in the statistical significance of parameter estimates do not definitively indicate whether the *magnitudes* of the parameter estimates differ measurably across the two racial/ethnic groups. For this reason, model difference testing was conducted in order to evaluate whether parent resources are actually convertible into both alignment and enrollment at a higher rate among White youth relative to Hispanic youth.⁹⁸

The results indicate that the magnitude of the associations between parents' income and education and both alignment and college enrollment do not differ significantly across groups (see Table 4.8). Where the magnitudes of the parameter estimates between parent resources and both alignment and enrollment *do* in fact differ is

in the influence exerted by all forms of parent social capital. Both college-relevant FSC and intergenerational closure bolster alignment and enrollment levels among Latino and White students. However, both of these forms of parent social capital are more easily converted into higher levels of both alignment and college enrollment among White students. This finding may reflect the possibility that parents of Latino youth have less access to information about all aspects of the college choice and enrollment process via their social networks (De La Rosa, 2006; Gándara & Contreras, 2009; Nora & Crisp, 2009; O'Connor et al., 2009; Pérez & McDonough, 2008; Person & Rosenbaum, 2006). College-relevant school social capital is also more readily converted into an influence on enrollment among White students, however the influence is negative.⁹⁹

Table 4.8. *Differences in the Influence of Parent Resources on Student Alignment and Enrollment across Latino and White Youth*

	Alignment			Enrollment (Total)		
	df	$X\Delta$	<i>p</i> value	df	$W\Delta$	<i>p</i> value
<u>Parent Resources</u>						
<i>Social Capital</i>						
College-Relevant School Social Capital	1	9.99	.00	3	15.11	.00
College-Relevant Family Social Capital	1	5.05	.02	3	9.22	.03
Intergenerational Closure	1	4.46	.03	3	6.77	.03
<i>Economic Capital</i>						
Income	1	0.21	.65	3	5.15	.16
<i>Human Capital</i>						
Education: BA or above	1	1.13	.29	3	4.50	.21

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006.

Statistics weighted by first and second follow-up panel weight and the grade 10 cohort flag.

Note: Latino Sample N = 1,022; White Sample N = 5,415.

^a The Mplus statistical software requires the use of "MODEL TEST" command when evaluating parameter constraints for indirect effects. Use of the "MODEL TEST" command results in the use of the Wald test of parameter constraints, rather than the chi-square difference test, to test whether constraining the given parameters results in a significant decrement of model fit.

Discussion

This research contributes to the literature on postsecondary transitions among Latino youth in three key ways. First, few studies have examined whether the educational utility of network-bound parental resources varies across racial/ethnic groups (Ream & Rumberger, 2008). Through the investigation of the availability of various types and forms of resources among parents of Hispanic and White adolescents, including college-relevant forms of parent social capital, I address this gap in the research literature.

The second piece further develops work by Schneider and others through the notion of alignment, conceptualized here as the level of correspondence between a student's postsecondary expectations and the related actions in which he or she engages. In so doing, this research demonstrates the critical importance of the match between students' postsecondary goals, on the one hand, and the actions they take in reach of those goals, on the other hand, for their college enrollment prospects.

The critical nature of alignment for enrollment in a four-year institution could be interpreted as good news, but perhaps only to the extent that the development of aligned ambitions is equally useful across student populations in the pursuit of a four-year degree. On this count, it is troubling that higher levels of expectation-action alignment were less convertible into four-year enrollment among Latino youth ($W\Delta(3)=3.88, p=.05$). For the importance of alignment to work to the advantage of Latino students, rather than serving as an additional barrier to a college degree, there exists the need to better understand how Hispanic students determine what they need to do to best position themselves to fulfill their college expectations. Also needed is further inquiry into whether and how Latino

youth are encouraged to fully capitalize on the match between postsecondary expectations and preparation.

Finally, I link the first two pieces by exploring whether the degree of alignment either facilitates or hinders the transmission of parent resources known to influence youth's transitions to postsecondary education. Findings indicated that while student alignment appears to play a crucial role in the college choice process for both groups, the level of alignment functions to bolster the relationship between parent resources and enrollment only among White students.

Social capital can act as a catalyst, allowing for the conversion of other forms of resources into advantageous outcomes (Bourdieu, 1986; Coleman, 1988). From this perspective, the fact that all forms of parent social capital are less available and/or less convertible among highly ambitious Latino students into higher levels of both alignment and college enrollment suggests that differences observed elsewhere in the utility of parents' education and income among Latino youth may stem, at least in part, from differences in the availability and utility of parents' *social* resources.¹⁰⁰ To wit, Bankston and Zhou (2002) found that while family socioeconomic status was associated with academic achievement among all of the racial and ethnic groups they studied, including White and Latino students, their results suggested that the influence of family SES on academic performance was as much due to social relations as to human and financial capital.

In summary, this research shines an important light on several aspects of the college choice and enrollment process as experienced by both Latino and non-Latino

White youth. The introduction of the notion of expectation-action alignment as a quantifiable and investigable construct calls attention to the critical yet underexplored role that the match between a student's ambitions and his or her actions plays in the pursuit of a four-year degree. Further, this research illuminates the differential availability and utility of the social resources at parents' command during the college choice and enrollment process across the two groups under study. These findings call attention to important directions for policy and practice related to the college preparation and enrollment decisions of Hispanic youth.

For example, Simmons (2011) suggests that policy makers must ask themselves what sort of a return they can expect on investments in PreK-12 education, exhaustive testing schemes, and college readiness standards if students ultimately enroll in less selective institutions or simply forego higher education altogether. As pertains to youth's future educational prospects, Simmons (2011) asserts that policymakers have overlooked the reform of the college counseling function in U.S. public schools as a critical mechanism via which to address the limited access to college-relevant social capital experienced by low-income, minority, and first-generation college students.

Beyond connections to college information and guidance through school counselors, Hispanic students also require access to a school environment that can serve to prepare them for college coursework while promoting and nurturing their high educational expectations. Uneven access to college-preparatory courses during high school (and even middle school), particularly in the schools Latinos are most likely to

attend, has been documented in other research (Burciaga et al., 2009; Contreras, 2005; Gándara & Contreras, 2009).

Limitations

The findings presented here add to the small but growing body of research which seeks to better understand how Latino youth and their families navigate the college choice process by adding three important pieces to the puzzle of Latino degree attainment. Still, this study, like any, is not without limitations.

First, it is important to remember that this research excludes students who did not expect to complete a bachelor's degree in their senior year and/or who did not complete high school. These exclusions were made given that students who do not aspire to a BA degree may enter two-year schools for a variety of reasons but are generally not interested in attending four-year schools (O'Connor et al., 2009). Excluding such students allowed me to focus on the research issue of interest, that is, whether the extent to which students' actions are aligned with their bachelor's degree expectations serves to impede or assist intergenerational resource transfer during the college choice and enrollment process. The sample included in this research is a more selective group relative to the population of all Hispanic and White students who were sophomores in 2002 and conclusions drawn from this research may not be applicable to this broader population.

In addition, because the population of Latinos in the United States is not monolithic, it is possible that there may be differences in the college choice process depending on students' national origin. While this study attempts to address national origin differences by including Mexican-origin status as a control, the relatively small

sample sizes of other Latino sub-groups (e.g. Cuban, Dominican, Puerto Rican, Salvadoran) did not allow for further disaggregation. Additionally, it is also possible that the findings encountered here for Hispanic youth may vary depending on the student's nativity status, a possibility that future research should address.

Finally, as Lin (2001) observes, individual action cannot be fully understood except in relation to the social context in which it occurs. While this study has the advantage of allowing for a close examination of the ways in which certain characteristics of parents and students impact the process of college choice, it was not designed to also investigate the influence of the school, community, state, and national contexts in which students are embedded. Other research has documented strong associations between the college-going tradition of a high school and 1) the likelihood that its students applied to and enrolled in college and 2) the quality or selectivity of the college that its students attended (Alexander & Eckland, 1977; Manski & Wise, 1983). It is hoped that findings from this study will inform future research that explores the potential relationships between the development of student expectation-action alignment and the overlapping contexts in which youth are situated.

Concluding Remarks

Given that Latino students are projected to make up over half of the growth in the college-age population over the next decade, improving their overall college attainment rates, currently the lowest of all racial and ethnic groups, must be a primary policy concern in any effort to improve educational attainment levels in this country (Alon et al.,

2010; Bowen et al., 2009; Burciaga et al., 2009; Fry, 2011; Gándara & Contreras, 2009; Nuñez & Kim, 2012; Swail, Cabrera, & Lee, 2004; Tienda, 2011).

To date, programmatic efforts aimed at boosting postsecondary access and retention among low-income youth and students of color have not made as big of a difference as was hoped, in part due to the knowledge gap among policymakers about the needs of the intended recipients of policy and programmatic initiatives (Datnow et al., 2010). In order for policymakers and practitioners to promote and support higher levels of educational attainment among the Latino population, the research community must more fully address how Latino students and their families navigate the college choice and enrollment process. Through such lines of research, the specific needs of this group can be better identified and subsequently addressed through targeted policies and practices.

This investigation has demonstrated that alignment can serve much like a bridge on the road to college, such that when students are able to align their actions with their college expectations and then fully capitalize on that match, they are more likely to follow the most direct route to the eventual completion of a bachelor's degree by enrolling in a four-year institution. Yet, efforts to help Latino youth and their families understand the rules of the road, including how to access this bridge, will require greater awareness of how Latino students and their families obtain and make use of information and guidance as they decide whether and where to attend college. While this research begins to more fully illuminate the distinct college choice process that Latino youth and their families navigate, clearly there is important work still to be done in putting together this continuing puzzle.

⁷¹ On the west coast the meta-categorical term Latina/o is often preferred to Hispanic (Bean and Tienda, 1987). Yet when U.S. Latinos/Hispanics are asked to choose between the panethnic terms, Hispanic is preferred over Latino by a 3 to 1 margin (National Research Council, 2006). Here, both terms are used interchangeably, but it is recognized that neither of these labels comes close to capturing the vast ethnic and cultural heritage of the populations of interest. I use Latino/os to refer to both male and females unless otherwise specified.

⁷² In the literature addressing the educational futures U.S. youth and their parents envision, the terms *expectations* and *aspirations* are often used interchangeably. Both have been identified in the literature as having a marked impact on the educational attainment process (Bohon, Johnson & Gorman, 2006; Cabrera & LaNasa, 2001; Hanson, 1994; Kao & Tienda, 1998; Perna, 2006). While aspirations and expectations are conceptually similar, aspirations are somewhat abstract, indicating idealistic hopes for the future. Aspirations represent values to an extent (Perna & Titus, 2005) but may also reflect students' socialization into a society which places ever increasing importance on higher education. This research employs expectations as a more concrete indicator of students' educational ambitions. I follow the work of other scholars who conceptualize aspirations as reflecting an ideal or what students and parents *want* to see happen, versus expectations which reflect what they believe will *actually occur* (Bohon et al., 2006; Goldenberg, et al., 2001; Hanson, 1994; Mickelson, 1989, 1990).

⁷³ The five steps outlined by Berkner and Chavez comprise what can arguably be considered the minimum number of actions required simply to achieve participant status in the college entrance competition. Yet, many parents from middle and high socioeconomic backgrounds engage in a process of "concerted cultivation" (Lareau, 2000) with their children and, as Alon (2009) notes, these parents are highly involved in decisions about their children's academic activities and high school course placements (Lareau, 2000; Lareau and Horvat, 1999; Lucas, 1999; Massey et al., 2003). As stratification in the postsecondary system has continued to intensify since the mid-1980's, these parents have increasingly engaged in steps stretching far beyond those outlined by Berkner and Chavez. Alon (2009) goes on to state that this augmented sequence of *parental* actions includes, for example, enrolling their children in admissions test-preparation activities and selecting the high school that will provide an adequately rigorous college-preparatory curricula, all with the goal of situating the student in optimal field position during the "selective college admissions game" (Moll, 1978, 1979).

⁷⁴ In the first stage of the sampling strategy, schools were stratified by region, urbanicity, and control (public, Catholic, or other private). Each school had a probability of selection into the school sample proportionate to its size. The final sample of schools consisted of 752 responding schools with a 10th grade, including 580 public schools and 172 private schools (including Catholic schools). During the second stage, students were selected into the sample using a clustering technique whereby a random sample of 24-26 students were selected from each school (as opposed to classrooms). Asian and Pacific Islander students were over-sampled. Of about 17,600 eligible selected sophomores, about 15,400 completed a base-year questionnaire, resulting in a weighted response rate of 87 %. The first follow-up interview took place in the spring of 2004, when most sample members were seniors in high school. The first follow-up included 16,500 students and 15,000 participated, for a weighted response rate of 89 %. The second follow-up interview took place in 2006, approximately 2 years after most sample members had graduated from high school. Of the 15,900 eligible sample members, 14,200 participated in the second follow-up, leading to a weighted response rate of 88 %. This study uses student survey data from the base year, first follow-up and second follow-up, as well as parent survey data from the base year. The weighted response rate for the parent survey was 87.5 %.

⁷⁵ Including students who expect to complete some level of postsecondary education less than a bachelor's degree could muddy the results of the analysis, given that not all students who enroll in a two-year college want or expect to complete a bachelor's degree.

⁷⁶ In an analysis of four-year college access and enrollment among students in Chicago Public Schools, Roderick et al. (2011) found that of the students who applied to a four-year college, 86 % of them were accepted, leading the authors to conclude that acceptance is less of a barrier to a four-year college education than might be expected. The greater obstacle could be found in the fact that many of the students in their sample never faced the college acceptance decision because they simply did not apply. This finding is consistent with other findings demonstrating that it is application rather than acceptance that explains more of the variability in college enrollment patterns (Manski & Wise, 1983).

⁷⁷ While I considered using the sector of the first institution attended after high school as the outcome, this variable did not allow me to include those students who never enrolled. As Alon (2009) notes, not including the range of postsecondary destinations available to students can skew evaluations of equality in educational opportunity given that low-income and minority youth are more likely than other students to discontinue their education upon leaving high school. Further, the bivariate correlation in the *ELS* sample between enrollment status in January of 2006 (the outcome employed in this research) and sector of the first institution attended is 0.95, indicating that while there may be theoretical implications attendant with the choice between these two outcomes, statistically the impact is negligible.

⁷⁸ Preliminary analyses indicated a likely violation of the assumption of parallel slopes when using the five-category outcome; collapsing the outcome into three categories resulted in the parallel slopes assumption being satisfied. The assumption of parallel slopes in ordered probit or logit regression analyses essentially means that if a variable is associated with the likelihood of an individual being in the ordered categories of the outcome, then it is assumed that the probit coefficient linking this variable to the outcome holds the same value across all levels of the outcome (Borooah, 2002). I also ran the model as a multinomial logit model, such that levels of the outcome variables were not treated as ordinal in nature. This model exhibited larger values of both the Akaike Information Criteria and Bayesian Information Criteria than the model in which the outcome was treated as ordinal. Smaller values on both of these two model fit criteria indicate the preferred model (Browne & Cudeck, 1993), in this case the ordered probit model.

⁷⁹ Selection bias is an ongoing issue in educational research. In any study without randomized assignment, we may never know whether we have fully assessed all possible sources of initial differences among individuals. It is important to acknowledge that, in the process of college choice, students self-select into different types of institutions for a variety of reasons. In fact, to some extent, this research models some aspects of that selection process. Further, this study is of an exploratory nature, intended to better understand the mechanisms by which parent resources may (or may not) influence student college enrollment behavior. Subsequent confirmatory work may provide an appropriate context for the employment of quasi-experimental design techniques, addressing to an even greater extent selection issues and possible causal associations.

⁸⁰ The identification of appropriate proxies for complex sociological constructs such as social capital poses challenges. Large survey-based databases such as *ELS* provide several measures of *some* dimensions of such notions, but remain limited nonetheless. For example, while it is possible to examine the *frequency* of parents' contacts with their children and other adults, it is more difficult to measure the *nature* of these relationships using the *ELS* data. Further, scholars do not always agree about which measures constitute appropriate indicators of these notions.

⁸¹ It is, however, recognized that income does not reflect parents' total net worth, or wealth, and that this fact limits its accuracy as an indicator of parents' "ability to pay" for college.

⁸² Karen (2002) underscores the particular importance of access to accurate postsecondary knowledge in the United States, given that the admissions process is not standardized among colleges. Although unclear regarding the direction of causality, the timing of obtaining this knowledge and information is also influential, as having early college plans substantially increases the likelihood of taking a college

preparatory curriculum and enrolling in college (Cabrera & LaNasa, 2000). Given the dataset used in the investigation, this research could only examine student college expectations and related actions during high school between the 10th and 12th grades. While there are far fewer datasets comparable to *ELS:2002* in range and scope that sample students at time points prior to high school, future work in this area must address the nature of student alignment and how students "become aligned" as early as during junior high school or even before.

⁸³ For ease of readability, lines representing the associations between covariates and other model measures are not depicted in the conceptual model. In the conceptual framework, ellipses represent latent measures while rectangles represent observed measures.

⁸⁴ The capacity of SEM to model latent variables can reduce bias caused by unreliability in measurement (Aiken et al, 1994; Lewis-Beck et al, 2004).

⁸⁵ When using the robust weighted least squares (WLSMV) estimator with model covariates, model estimation proceeds in four steps. First, univariate probit regressions of each y^* on all x variables are conducted using all people with data on that y^* and the x variables. Second, bivariate probit regressions of each pair of y^* variables on the x variables are conducted using all people with data for that pair. Third, the weight matrix is estimated. Finally, the model is fit using weighted least squares. The first two steps of the model estimation use maximum likelihood estimation to handle missingness. Cases with missing data on any of the observed covariates or the outcome variable are dropped. This resulted in two cases being dropped from the analyses among the Latino sample and four cases being dropped from the White sample.

⁸⁶ While the first and fourth steps demonstrate whether mediation is complete and consistent (Kenny, Kashy, & Bolger, 1998), the second and third steps outline the only criteria needed to determine whether mediation is occurring. Partial, as opposed to complete, mediation is occurring when the association between the initial variable(s) and the outcome is reduced in absolute magnitude when the mediator is included but still remains non-zero.

⁸⁷ The decision was made to present latent factor means conditional on other model measures given that, within the structural equation modeling framework, the simultaneous estimation of all model parameters, including latent factor means, implies that examining a particular parameter in isolation of the others lacks substantive meaning. Additionally, it is only possible to arrive at latent factor means that are comparable across groups by way of structural invariance testing, which presupposes that measurement invariance has been established. Once again, there is little to be gained in terms of substantive value by evaluating the invariance of any particular model parameter in isolation of other aspects of the full structural model (See Appendix A4 for further information regarding the use of multiple group invariance testing to compare latent factor means across Latino and White students and parents).

⁸⁸ I also examined the proportion of parents in each sample holding a bachelor's or advanced degree. Among Latino youth, in 33 % of the cases at least one parent held a bachelor's or advanced degree, among White youth 57 % of parents had at least a four-year degree.

⁸⁹ The 13 income levels used by NCES are as follows: (1) no income; (2) \$1,000 or less; (3) \$1,001-\$5,000; (4) \$5,001-\$10,000; (5) \$10,001-\$15,000; (6) \$15,001-\$20,000; (7) \$20,001-\$25,000; (8) \$25,001-\$35,000; (9) \$35,001-\$50,000; (10) \$50,001-\$75,000; (11) \$75,001-\$100,000; (12) \$100,001-\$200,000; (13) \$200,001 or more.

⁹⁰ Latent factor ranges reflect the range of estimated latent factor scores among individuals in the sample. Negative values result from the fact that factor scores are not centered. The process of factor score estimation provides a metric by assigning factor scores a mean of zero (L. Muthén, 12/1/2006, Mplus Discussion Board). In the case where a latent factor is predicted by other factors in the model (alignment),

the metric for the dependent latent factor is also adjusted for the influence of each of those predictors. The latent factor scores are derived from the model in which the alignment construct is regressed on parent resources and model covariates. It was not possible to estimate latent factor scores for the full model because one cannot estimate latent factor scores in Mplus when the model includes a dependent variable regressed on another dependent variable (in this model, enrollment regressed on alignment). Given that estimated latent factor means do not differ markedly between this model and the full structural model, it is assumed that the latent factor score ranges do not differ substantially either.

⁹¹ Mean differences on observed measures were estimated using the Bonferroni correction with AM software, a special-purpose software package that has been developed through a partnership between the National Center for Education Statistics and the American Institutes for Research. The AM software is appropriate for the estimation of statistics from complex sample survey data because, as variance estimation software, it was specifically designed to correct for the fact that the data were not collected through a simple random sampling design. Estimates made without taking the complex sampling design into account tend to underestimate the sampling variance, which can lead to the rejection of the null hypothesis more often than would actually be warranted (Ingels et al., 2004). Mean differences on latent factors were estimated through multiple-group structural invariance testing using Mplus software (see Appendix Table A4.7 for the results of latent mean difference testing).

⁹² While the chi-square statistic, which evaluates the size of the discrepancy between the sample and fitted covariance matrices, is the traditional method for evaluating overall model fit (Hooper, Coughlan, & Mullen, 2008; Hu & Bentler, 1999). Models with good fit should yield an insignificant result at or below $p = .05$. However, there are a number of severe limitations in the use of the chi-square (Hooper et al., 2008). This test assumes multivariate normality and is also extremely sensitive to sample size. Departures from normality or sample sizes above around 200 nearly always lead to rejection of the model even when it is properly specified (McIntosh, 2006; Bentler & Bonnet, 1980). The comparative fit index (CFI) assumes the null/independence model (i.e. that all latent variables are uncorrelated) and compares the sample covariance matrix with this null model. The CFI, unlike some fit indices, accounts for sample size (Hooper et al., 2008). Values of the CFI can range from 0 to 1.0 and Hu and Bentler (1999) suggest that a CFI of at least 0.90, but preferably of 0.95 or above, is desirable in order to conclude a good fit between the model and the observed data. The root mean square error of approximation (RMSEA) indicates how well the model would fit the population covariance matrix given unknown but optimally chosen parameters (Hooper et al., 2008). The RMSEA has come to be considered a more informative index than many others in recent years given its sensitivity to the number of parameters estimated in the model (Hooper et al., 2008). The suggested upper-limit cutoff for the RMSEA is 0.06 (Hu & Bentler, 1999).

⁹³ In an attempt to address national origin differences among Latino youth, I ran each of the models discussed here with a covariate indicating whether or not the student was of Mexican origin. Approximately 58 % of the students in the Latino sample are of Mexican origin. Across all analyses conducted as a part of this research, none of the results were significantly different between Hispanic students of Mexican origin and those of some other national origin. The relatively small sample sizes of other Latino sub-groups (e.g. Cuban, Dominican, Puerto Rican, Salvadoran) did not allow for further disaggregation given the number of parameters estimated in the model.

⁹⁴ It appears that once alignment is introduced as a predictor of college enrollment, it suppresses extraneous variance in both test scores and consistent expectations that is irrelevant to enrollment, such that these covariates no longer exert a positive effect on enrollment. This pattern reflects what Hicks and Patrick (2006) described as "crossover" suppression, which occurs when the beta coefficient of the initial predictor (here, test scores and consistent expectations) reverses sign while the beta coefficient for the suppressor variable (here, the alignment construct) increases relative to its initial value (Cohen & Cohen, 1975; Conger, 1974; Paulhus et al., 2004). Indeed it is the case that when enrollment is regressed on alignment without covariates in the model, its beta coefficient is 0.86 among Latinos and 0.85 among Whites, both of

which are lower than the values observed in Table 4.4. In other words, the indirect association between test scores and consistent expectations on the one hand and enrollment on the other *via* alignment overwhelms the direct effects. Only when the suppressor variable, alignment, is introduced are the possibly more valid indicants of the associations between these two covariates and postsecondary enrollment revealed. As opposed to the redundancy observed when two correlated predictors are included in the same regression equation and their shared variance overlaps with the criterion (here, enrollment), suppression is the unique situation in which the shared variance between the predictors is irrelevant to the outcome. The removal of this irrelevant shared variance enhances the validity of each predictor. Still, these findings are to be interpreted with extreme caution given that this is initial and exploratory research. As Hicks and Patrick (2006) assert, suppressor situations are complex. Their interpretation depends on the theoretical framework that proposes the hypothetical relationships between the predictors and outcome. Nonetheless, suppressor situations are important to identify and explore as they have the potential to reconcile what may seem to be an inconsistency between theory and empirical data (Hicks & Patrick, 2006).

⁹⁵ While the advantages of estimating marginal effects are recognized, the Mplus software does not provide the researcher access to derivatives for individual sample members. Therefore, with the estimation software used in this research, I did not have the option to pursue marginal effects at the sample means of the model measures nor to generate the sample averages of individual marginal effects for predictors in the model. In the future, I hope to explore the possibility of estimating marginal effects while working within a latent variable framework via an alternative software choice.

⁹⁶ This is a student who has held consistent expectations between 10th and 12th grades and has average standardized test scores. This student is attending a public school and living with both parents, at least one of whom completed some college. The student's parents possess mean stocks of various types of resources.

⁹⁷ Standardized coefficients for the full structural model are provided in Appendix A4. While the raw probit coefficient represents the amount of change, in standard deviation units, in y^* for a one unit change in x , a standardized probit coefficient represents the amount of change, in standard deviation units, in y^* for a one standard deviation unit change in x .

⁹⁸ It is recognized that true differences in residual variation across groups can confound cross-group comparisons of probit regression coefficients (see for example Allison, 1999; Long, 2009; Williams, 2009). Typically, in a logit or probit regression situation, the residual variance of y^* is fixed to a constant value across models and across groups (as opposed holding the variance of y at a fixed value, as in OLS). This means that the explained and total variances change from model to model, making the comparison of coefficients across models or across groups problematic because y^* is scaled differently from model to model or group to group. Given that the residual variance of y^* is fixed at 1.0 for model identification purposes in probit regression, one needs to somehow control for differences in residual variation across groups when doing cross-group comparisons or it becomes impossible to make valid comparisons of parameters. When comparing probit coefficients across groups in Mplus using WLSMV estimation, differences across groups in residual variances are in effect controlled for by fixing the residual variances (theta parameterization) or scale factors (delta parameterization) of all y^* 's to 1 in one group and allowing the residual variances (or scale factors) to be free in the other group(s). In this manner, the differences in residual variances across groups is controlled for or "parceled out" of the coefficient estimates. Thus, having established at least loading and threshold invariance, one can compare whether the magnitudes of parameters differ across groups above and beyond differences across groups in residual variances by comparing of nested models. One benefit of structural equation modeling is that the flexibility of this modeling approach allows one to easily examine, through statistical tests, whether model parameters differ in magnitude across groups. This is accomplished by comparing a nested model in which one structural parameter at a time is constrained to equality across groups with a baseline model in which all structural parameters are freely estimated in both groups. In Mplus either a chi-square or Wald test of model difference is then estimated.

(See Mplus Discussion Board for additional details:
<http://www.statmodel.com/discussion/messages/23/4094.html?1264813972>)

⁹⁹ One plausible interpretation is that parent stocks of college-relevant school social capital have a positive effect among Latino students but a negative effect among White students because Latino and White parents have different motivations for contacting the school about academic issues related to their child's coursework and future plans. For example, Latino parents may make contact with school personnel in pursuit of information that they can then use to encourage and support their child's pursuit of his or her postsecondary goals. Alternatively, inasmuch as higher average stocks of capital of one kind correspond to higher levels of other types of capital (Bourdieu, 1986), the wealthier and more highly educated parents of White youth in this sample may be more likely to already have access to this information through other sources. Therefore they might predominantly go to school agents around these issues only when their child is not demonstrating the expected level of commitment to attending college or to performing well academically.

¹⁰⁰ This finding may reflect the potentially nonlinear effect of parent income on college enrollment (see Nuñez & Kim, 2012). To examine this possibility, I ran the full structural model with parent income collapsed into quartiles. Among Hispanic students, relative to those in the lowest income quartile, for students in the highest income quartile parent income does have a significant positive total effect ($p=.03$) on enrollment. Further, the positive influence of parent income on enrollment among students from the highest income quartile is fully mediated by alignment such that the direct effect of income on enrollment among all of the Latino students in this group is non-significant. No differences were observed for students in the second or third income quartiles, relative to students from the first income quartile. Together these results do suggest that among Hispanic youth, parent income may share a nonlinear association with college enrollment. Among White youth, on the other hand, results from the model with parent income categorized into quartiles suggested a linear relationship; for students in the second, third, and fourth income quartiles, the influence of parent income on enrollment was significantly higher than the influence observed among students in the first quartile. It will be important for future research to more fully address the nature of the association between parent income and college enrollment among Latino youth. A logical first step in this line of research might be to examine the effects of income on both alignment and enrollment *within* income quartiles among Hispanic students.

Chapter 5

Summary and Conclusions

I can easily recall countless childhood hours happily spent putting together many a jigsaw puzzle. I can also remember the frustration of getting drawn into a puzzle only to realize that many pieces had gone missing. Whatever amazing image had begun to come together was abruptly packed back into the box and stuffed away into some distant corner of a closet or drawer, usually to be quickly forgotten.

The fact that Latino students are losing ground to their non-Latino White and Black peers in four-year college enrollment and bachelor's degree attainment even as Latino college enrollment and graduation rates are at an all time high presents a puzzle of a different kind. There are pieces missing from the Hispanic college puzzle also but, unlike a childhood toy, this puzzle cannot be packed away and forgotten. Instead, filling in the missing pieces will be essential to realize the potential "demographic dividend" embedded in the diverse youth population that will enter the U.S. workforce in the next two decades (Tienda & Alon, 2007; Tienda & Mitchell, 2006). As a predominantly White generation of baby boomers continues to settle into retirement, ensuring that the youth who replace them in the labor market—a significant proportion of whom will be Latino—have the educational credentials to do so constitutes a pressing policy issue (Bowen, Chingos, & McPherson, 2009).

Whether researchers, policymakers, practitioners and even the American public can identify and support the implementation of strategies that increase the educational attainment levels of U.S. Latinos will have implications that ripple through the nation

well into the foreseeable future. Our capacity to invest in the educational futures of Hispanic youth will be critical to ensure that the American Dream is more than just a dream for a growing proportion of the nation's population. Yet such investments will also be essential to preserving and enhancing the vitality of the nation's economy and global competitiveness. However, to be effective, any policy efforts will first require a more complete understanding of the factors that together produce such constraints on postsecondary access and completion among Hispanic youth that they have fallen further and further behind their White counterparts in bachelor's degree attainment.

Acknowledging the need to fill in pieces currently missing from the puzzle of Hispanic college degree attainment (Tienda, 2011), the findings from this study offer several unique contributions to the existing knowledge base about the Latino college choice and enrollment process. In this final chapter, I begin by summarizing key findings from this research before turning to the implications of these findings for education policy and practice. Finally, I offer suggestions for future research that might illuminate and build upon the results encountered here.

Summary of Findings

Student Alignment: Expectations, Actions, and Making the Match

Alon, Domina, and Tienda (2010) examined two frequently hypothesized reasons for the differential patterns of postsecondary enrollment and attainment among Latino youth—namely, parent human capital and parent country of birth—and found that group-level differences in parent education and nativity only partly explained the gap in college enrollment among Latinos and Whites. Less clear were the mechanisms that were

operating to hinder the transfer of such resources from parent to child. This research offers a unique contribution to the existing knowledge base about postsecondary transitions among Latino youth through the investigation of a previously unexplored mechanism—the degree of alignment between high school students' postsecondary expectations and their actions taken during high school toward fulfilling those ambitions.

The results clearly demonstrated that the extent to which students with high postsecondary expectations prepare during high school to realize their goals by maintaining good grades, enrolling in certain courses, taking entrance exams and submitting college applications can have a marked influence on the level at which they enroll in college. This was true regardless of whether the student was White or Latino, and irrespective of nativity status among Latino youth.

However, even after a standard deviation increase in alignment, the predicted probabilities of enrollment among Latino youth still reflected the fact that the average Latino student in the U.S. is more likely than his or her White counterpart to begin the pursuit of a bachelor's degree at the community college level. This pattern suggests that while aligning one's college expectations and preparation may be a *necessary* precursor to enrollment in a four-year college upon high school graduation, alignment alone is not *sufficient*. As prior research has suggested, other factors such as the desire to remain in close proximity to family, the need to work while in school, or a greater sense of familiarity with two-year colleges through family and friends who have attended such institutions also influence the decisions Hispanic students make about where to enroll in

college (Desmond & Lopez Turley, 2009; Gonzalez, Stoner, & Jovel, 2003; Pérez & McDonough, 2008; Person & Rosenbaum, 2010).

When comparing generations of Hispanic students, although an increase in alignment had a strong positive influence on the likelihood of enrolling in a four-year institution, the predicted probabilities of enrollment at each level differed rather substantially depending on student nativity status. These differences reflected cross-generation differences in the characteristics of the average student in each generation cohort, as well as differences in the availability and usefulness of resources possessed by their parents. Consistent with other work documenting what Kasinitz and colleagues (2008) have referred to as a "second generation advantage"—or the pattern characterized by more successful economic, educational, and social outcomes among the children of immigrants relative to their immigrant peers followed by stagnant or downward mobility in subsequent generations—second generation Hispanic students in this sample demonstrated higher levels of both observed and predicted levels of alignment and enrollment relative to the other two generation groups (Kao & Tienda, 1998; Kasinitz et al., 2008; Portes & Rumbaut, 2001; Telles & Ortiz, 2008).

Parent Resources, Student Alignment, and College Enrollment: Capital Gains?

Recognizing that sociological notions such as social capital may be especially relevant to understanding differences across groups in college enrollment decisions that remain unaccounted for by human capital investment models (Perna, 2006), this research also explored whether student alignment mediates the associations among parents' human, economic *and* social capital resources, on the one hand, and college enrollment,

on the other. The exploration of whether and how associations among parent resources, student alignment, and student college enrollment vary between Latino and non-Latino White students, as well as within the Latino student population across generations, is another distinctive characteristic of this study.

The findings suggested that there are meaningful differences both *between* Latino and non-Latino White students, as well as *within* the Latino youth population across generations, with respect to the availability and convertibility of various types of parent capital into higher levels of student alignment and college enrollment.

Particularly striking was the fact that all forms of parent social capital were more fungible with respect to expectation-action alignment and, indirectly, college enrollment among White students than among Latino students. This finding lends some support to the conclusion drawn by Goyette and Conchas (2002) that when it comes to certain academic outcomes, extrafamilial forms of social capital may be more critical for minority and immigrant youth than the social capital available within the family. While information about schools and how they work, about effective teachers, and about how to apply to college and obtain financial aid are all examples of information essential to successful student outcomes, these forms of rather specialized information are not easy to obtain (Kao, 2004). While most middle class and affluent White parents come to the process of college planning with an earlier start and a "home advantage" in terms of economic and educational resources, as well as numerous social ties to other parents who also understand how to successfully navigate the U.S. education system, many parents of Latino youth do not have access to these same advantages (Auerbach, 2004; Hossler et

al., 1999; Kim & Schneider, 2005; Lareau, 1989; McDonough, 1997; Useem, 1991; Yonezawa, 1997). This is not to say that the critical role of family in the Latino college choice process should be discounted, indeed numerous scholars have documented the positive influence of family and the crucial support they can provide during the Latino college choice process (Ceja, 2004; Gándara, 1995; Pérez, 1999). Rather, this pattern may simply reflect the fact that Hispanic students and their parents tend to be more likely than some other groups to be situated in networks and relationships that are limited in exposure to institutions of higher education and that may lack complete and accurate information about the college choice process (Pérez & McDonough, 2008).

Within the Latino student sample, there was evidence that parent access to each of the three forms of social capital increased across student generations, although the differences were relatively small. Moreover, while the sign and significance of the influences exerted by various forms of parent social capital varied across student generation, structural invariance testing did not indicate cross-generation differences in the magnitudes of the associations between various forms of parent social capital and either alignment or enrollment.

Turning to parents' economic and human capital assets, parents of White youth had significantly higher income and educational attainment levels, on average, relative to parents of Hispanic youth, although parent income and education were equally as useful across the two groups. Nonetheless, insofar as larger stocks of parental economic assets during a child's upbringing are strongly related to the number of years of schooling he or she completes (Axinn, Duncan, and Thornton, 1997), it would be a mistake to overlook

the fact that parents cannot make use of resources that are not available. While the income of Hispanic parents may be just as useful as that of White parents when it comes to promoting higher levels of student alignment and college enrollment, it would be hard to argue that the substantially lower level of income available within the average Hispanic family is irrelevant to the Hispanic college puzzle. To wit, more Latino youth are currently living in poverty than children of any other racial or ethnic group (Pew Hispanic Center, 2011).

Cross-generational analyses among Latino youth revealed significant differences in parents' overall levels of income and educational attainment with each passing generation. Parents of third-plus generation students earned more, on average, than parents of second-generation youth, whose income was in turn higher than the average earnings of parents of immigrant youth. Further, among third-plus generation Hispanic youth, the influence of parent income was strong enough to offer an enrollment boost, although this impact was direct rather than operating through an impact on alignment.

Compared to immigrant parents, a group which includes parents of both immigrant and second generation youth, the U.S.-born parents of Latino adolescents had also completed more years of schooling. Looking specifically at students with at least one parent who had earned a bachelor's degree, among first generation youth having a parent with a bachelor's or advanced degree had a marked *direct* impact on college enrollment. Among their third-plus generation peers the significant positive impact of higher levels of parent education was *indirect* via an influence on alignment.

Overall, the results of this research indicate that when high school students have high expectations and also carry out the sequence of steps that provides them with the greatest chance of fulfilling their goals, their aligned ambitions can move them some distance across the field during the "college admissions game" (Moll, 1978, 1979). Additionally, the assets of various kind and form available to parents can facilitate higher levels of alignment among their offspring and for some youth these resources can potentially help them to "score" enrollment at a four-year institution. Nonetheless, students and parents do not go about preparing for college as free agents. As individuals, they interact with friends, family, teachers, neighbors, and countless others throughout the process of planning for college. These personal interactions unfold across numerous and overlapping institutional and societal contexts, including but not limited to schools, neighborhoods, and communities, which are in turn nested within state, national, and even global domains.

In 1978, Richard Moll, then director of admissions at Vassar College, characterized the college admissions game as one played among a select group of students competing for admission to the nation's most prestigious colleges and universities. I would argue, however, that *all* of the students who graduate from U.S. high schools each spring with the hope that in a few more years they will walk off another stage with a four-year degree in hand, are involved in an admissions game. To be sure, students may be differentiated by the level and selectivity of the institution at which they intend to initially enroll. Yet, these very differences are prefigured by the dynamic and complex ways in which individual and structural influences interact across time and place

such that when we compare students, both within and among racial/ethnic groups, whether we are interested in access to resources, levels of alignment or college enrollment, we observe consequential variation.

Structure, Culture, and the Hispanic College Puzzle.

There is a vast history of research that attempts to understand and explain why ethnicity and race appear to share opposite associations with the same outcomes across different groups. Min Zhou and Susan Kim (2006) describe how most of these investigations have drawn upon either a cultural or a structural argument to explain group-level differences across race and ethnicity.¹⁰¹ In their attempt to explain the higher achievement and attainment levels experienced, on average, by Asian immigrant children in the United States Zhou and Kim, on the other hand, offer a hybrid framework that draws on *both* cultural *and* structural arguments. To do so, the authors focus on the ethnic community as a particular site in which culture and structure interact. By ethnic community the authors are referring not to a neighborhood enclave nor to "geographically unbound ethnicity in the abstract" but rather to "a common cultural heritage along with a set of shared values, beliefs, behavioral standards, and coping strategies with which group members are generally identified" (p. 5). This definition reflects what Ogbu referred to as "community forces" (Fordham & Ogbu, 1986; Ogbu, 1974; Ogbu & Simon, 1998). However Zhou and Kim add to this definition the various economic, civic, sociocultural, and religious organizations, and the interpersonal networks they give rise to, that are embedded within an ethnic community.

Zhou and Kim (2006) contend that intangible community forces and stocks of social capital must be backed by tangible ethnic social structures in order to bring in to being those resources that can promote upward social mobility. In support of this position, findings from their research examining the specific ethnic structures of language schools and afterschool establishments within Chinese and Korean immigrant communities in Los Angeles suggest that the maintenance of community forces that value education and engender the formation of educationally relevant social capital require strong local ethnic structures.

Yet, as these two scholars acknowledge, the strength of local structures depends on broader structural factors such as immigration selectivity, overall premigration socioeconomic status of the group, and the reception of the host society (Zhou & Kim, 2006). While the cases of Chinese and Korean immigrants and their descendants can be characterized, on the whole, by high immigrant selectivity, relatively advantageous levels of socioeconomic status, and a generally positive context of reception, Zhou and Kim noted that the experience of Latino families, even those sharing the same neighborhood in Koreatown with Korean families, is strikingly different. In addition to a relatively negative context of reception (Chavez, 2008; Lopez & Stanton-Salazar, 2001) and despite a strong ethnic community and ample, if underacknowledged, reserves of "community cultural wealth" (Yosso, 2005), the U.S. Latino population attempts to realize upward educational, economic, and social mobility while drawing on markedly lower levels of socioeconomic resources.

At the same time, there is reason for hope, as Burciaga et al. (2009) note in their discussion of research highlighting the resilience of the U.S. Latino population in the face of formidable social and economic obstacles. From Hayes-Bautista's (2004) documentation of the ways in which Latinos can contribute to a prosperous future for California to Yosso's (2005) framework of delineating the various resources that minority students bring with them to educational settings, and from Gándara's (1979, 1995) work highlighting the individual family resources that Chicanos have used to persist in educational settings to Delgado-Gaitan's (2001) illumination of the ways in which Latino parents in a small California community mobilized to address, and ultimately change, school district policies and practices, there are reasons to be hopeful about the future of Hispanics in the United States.

Nonetheless, findings from this research seem to hint at the fact that, without changes in policy targeting broader and local social structures that currently constrain the access that a wide swath of the U.S. Hispanic population has to adequate levels of economic, human, and social capital, Latinos in the United States will be hard pressed to interrupt the process of stymied educational mobility through their individual and cultural strengths alone.

Implications of this Research for Policy and Practice

In their study of Mexican Americans in both Los Angeles and San Antonio, Telles and Ortiz (2008) found that education was the only measure which consistently explained variation in socioeconomic status; years of education had significant and positive effects on occupational status, income, and wealth, even after accounting for a wide variety of

other factors. The authors concluded that the group's low level of educational attainment "thus determines the economic exclusion of many Mexican Americans, a condition which often persists over generations" (p. 156). Yet if the low levels of educational attainment observed within the U.S. Hispanic population lead to low levels of socioeconomic mobility, which in turn predict low levels of educational attainment in the next generation, where can policy and practice interrupt this cycle?

The results of this research suggest that parents of Hispanic youth have lower levels of education and income, on average, than parents of White youth but that they also have fewer social capital resources available. Perhaps just as important, parents of Hispanic students faced greater difficulty in converting their social resources into higher levels of alignment and enrollment among their children. These findings suggest that the efforts of both policymakers and on-the-ground practitioners must address the apparent need of many Latino parents to gain access to social relationships and networks that can offer crucial college-related resources, especially information.

Policy, Practice, and Parent Resources

Anthropologist Leo Chavez (2008) describes a Latino Threat Narrative that depicts Latinos as unlike previous immigrant groups who ultimately became part of the nation. The assumptions, both explicit and implicit, behind this narrative suppose that Latinos are unwilling or incapable of becoming a part of the national community. Chavez contends that by representing Latinos as a threat, this narrative harbors divisiveness across society and serves to undermine the integration of Latinos into U.S. society. More specifically, the narrative suggests that U.S. Hispanics deserve the

obstacles they encounter and also rationalizes public policies targeting Latinos and their children which make it all the more difficult to access prenatal care, quality schools, jobs providing economic mobility, and a path to citizenship for unauthorized residents living and working in the U.S.—particularly the 1.5 generation youth who have grown up and completed all of their schooling in the United States.

While findings from the current research cannot directly inform policies and practices that address all of the axes along which many Latino parents experience constricted resource availability, it would be rather short-sighted to ignore the highly interrelated nature of the various assets in parents' resource portfolios. After all, possessing greater amounts of one kind of capital can often facilitate its investment in and conversion into other types of capital (Bourdieu, 1986). For example, it seems unlikely that the generally low levels of economic capital available to Hispanics in the U.S. as a group do not play a role in their lower observed levels of educational attainment. As Kasinitz et al. (2008) observed, the realization of high expectations takes having good educational options available, timely and accurate information about how to pursue those options, and the resources to do so.

To the extent that one's socioeconomic status is not a function of education or income alone but instead reflects the interplay of the various "capitals" that individuals may possess, the fact that Kasinitz and his fellow authors (2008) were able to trace many of the divergent outcomes observed among immigrant youth in New York City during and after high school back to cumulative patterns of advantage and disadvantage is informative. In addition to varying levels of parent education and income both within and

across immigrant groups, immigrant families also varied widely in their access to information about how to navigate the U.S. system of education. The authors suggested that differential access to information reflected the levels and content of media information as well as co-ethnic family and community connections with individuals who could share personal experiences with educational institutions.

Perhaps most importantly, "[b]eing part of an ethnic community whose networks spanned class boundaries, rather than one that was homogenously poor, clearly constituted a group advantage" (Kasinitz et al., 2008, p. 169). When this finding is juxtaposed with evidence from recent research showing that the highest levels of segregation among Hispanics are often due to income differences (Lukinbeal, Price, & Buell, 2012), the implication is that Latino parents may find it especially difficult to access socioeconomically diverse co-ethnic networks.¹⁰²

Neighborhood resources. One potential policy intervention might capitalize on Zhou and Kim's (2006) suggestion, based on their observation that public schools alone may not be able to ensure the educational success of immigrant children and native minority children, that a wider range of afterschool services in low-income urban areas could help connect students and parents to information and other resources critical to educational success. Zhou and Kim (2006) proposed that one step might include strengthening community-based nonprofit organizations and churches in underresourced neighborhoods through funding and other forms of support so that these institutions could provide afterschool and enrichment programs, including SAT preparation, tutoring, and recreational offerings (Zhou & Kim, 2006).¹⁰³ While providing academic and

informational support to Latino students, community-based after-school centers could also partner with local high schools and area colleges in order to bring college information to students' parents *where they are* instead of expecting parents to surmount the often substantial cultural, linguistic, and logistical barriers required to attend college and financial aid informational events at their child's school (Rowan-Kenyon, Bell, & Perna, 2008). Precisely where funding for such initiatives and practices would come from is difficult to pinpoint, however. Aside from philanthropic and other private funding sources, the 21st Century Community Learning Centers (CCLC) Program is the only federal funding stream exclusively dedicated to providing academic support and enrichment programming during out-of-school hours. While President Barack Obama pledged to double funding to this federal program during his 2008 campaign, since elected his budget proposals have included only marginal increases or, more recently, frozen funding levels for the 21st CCLC program.

Parents, schools, and college knowledge. At the high-school level, through the strategic implementation of practices that are sensitive to parents' needs, schools hold the potential to increase the availability of information, guidance, and hands-on assistance to parents of Hispanic students as they navigate the college choice and enrollment process with their child. However, research has suggested that parent outreach around college at many high schools, which often consists primarily of college and financial-aid nights and newsletters, tends to draw parents from higher socioeconomic backgrounds and parents whose students have higher than average achievement levels (Rowan-Kenyon et al., 2008). While school personnel tend to have clear expectations for parent involvement in

the college choice process, particularly in terms of their attendance at school functions, some parents—including many Latino parents—are unable to meet these expectations due to work obligations, unease with school staff, language differences, and a lack of trust (Gándara, 1995; Rowan-Kenyon et al., 2008; Stanton-Salazar, 1997).

While there is a lack of research examining the effectiveness of specific strategies to involve parents in the process of planning and preparing for college, the findings from the current study and other research suggest that innovative approaches are needed. As noted above, and as Rowan-Kenyon and colleagues state, "taking college-going programming to the community through other organizations such as churches can be effective" (p. 584). Additionally, the combination of college outreach efforts with events that do tend to draw more parents—for example, school sporting activities or events at the elementary school level—may be successful in reaching more parents (Rowan-Kenyon et al., 2008).

Straight from the source. A recent report from the College Board (Lee et al., 2011) also suggests that better use of technology by higher education institutions may offer another avenue for reaching parents, for example by offering college application and admissions information in multiple languages and making this information easy to find on college websites.¹⁰⁴ The authors of this report advised streamlining and simplifying the application process for Hispanic students and their families by offering a consolidated statewide application for all public institutions.

Finally, an example of a practical strategy that bridges secondary and postsecondary levels can be found in the Texas GO Center program. These GO Centers

are located on middle and high school campuses throughout the state and serve as a point of coordination between students, parents, high-school counselors, and institutions of higher education (Lee et al., 2011). The GO Centers also provide students and parents with one-on-one assistance filling out college and financial aid applications.

While decades of social science research have demonstrated that having well-educated parents should lead to successful educational outcomes among children, it is the social capital embedded in the parent-child relationship and multiplied through time spent together, as well as the promotion of activities which promote successful educational outcomes, that facilitates the transfer of human capital from parent to child (Coleman, 1988; Kao, 2004). Access to information about all aspects of college via relationships with school staff, other parents, and community actors can serve as a valuable source of parent human capital, even—or perhaps especially—when parents have little or no personal college experience. The implementation of policies and practices described in this section can help build parent human capital in the form of college knowledge and promote the intergenerational transfer of this invaluable resource via the parent-child relationship.

In the next section, I turn from an explicit focus on parents to implications of this research for policies and practices aimed more directly at students, although, given that planning for and enrolling in college is often a family affair, the recommendations offered here can often benefit both parents and students.

Policy, Practice, Alignment and Enrollment

One of the most striking results encountered in this research was the powerful relationship between the extent to which students with high college goals had engaged in a series of actions known to increase their chances of fulfilling their expectations, on the one hand, and the level of college in which they were enrolled about two years after high school completion, on the other. In light of this almost inextricable link between the two—after all, if a student demonstrates a great degree of alignment, she is highly likely to enroll in a four-year college and, alternatively, it will be hard for a student to get to a four-year college if he hasn't aligned his actions with his expectations—in this section I address policies and practices that might be more closely connected to either alignment or enrollment but will almost certainly impact both. To do so, it is necessary to start by returning to the beginning of students' educational careers.

Getting an early start. When we think about improving postsecondary attainment via greater levels of aligned actions among Hispanic youth, it is necessary to recall that the college "pipeline" starts many years before students reach high school. In order to more fully comprehend, and more adequately address, average differences in levels of educational attainment among Latino and White students, Malcom's (1990) call to return to the "headwaters" of students' schooling experiences seems as relevant to the work of practitioners, policymakers, and researchers today as it did over two decades ago (Burciaga, Huber, & Solorzano, 2009).

In a recent College Board report addressing college completion among Latino students, Lee et al. (2011) echoed what numerous others have concluded—that the

benefits of preschool education on achievement and other educational outcomes continue beyond the school years and can be especially impactful among Hispanic children (Bassok, 2010; Belfield, 2007; Crosnoe, 2006; Loeb et al., 2007; Ream, Ryan, & Espinoza, 2012). However, data from national surveys dating back some three decades reveal that Latino children have been and continue to be less likely than their Black and White counterparts to attend preschool (Fuller & Kim, 2007). Recent data demonstrates that while 53 % of four-year-old Latino children were enrolled in preschool in 2005, this share trailed a substantial distance behind Black (69 %) and non-Latino White (70 %) four-year-olds (Fuller & Kim, 2011). Further, while preschool participation rates remained consistent for the latter two groups between 2005 and 2009, the Latino preschool participation rate had dropped to 48 %.

Many of the reasons that a majority of young Hispanic children do not attend preschool are related to the numerous structural barriers faced by their parents. In addition to family poverty and language barriers, many Hispanic families reside in areas where there is a lack of high-quality and affordable programs. First and foremost, therefore, the most important starting point for state and federal policy interventions related to early learning is to ensure equitable access to preschool programs. Given that one of the greatest challenges at the local level is often striking a balance between the construction costs associated with building facilities and the programmatic costs of providing high-quality preschool services, state education officials and policymakers should set aside capital subsidy funds specifically for communities with little access to early childhood programming (Lee et al., 2011). State-level officials also can play an

important role in ensuring that the preschool programs available to Hispanic children are of high quality, which entails the provision of well-trained staff, adequate instructional materials, and also linguistically and culturally relevant provisions such as bilingual personnel and meaningful opportunities for family engagement. These changes might occur through funding requirements as well as through professional development partnerships with state institutions of higher education (Lee et al., 2011).

Charting the course(s). Understanding the underrepresentation of Latino students in higher education, especially at four-year institutions, also requires that attention be paid to their experiences in both elementary and secondary education. The cumulative effects of inadequate preparation, beginning with a lack of access to preschool programs and continuing through high school, forcefully impacts Hispanic students' ultimate rates of college enrollment and attainment (Solorzano & Solorzano, 1995; Solorzano, Villalpando, & Oseguera, 2005). Comparatively lower outcomes among Latinos as measured by state and national standardized tests scores, high school graduation rates, and rates of transition to college all directly reflect early disparities in achievement and school readiness (Lee et al., 2011; Gándara & Contreras, 2009).

Not only do Latino youth need better information about college in order to align their college-going actions with their college expectations, but they also need access to better academic preparation for college, and this preparation must begin early on and continue through the high school years. Inasmuch as participation in a college-going curriculum not only prepares students academically but also promotes and nurtures high educational expectations, uneven access to college-preparatory courses during high

school (and even middle school), particularly in the schools Latinos are most likely to attend, undoubtedly contributes to their lower levels of alignment (Contreras, 2005; Gándara & Contreras, 2009).

Research evidence suggests that as many as 70 % of Latino students are enrolled in classes that will not get them ready for college (Calderón, Slavin, & Sánchez, 2011; Ginorio & Huston, 2001; Gonzalez et al., 2003).¹⁰⁵ Findings from survey research conducted with over 8,000 high school juniors and seniors from nine large, urban high schools in the Los Angeles area suggested that by the end of high school, many respondents found themselves ineligible for admissions to a four-year college because they had not been placed into the requisite college preparatory courses they needed in order to be admitted (De La Rosa & Tierney, 2006).

Recently, most states have moved toward the adoption of Common Core State Standards (CCSS), a step which would result in over 80 % of U.S. students receiving instruction under the same college- and career-readiness standards (Lee et al., 2011). However state and local policymakers must ensure that *all* students, especially Latino students, are able to reach these standards. The National Council of La Raza (NCLR) has created a toolkit that Latino parent and community groups can use to advocate for CCSS implementation strategies that will actually improve the educational experiences and outcomes of Hispanic youth. The NCLR identifies several specific elements that policymakers and practitioners alike must address.

First, Hispanic students need to be able to sit in classrooms each day where they have access to well-trained teachers who can facilitate the development of academic

language skills while providing access to rigorous content. In addition, student learning should be evaluated using assessments that accurately reflect students' acquisition of content and, further, appropriate test accommodations should be used for students who are still in the process of becoming fully English proficient. Finally, it is critical that parents have access to academic and college readiness standards as well as information about the extent to which their child's school is effectively helping all students reach those standards. This information should be provided in clear and unambiguous language and in both Spanish and English.

Another initiative that is gaining momentum at the state level is the development of individual learning plans, also referred to as career maps, for each student.

Nationwide, about half of all states now require students to develop these career-focused "roadmaps" during middle and high school (Rennie Center, 2011). Most often, students begin their plans, ideally in conjunction with a teacher or counselor and their parents, following a career exploration unit during middle school. After identifying careers in which they are interested, and the education required for those careers, students begin mapping out the courses they will need to take during high school. This planning is usually done online using one of numerous ready-made interactive software tools or using customized programs developed at the state or district level (Rennie Center, 2011).

Results of research on the effectiveness of student learning plans indicate that these plans can improve student motivation and engagement as well as students' understanding of their postsecondary options and the necessity of making long-range plans for meeting their college goals (Gibson & Clarke, 2000; NASSP, 2004; Solberg,

Gresham, & Huang, 2010; Welsh, 2005). Further, several studies have shown that students, parents and educators all reported that student learning plans promoted the engagement of parents in their children's academic and career planning as well as more frequent and in-depth communication between students and parents, and between parents and educators (Budge et al., 2010; Clarke, DiMartino, & Wolk, 2003; Gibson & Clarke, 2000; Solberg et al., 2010).

One critical element of effective implementation that arose across studies was the engagement and interest of the teacher or mentor charged with facilitating the planning process. Students and parents reported that the quality of the planning experience depended on teacher/mentor engagement and on whether there were regular opportunities to check in with that person to reflect on and revise the student's plan (Heidrich Center for Workforce Development, 2010; Solberg et al., 2011). Yet counselors and teachers already have a lot of duties, particularly in districts where there have been deep budget (and often staffing) cuts. Therefore, while student learning plans seem to offer great potential, without careful attention to implementation—including the importance of supportive relationships—the practice could also become one more task among many that school staff must take on and one more thing that Hispanic students and their families have to navigate on their own.

Counseling as catalyst. Prior research documents two mechanisms via which differential access to advising, information, and college-going norms may play a role in the observed disparities across racial/ethnic and socioeconomic groups in four-year college enrollment. Differences in the availability of college guidance and information

may influence 1) whether students take the steps necessary to apply to and enroll in a four-year college as well as 2) whether students engage in an expanded college search process rather than constraining their college choice set (Roderick et al., 2011).

As pertains to youth's future educational prospects, Simmons (2011) asserts that policymakers have overlooked the reform of the college counseling function in U.S. public schools as a critical mechanism via which to address the limited access to college-relevant social capital experienced by low-income, minority, and first-generation college students. Simmons (2011) suggests that policy makers must ask themselves what sort of a return they can expect on investments in PreK-12 education, exhaustive testing schemes, and college readiness standards if students ultimately enroll in less selective institutions or simply forego higher education altogether. If policymakers do not also invest in the construction of a bridge between high school and college, they leave vulnerable students unable to convert their high expectations, and often their high achievement, into college enrollment. Given its importance as a catalyst for securing other valuable resources, as well as for converting resources already possessed into desired outcomes, social capital can function much like the trestles of a bridge connecting students to the specialized information and support they need to meet their college goals.

One of the most critical steps that must be taken in order to increase alignment levels among Latino students is to greatly improve college counseling at both the middle and high school levels. McDonough and Calderone (2006) describe five primary ways through which high school counselors impact the college preparation and advising process. These include structuring information and activities that promote college-going

aspirations, assisting parents in understanding the college preparation process in order to support their child, assisting students in becoming academically prepared for college, supporting and influencing students' college decision-making process, and focusing the school as an institution on its "college mission" (Hossler, Schmidt, & Vesper, 1999; McDonough, 2005).

Despite the critical nature of each of these tasks, however, the duties which typically consume the majority of public school counselors' time include testing, scheduling, discipline, risk prevention, and crisis counseling. In addition, high school counselors often carry inordinately high case loads, with some statewide averages nearing 1,000:1. Such extremely high caseloads are significantly more common in schools serving large numbers of poor students of color (McDonough, 2005). In comparison, in many private schools, which are often centered around a more explicit college preparatory mission, the availability of school counselors whose sole responsibility is college advising is a regular occurrence (McDonough, 2005). While most private high schools have counselors dedicated to advising and supporting students and parents in thinking about and planning for college, this is not the case in most public U.S. high schools—particularly in the under-resourced, high-minority, and high-poverty schools attended by a substantial proportion of Latino youth.

Examples of federal legislative proposals and programs aimed at improving college access through improved access to college counseling among historically underserved populations exist, although several promising efforts have currently hit a dead-end in Congress. The "Pathways to College Act" was introduced by Senator

Richard Durbin (D-IL) in 2008 and aimed to increase the capacity of high school counselors, through extra funds and professional development at the state level, to provide students and parents with more comprehensive information and assistance throughout all aspects of preparing for college (Simmons, 2011). This bill, which was co-sponsored by Republican Senator Richard Burr of North Carolina, has been introduced in the past two Congressional sessions but has failed to make it out of committee.

Another example of federal legislative efforts targeting low and middle-income students is the "Coaching our Adolescents to College Heights Act" (COACH Act). This proposal, introduced in 2008 by then U.S. Senator Hillary Rodham Clinton, was intended to augment the counseling capacity of high schools by placing recent college graduates in under-resourced schools in order to help address knowledge gaps among high-achieving and college-eligible students about the college admissions and financial aid process. Congress did not pass the COACH Act, although the model has been implemented with some success in 14 states through the non-profit National College Advising Corps (Simmons, 2011).

An additional and well-known program focused on the preparation of low-income and minority students for college is the Advancement Via Individual Determination (AVID) program. The AVID program operates in 4,000 schools nationwide, as well as in fifteen foreign countries (Haskins & Kemple, 2009). The program is facilitated primarily through a regular school elective, often during the middle school and high school years, which meets for an hour each school day. There are also "enrichment" meetings outside of regular school hours at least once a week. Rather than the school counselor, the AVID

course is taught by a classroom teacher who has gone through the AVID training. The AVID teacher helps students learn college study skills such as time-management and test-preparation strategies as well as how to read textbooks and take lecture notes.

Research on AVID's impact on high school students and graduates has demonstrated that the skills and strategies learned in AVID help improve student transitions to college (Lozano, Watt, & Huerta, 2009; Watt, Johnston, Huerta, Mendiola, & Alkan, 2008). Although a two-year evaluation of selected AVID schools offered mixed results about middle school implementation, the findings did reveal that AVID students spent more time on homework, enrolled in eighth grade algebra at higher rates, and had more concrete college plans relative to the comparison groups (Black, Little, McCoach, Purcell, & Siegle, 2008). Further, the results of a recent study also found that AVID appears to be of benefit for Hispanic students who do enroll in college (Mendiola, Watt, & Huerta, 2010).

Particularly relevant to the current research, Ream (2005) describes the unique potential AVID offers for tapping the resources that inhere in parents' and students' social networks. The AVID program recognizes that parents of minority students often hold high expectations that their child will enroll in college but may be unsure of how to best help their offspring attain their college goals. Thus, successful AVID schools use the formal structure of the program to encourage parent involvement and engagement through the development of trusting and reciprocal relations between parents and schools (Ream, 2005).

Protecting the (school) environment. Roderick, Coca, and Nagaoka (2011) observe that two recent evaluations of policies targeting increased access to the top U.S. colleges among low-income and minority youth have reached remarkably similar conclusions with respect to the importance of the high school context. Specifically, the high school conditions whether low-income students qualified to attend college are actually able to respond to new policy initiatives (Avery et al., 2006; Koffman & Tienda, 2008). These findings substantiate earlier research demonstrating strong associations between the college-going tradition of a high school and 1) the likelihood that its students would apply to and enroll in college and 2) the quality or selectivity of the college that its students would attend (Alexander & Eckland, 1977; Manski & Wise, 1983).

Nonetheless, in contrast to research demonstrating the influence that characteristics of a student's high school may have on his or her college-going behavior, recent policy discussions around expanding college access have revolved around two main explanations for the underenrollment of low-income and minority youth in four-year institutions (Roderick et al., 2011). It is presumed that 1) the poor academic performance and preparation of low-income and minority youth as well as 2) the combination of rising college costs with the decreasing real value of financial aid explain why more of these students are not enrolling in four-year institutions (Roderick et al, 2001; Advisory Committee on Student Financial Assistance, 2006; U.S. Department of Education, 2006).

Roderick et al. (2011) assert that these policy conversations are based on the assumption that less-advantaged students have access to all the information and

assistance they need to respond to new opportunities created via policy initiatives and that if they were only more qualified they would then be able to use these assumed resources to steer themselves through the college choice process and ultimately enroll in four-year colleges. Roderick and colleagues counter this assumption, stating (p. 179),

The potential importance of high school effects, however, suggests that the extent to which students have access to supports and norms for college within their high schools may shape the efficacy of new policy initiatives and, ultimately, whether efforts to increase college access reach those students who are the intended beneficiaries.

While there is not a consensus in the research literature about what it means for high schools to offer sufficient supports that promote college access (Roderick et al., 2011), the results of several investigations focusing on the concrete practices employed within U.S. high schools offer useful directions for practice. Hill (2008) analyzed school administrator surveys from the *NELS* dataset using latent class analysis and was able to characterize three types of college-promoting strategies utilized by high schools.

Traditional high schools helped student fill out applications and encouraged them to make college campus visits but provided little parent outreach. Clearinghouse high schools provided an even greater level of resources and direct support to students and were more connected with college representatives, but like traditional high schools, clearinghouse schools offered limited parent outreach. Brokering schools, on the other hand, shared all of the traits of traditional and clearinghouse schools but also engaged in considerable parent outreach. Students attending brokering schools were more likely to

enroll in any college as well as to enroll in a four-year versus a two-year college.

However, brokering schools were less likely to serve low income and minority youth (Hill, 2008).

Further, drawing on the social trust literature, which has demonstrated strong associations between measures of relational trust within the school community and school improvement and student learning gains (Bryk & Schneider, 2002), Schneider (2007) also contends that effective college-promoting practices must be embedded in a school context in which educators, students, and parents, through a system of shared social relationships and values, establish and consistently reinforce norms for college attendance. Over time, students must develop an understanding of what college participation means, what preparing for college involves, and what specific steps must be taken in order to apply to and enroll in college—in other words, they need "college knowledge" (Conley, 2007). From the perspective of scholars such as Schneider (2007) and Conley (2007), the set of actions that high schools use to encourage college attendance must be woven into the academic program and not simply assigned to the counseling department (Roderick et al., 2011).

The conclusions drawn by Schneider find substantiation in the research findings of Roderick and colleagues (2011), who concluded that students were more likely to plan to attend, apply to, and enroll in four-year colleges when teachers in the schools expected students to go to college and assumed shared responsibility in preparing and supporting their students through the college choice and enrollment process. The researchers saw this as evidence that a potentially critical role of urban high schools is to bridge the

college-relevant social capital gap among low-income and minority youth. It is cause for concern, then, that in their work on the detrimental effects of the disconnect between the nation's K-12 education system and its postsecondary system, Venezia and colleagues (2003) demonstrated that many students and their parents, as well as *educators*, are quite confused or misinformed about how students should prepare for college.

McDonnell and Elmore (1987) describe capacity-building policy instruments as those involving investments in the knowledge, skills, and competence of individuals that are required to produce a future value based on the assumption that the capacity to do so does not currently exist. Whether schools are actually able to infuse the school environment with widely-held expectations of student success and college-going behavior will likely depend on the ability of state policymakers, district officials, and school leaders to build the capacity of all school staff, not only counselors, to help all students identify their future goals and then to support students and their families as they map out the courses and other steps required to realize postsecondary goals.

Implications of this Research for Future Inquiry

While answering some questions about differences in the college choice and enrollment process between Hispanic and White youth, this investigation also draws attention to the need for further research in several areas.

College Choice: It's a Family Affair

Familial social networks and college knowledge. Navigating pathways to college is a critical concern for Latino families (Auerbach, 2004). Latino students remain underrepresented in four-year colleges and universities and are often disproportionately

impacted by rising costs and competition in admissions as well as drastic reductions in grant-based aid. Combined with a lack of institutional supports such as access to adequate postsecondary counseling, particularly in schools serving high proportions of students of color and students from lower-SES backgrounds, Auerbach concludes that “the burden of college planning has fallen increasingly on Latino students and their families on an uneven playing field” (p. 126). This makes all the more concerning work by Gándara (1998, 2002) demonstrating that the single most important obstacle to college access for Latino students is a lack of instrumental knowledge about the sequence of actions necessary to make enrollment in a four-year institution an accessible reality. The era of rapid technological advances in which we live means that individuals have arguably never before had more opportunities to connect with one another or had greater access to information, making the fact that Latino students and their families continue to experience this "information gap" especially disconcerting.

Other research in this same vein suggests that some low-income and minority youth look primarily to their own friendship and family networks for college advice and information but that such social support ties, while offering valuable encouragement and support, may only have limited access to up-to-date college information (Hearn, 1997; De La Rosa, 2006; Kim & Schneider, 2005; Pérez & McDonough, 2008; Person & Rosenbaum, 2006). However, acknowledging differential access to college information across racial and ethnic groups should not be construed as an endorsement of deficit thinking, which points to poor and minority students as the cause of poor academic performance because they come to school lacking the appropriate knowledge and skills

and because their parents do not value and support the child's education. Unfortunately, this deficit-based perspective is woven through U.S. society (Garcia and Guerra, 2004) and neither schools nor the people who work in schools are completely unaffected by this normative framework. Recent research suggesting that Latino students in particular are more likely to rely upon family and friends for information about college and to cite these ties as their main reason for enrolling in a particular institution (Person & Rosenbaum, 2006), actually makes the role of the family one of critical importance in the Latino college choice process (Pérez & McDonough, 2008) rather than one that should be discouraged. In contradiction to more deficit-based perspectives, numerous scholars have documented the positive influence of family in the Latino college choice process (Ceja, 2004; Gándara, 1995; Pérez, 1999) and the crucial social support provided by family. Yet there is a continuing need for research that helps us to understand how, when, and through which resourceful adults, kin or otherwise, Latino students and their families can (or cannot) gain access to new information about getting into and getting through college.

Parent resources: Beyond income. Jez (2008), drawing on Oliver and Shapiro (2006), notes that there are benefits associated with wealth that are not guaranteed by income. Oliver and Shapiro (2006) recognize that wealth sometimes "bails families out of financial and personal crises, but more often it is used to create opportunities, secure a desired stature and standard of living, or pass along a class status already obtained to a new generation" (p.175). The results of one investigation that explored the relationship between wealth and college participation suggest that parental wealth exerts a strong influence on postsecondary access and may also impact college completion (Conley,

2001). The author encountered wealth effects that were distinct from the impact of income, providing evidence that family income may be an inadequate proxy for the full array of economic resources that parents can employ in supporting their child's postsecondary goals (Conley, 2001). In a similar vein, Axinn and colleagues (1997) found that larger stocks of parental assets during the childhoods of their offspring were significantly related to the number of years of schooling those children completed by age 23.

Of the potentially powerful rewards that may accrue to youth due to family wealth, the social-psychological returns over the course of childhood in the form of a child's sense of security and future aspirations may be especially valuable in terms of college choice and enrollment (Ream, Ryan, & Espinoza, 2012). To wit, some have argued that for more privileged students, choosing to enroll in and complete college is not really a choice at all. Rather than a conscious choice, college enrollment is simply a taken for granted consequence of the fact that the attainment of advanced education has been expected of them at least since birth (Grodsky & Riegle-Crumb, 2010; Reisel, 2011). The "choice" to not do so becomes almost unimaginable (Grodsky & Riegle-Crumb, 2010).

While all of the students in this research had expectations of completing a bachelor's degree, it may be that Latino and White students still differ, on average, in their perceived chances of success at two- versus four-year institutions in ways that lead them to take different steps to prepare for college. It is possible that such differences may be at least partially attributable to variation in the social-psychological and other forms of returns to family wealth. The Pew Hispanic Center reported in 2005 that for every dollar

in wealth owned by white households, Hispanic households owned less than 10 cents. Yet, as Jez (2008) notes, almost all of the research on the intersections between race and wealth has had a focus limited almost exclusively to disparities between Black and White individuals. The relationship between family wealth and students' college-going behavior remains an underexplored area in higher education research, yet this is a line of inquiry that may yield important clues about some of the reasons behind persistent four-year enrollment and attainment disparities between Hispanic and White youth. However, in order for this research agenda to be possible, data access and collection strategies will need to change in ways that allow researchers to make use of data on wealth.

The intersection between college ambitions and familism. Desmond and Lopez Turley (2009) describe the ways in which scholars across a number of disciplines have recognized familism, which they define as "a social pattern whereby individual interests, decisions, and actions are conditioned by a network of relatives thought in many ways to take priority over the individual" (p. 314), as an important element of Hispanic culture. A number of researchers have specifically explored how familism is related to educational outcomes, and many have encountered positive associations. The evidence of the beneficial effects of familism has ranged from positive psychological effects (Suárez-Orozco & Suárez-Orozco, 1995) to buffering many of the challenges associated with minority status (Zhou & Bankston, 1998). Scholars employing social capital theory have also found that Mexican American students who perform at higher levels benefit from the social capital that is available to them via family and peer networks (Ream, 2005; Stanton-Salazar & Dornbusch, 1995). Valenzuela and Dornbusch found evidence that the

relationship between familism and achievement may be contingent upon the number of years of education completed by the parent.

Still, some research has pointed to some of the potential pitfalls associated with deeply felt familial ties and obligations among Hispanic youth (see for example Brooks-Gunn & Markman, 2005; Portes & Landolt, 1996; Ream, 2003). Portes (1998) points out that dense family networks can be populated by relatives who place heavy demands upon each other, and particularly upon more talented and resourced members of the family, potentially dampening or deterring the educational goals of talented youth or placing unique constraints on their educational trajectories.

In a recent study using students' reported preferences to remain at home while attending college as a proxy for his or her sense of familism, Hispanic students were the most likely to state that living at home during college was important, even after accounting for their parents' level of education and other sociodemographic factors (Desmond and Lopez Turley, 2009). The authors suggested that the deep family ties of many Hispanic youth may make them reluctant to physically separate from such networks in order to attend college. Therefore, while it is not yet clear exactly how and under what conditions an individual's sense of familism affects the educational performance and attainment of Hispanic youth, there is a clear need for further research addressing these questions. In the context of this research, it is possible, for example, that the demonstrated preference of many Hispanic students to live at home during college influences a student's level of alignment and/or influences his or her level of enrollment independently of alignment. It is also conceivable that these associations differ across

student nativity status such that more fully assimilated Hispanic youth place less importance on remaining at home during college (Desmond & Lopez Turley, 2009).

Getting Aligned and Getting to College: It's Also a School Affair

Structured agency. An important limitation of the current research is that the school and community environments in which students are situated are not accounted for. Roderick, Coca, and Nagaoka (2011) observe that two recent evaluations of policies targeting increased access to the top U.S. colleges among low-income and minority youth reached largely similar conclusions identify the important influence the high school a student attends has on his or her access to college. Specifically, certain characteristics of the high school a student attends condition the extent to which low-income students who are qualified to attend more selective colleges are actually able to respond to new policy initiatives (Avery et al., 2006; Koffman & Tienda, 2008). Substantiating this finding, Nuñez and Kim (2012) observed that the school's structural context influences four-year enrollment rates among Latinos, evidenced in the fact that attending lower-SES schools and schools with high absenteeism negatively impacted four-year enrollment rates. These findings support the conclusions of earlier research demonstrating strong associations between the college-going tradition of a high school and 1) the likelihood that its students will apply to and enroll in college and 2) the quality or selectivity of the college that its students will ultimately attend (Alexander & Eckland, 1977; Manski & Wise, 1983).

The relative strength of individual and family factors, as compared with the influence of schools or broader contextual forces, in predicting college enrollment among Latino high school students has been demonstrated in this and other quantitative research

using the *ELS:2002* data (Nuñez & Kim, 2012; Engberg & Wolniak, 2010). On the other hand, qualitative investigations of the Latino college choice process have suggested that school, community, and state contexts do shape the ways in which students and their parents think about college options and how they access and understand college-related information (Perna, Rowan-Kenyon, Thomas, Bell, Anderson, & Li, 2008). In combination, these two sets of findings suggest that both individual and contextual factors play a meaningful role in the Latino college choice process but that there are inherent difficulties associated with identifying precisely which structural variables are associated with postsecondary outcomes, for whom, and under what conditions. The extent to which, and the time periods during which, the schools attended by Latino youth may impact the development of alignment through interactions among students, parents, and institutional agents seems likely to be a particularly fruitful avenue of future inquiry, especially mixed-methods research.

Aligned Ambitions? Check. Now What?

Where can I get a bachelor's degree? Even when Hispanic students have high postsecondary expectations and are at least minimally academically qualified to attend a four-year institution, Hispanic students often begin their postsecondary careers on a lower trajectory (Fry, 2004; Kurlaender, 2006; Swail, Cabrera, Lee, & Williams, 2005). At the same time, however, the overwhelming majority of existing evidence maintains that a student has a significantly higher likelihood of completing a four-year college degree if he or she begins at a four-year, rather than a two-year, institution (Arbona & Nora, 2007; Goldrick-Rab, Pfeffer, & Brand, 2009; Long & Kurlaender, 2009). Yet while 45 % of

White students were enrolled in open-door institutions or community colleges in 2004, over 66 % of Hispanic students were enrolled in these types of institutions, reflecting the fact that Hispanic youth are much more likely to attend community colleges and less selective four-year institutions than are White students (Pew Hispanic Center, 2005). Some scholars contend that initiating the pursuit of a bachelor's degree at a two-year institution is one of the major contributing factors to the lower educational attainment rates of Latinos (Arbona & Nora, 2007; Gándara & Contreras, 2009).

The decision to attend one type of institution over another may have "life-altering, long-term advantages" (Pérez & McDonough, 2008, p. 249). To be sure, debate continues over whether community colleges serve to democratize education, or to divert students (the so called "diversion effect") who would otherwise obtain a bachelor's degree (Cohen, 1988; Brint & Karabel, 1989; Karabel, 1972; Rouse, 1995). The answer matters, particularly for Latino students. There is evidence that some students, including those from low-income backgrounds and first-generation college-goers, consider a limited set of potential colleges. McDonough (1997) contends that many students arrive at a limited college choice set in part because they are not aware of how they might determine a range of available colleges that would provide a good fit with their needs and qualifications. Given that "decoding the Hispanic college puzzle requires consideration of both quantitative and qualitative aspects of postsecondary outcomes" (Alon et al., p. 1811), the type (two-year vs. four-year) and selectivity of the institution into which students matriculate, and the extent to which each may be related to student alignment, merit further consideration.

Getting to college, paying for college. Finally, some research has suggested that perceptions about the cost of college and concerns about their ability to finance a postsecondary education play a central role in the college choice and enrollment process among Latino students (Dowd, 2008; Gándara & Contreras, 2009; Nuñez & Kim, 2012; Bell, Rowan-Kenyon, & Perna, 2009). Further, financial aid is a significant predictor of college completion regardless of race or ethnicity (Lee et al., 2011). At no time could the financial aspects of attending college be more relevant than in the current climate of rising tuition and declining state appropriations for higher education. In 2008, the average total financial aid award among Hispanic students was \$7,900, leaving a total net price (tuition price minus aid) of \$15,100 (Lee et al., 2011). Data from the National Postsecondary Aid Study (NPSAS) indicated that 80 % of Hispanic students applied for financial aid for the 2003-2004 academic year and 63 % were awarded some type of financial support (Nora & Crisp, 2009). Yet, while Hispanic youth were more likely to receive some form of federal aid than all other racial groups combined, they received the lowest average aid of any racial-ethnic group (Nora & Crisp, 2009). At the same time, in a study conducted by the Pew Hispanic Center (2009) the most common reason Hispanic youth gave for not continuing with their education by enrolling in college was the pressure they felt to support their family financially. Whether the financial concerns of Latino youth and their families lead students to prepare for college in ways that are observed as lower levels of alignment is another valuable branch of inquiry relevant to the current research.

Concluding Thoughts

If immigrants are American history (Handlin, 1973), then Hispanic immigrants and their descendants will feature prominently in any yet-to-be-written history of twenty-first century America. Latino individuals already account for half the growth in the U.S. population since 2000, and with a median age that is twelve years younger than their non-Latino White counterparts and a higher average fertility rate, regardless of immigration trends Hispanics will continue to constitute much of the population growth in the United States well into the 21st century, if not beyond (Myers, 2007). If, as a nation, we fail to address the gap in bachelor's degree attainment between Latino and White young adults, a gap which constitutes the largest disparity in educational outcomes between the (shrinking) White majority and the nation's largest (and fastest-growing) minority group, this future seems uncertain. The puzzle of Hispanic bachelor's degree attainment most directly impacts the lives of a growing proportion of America's youth, but it is a puzzle that touches *every* American. For this reason, better understandings of how the college access and persistence experiences of Latinos in the United States unfold relative to other groups, but also relative to one another, are of paramount importance in any efforts to address the 'Latino education crisis' (Gándara & Contreras, 2009).

Findings from this research offer several new insights that can inform efforts to ensure that lower levels of enrollment and attainment at four-year institutions among U.S. Hispanics relative to their non-Hispanic White counterparts might become a "temporary lull" rather than "stymied mobility" (Alon et al., 2010; Tienda, 2011). Alignment can serve much like a bridge on the road to college, such that when students are able to align

their actions with their college expectations and then fully capitalize on that match, they are more likely to follow the most direct route to the eventual completion of a bachelor's degree by enrolling in a four-year institution. Yet, efforts to help Latino youth and their families understand the rules of the road, including how access this bridge, will require that Latino students and their families are able to forge the sorts of social connections that can help them access and make use of information and guidance in deciding whether and where to attend college.

After all, immigration is not only our history but also our destiny (Suárez-Orozco, 2000). The educational success experienced by the fastest growing student population in the United States, whether recently arrived or from families who have lived in the United States for many generations, cannot continue to be viewed as a "minority" issue. It is a mainstream issue that will bear importantly on the future of this nation, a future that will be recounted in the history books of tomorrow. In the present, as researchers, practitioners, and policymakers, we will make decisions that forever impact the educational destinies of Latino students in the United States, and, therefore, our own. Only time will tell what the history books will write of us.

¹⁰¹ Briefly, the cultural argument suggests that racial and ethnic groups are cleanly bounded entities characterized by certain characteristics, values, and behavioral practices with which they are either inherently endowed or which have been developed through the process of adaptation to social structures (Fukuyama, 1993; Sowell, 1981; Steinberg, 1996; Zhou & Kim, 2006). Especially in contemporary public discourse, the cultural argument is often used to describe the deleterious effects of cultural "deficiencies" that contribute to low achievement levels among certain minority groups (Glazer & Moynihan, 1970). For instance, discussions of the urban "underclass" culture generally posit that social structures such as residential segregation and extreme poverty lead groups to adopt values, and in turn self-defeating behaviors, in opposition to those of mainstream society with respect to work, money, education, and family life (Wilson, 1996; Zhou & Kim, 2006). The underlying assumption is that these groups lack the cultural toolkit necessary to engender success among group members, a position bordering dangerously on a blame-the-victim mentality (Zhou & Kim, 2006). The structural argument, on the other hand, also sees ethnicity and race as key explanatory factors for social mobility, but the meanings assigned to these characteristics differ from those suggested by the cultural argument. Structural explanations for cross-group variability in educational outcomes assign primary influence to social structural factors such as the position of the group in societal hierarchies of race and class, as well as labor market conditions and residential patterns (Zhou & Kim, 2006). In a departure from the cultural perspective, the structural argument posits that cultural values and behaviors will lead to upward mobility only when these characteristics unite with a set of conducive structural factors, for example a comparatively advantageous socioeconomic status at the time of initial entry into the United States and a relatively favorable climate of reception (Zhou & Kim, 2006).

¹⁰² Residential segregation across the United States since at least the early 1990's has been increasingly based more on socioeconomic differences than on racial characteristics (Massey, Rothwell, & Domina, 2009; Rothwell & Massey, 2010). Lukinbeal et al. (2012) used U.S. Census data to explore *intra*-group levels of residential segregation among Hispanics living in Chicago, Miami, and Phoenix, three U.S. cities with large Hispanic populations. The index of dissimilarity (D) score for high-income versus low-income segregation among Hispanics in these three cities exceeded the national median D-score for Hispanic versus non-Hispanic segregation. In other words, Latinos in these cities appeared to be more segregated *among* themselves along the axis of income than they were segregated from other groups along the axes of race or ethnicity. Massey et al. (2009) observe that while individuals make decisions about where to live largely based on income and price, the decisions that policymakers enact "allocate housing of different prices to different neighborhoods and thereby turn the market into a mechanism of both class and racial segregation" (p. 89). The authors claim that it is exclusionary zoning practices in particular that serve as a key institutional mechanism limiting the ability of many poor and minority families to move into neighborhoods that can open up access to more and better resources. It seems possible that more inclusionary residential zoning practices at the community level, which could be promoted in part through state and federal financial incentives, might go a long way toward providing more Hispanic families with the opportunity to access social networks that bridge class boundaries.

¹⁰³ However, the authors are rightfully cautious, noting that the viability of private (or public) programming modeled after Chinese and Korean *buxibans* or *hagwons* in economically disadvantaged communities lacking other coethnic economic and social institutions remains uncertain. This acknowledgement draws attention back to the fact that the availability and convertibility of one kind of resource condition but are also conditioned by the availability and convertibility of other types of resources.

¹⁰⁴ Still, strategies involving the use of technology must also recognize differential levels of knowledge about and access to computers and the Internet (Rowan-Kenyon et al., 2008).

¹⁰⁵ This is particularly the case among English Language Learners, the vast majority of whom are first and second generation students and 79 % of whom speak Spanish (Calderón et al., 2011).

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APPENDIX A2: CHAPTER 2

Table A2.1. *Standardized Results for the Full Structural Model*

	College Enrollment Status
	<i>b</i>
<u>Parent Resources</u>	
<i>Social Capital</i>	
College-Relevant School Social Capital	-0.04 ^a
College-Relevant Family Social Capital	-0.03
Intergenerational Closure	0.06
<i>Economic Capital</i>	
Income	0.02
<i>Human Capital</i>	
Education: Some college	0.02
Education: BA or above	0.14
<u>Student Alignment</u>	
Expectation-Action Alignment	0.81
<u>Background Covariates</u>	
Consistent expectations	-0.16
Test scores	-0.09
Female	-0.07
Family composition	-0.04
Private school	0.01
<u>Fit Statistics</u>	
χ^2	240.98(177), <i>p</i> =.00
CFI	0.98
RMSEA	0.02 (90% CI, 0.01-0.03)

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006.

Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Note: N = 1,022; CFI = Comparative Fit Index. RMSEA = Root Mean Square Error of Approximation; When using the WLSMV estimator, the chi-square statistic provided in Mplus is not distributed as chi-square.

^aStandard errors are not provided for the standardized results of probit regression estimation in Mplus when there are covariates in the model.

Table A2.2. *Predicted Probabilities of College Enrollment*

	Not enrolled	Enrolled, 1- or two- year	Enrolled, four-year
Baseline Model	0.29	0.44	0.27
One standard deviation increase in the level of student alignment	0.03	0.21	0.76
One standard deviation increase in parents' stocks of college- relevant school social capital	0.31	0.44	0.25
One standard deviation increase in parents' stocks of college- relevant family social capital	0.30	0.44	0.26
One standard deviation increase in parents' stocks of intergenerational closure around school	0.25	0.44	0.31
One standard deviation increase in parent income	0.28	0.44	0.28
At least one parent with a bachelor's or advanced degree	0.22	0.44	0.34

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006. Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Note: N = 1,022; The baseline model reflects the predicted probabilities for a male student with consistent expectations and sample mean standardized test scores who attends a public school and lives with both parents, at least one of whom has completed some college and who, together, earn the sample mean income and hold sample mean stocks of social capital.

Table A2.3. *Measurement Model Descriptions and Standardized Factor Loadings*

Latent Construct and ELS:2002 Item Label	Item Description	Factor Loading
Alignment		
F1RGPP2	GPA for all courses taken in the 9th - 12th grades	.81
F1HIMATH	The highest math course of a half-year or more taken by student	.73
F2PSEEXM	Whether the student took college entrance exams	.67
F2NAPP2P	Number of non-open enrollment schools student applied to	.72
College-Relevant School Social Capital		
BYP53B	Parent contacted school about school program for year	.67
BYP53C	Parent contacted school about plans after high school	.87
BYP53D	Parent contacted school about course selection	.88
College-Relevant Family Social Capital		
BYP56A	Provide advice about selecting courses or programs	.75
BYP56B	Provide advice about plans for college entrance exams	.85
BYP56C	Provide advice about applying to college/school after high school	.73
Intergenerational Closure		
BYP59DA	Knows mother of 10th grader's 1st friend	.57
BYP59EA	Knows father of 10th grader's 1st friend	.33
BYP60A	Number of times friend's parent gave advice about teachers / courses	.71
BYP60B	Number of times friend's parent gave a favor (to parent)	.72
BYP60C	Number of times friend's parent received a favor (from parent)	.67

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006. Statistics weighted by first and second follow-up panel weight and grade ten cohort flag.

Table A2.4. *Latent Construct Reliability Estimates*

	Latino Sample		
	ρ	SE	t
Alignment	.84	.01	181.40
College-Relevant School Social Capital	.85	.01	161.39
College-Relevant Family Social Capital	.82	.01	112.33
Intergenerational Closure	.87	.01	168.36

Table A2.5. *Bivariate Correlations Among Latent Study Variables*

	Alignment	CRSSC	CRFSC	IC	Enrollment
Alignment	1.00				
CRSSC ^a	.17	1.00			
CRFSC ^b	.19	.39	1.00		
IC ^c	.25	.27	.26	1.00	
Enrollment	.77	.11	.11	.24	1.00

^a College-relevant School Social Capital

^b College-relevant Family Social Capital

^c Intergenerational Closure

APPENDIX A3: CHAPTER 3

Multiple Group Confirmatory Factor Analysis

In Mplus, the procedure for assessing measurement invariance of the latent factors in the model across groups when working with categorical outcomes and using the delta parameterization proceeds through the following two steps:

- 1) First, the model is run with thresholds and factor loadings free across groups, with scale factors fixed at one in all groups, and with factor means fixed at zero in all groups.
- 2) In the second model, thresholds and factor loadings are constrained to be equal across groups, scale factors are fixed at one in one group and are free in the other group(s), and factor means are fixed at zero in one group and are free in the other group(s).

I began by running the confirmatory four-factor model as specified in step one above across the three groups—first, second, and third-plus generation Latino students. This model showed a good fit to the data ($\chi^2(162)=186.41$, CFI=.99, RMSEA=.02). The second model also fit the data well (data ($\chi^2(203)=229.17$, CFI=.99, RMSEA=.02). Further, the chi-square difference test revealed no significant differences between the three models ($\chi^2\Delta(41)=46.12$, $p=.27$). Muthén and Asparouhov (2002) assert that in order to make meaningful comparisons of factor distributions across groups, a majority of the variables serving as latent factor indicators should have both threshold and loading invariance. Given that complete measurement invariance was established, the criteria

suggested by Muthén and Asparouhov was satisfied. Latent mean differences estimated via this final model are provided in Table A3.8.

With an adequate level of measurement invariance established, I next examined structural invariance and, specifically, whether the magnitude of parameter estimates including regression coefficients and latent factor means varied across ethnic groups. I began with a baseline model in which factor loadings and thresholds were constrained to be equal across groups while intercepts and scale factors were held at 0 and 1 respectively in the first group and were freely estimated in the other group. This model, which fit the data well ($\chi^2(599)=666.15$, CFI=.98, RMSEA=.02), was then used as a baseline against which to compare each subsequent model in which one parameter was freed at a time across groups. Results from the testing of parameter magnitude differences across groups are presented in Table A3.9. While few of the differences reached statistical significance, it is quite possible that the small group sample sizes, particularly given the complexity of the model, resulted in a lack of power to detect significant differences where they might actually have existed.

Table A3.1. *Measurement Model Descriptions and Standardized Factor Loadings*

Latent Construct and ELS:2002 Item Label	Item Description	Factor Loading		
		First Gen	Second Gen	Third Gen
Alignment				
F1RGPP2	GPA for all courses taken in the 9th - 12th grades	.72	.69	.75
F1HIMATH	The highest math course of a half-year or more taken by student	.79	.77	.72
F2PSEEXM	Whether the student took college entrance exams	.66	.82	.86
F2NAPP2P	Number of non-open enrollment schools student applied to	.69	.79	.78
College-Relevant School Social Capital				
BYP53B	Parent contacted school about school program for year	.71	.77	.54
BYP53C	Parent contacted school about plans after high school	.94	.97	.91
BYP53D	Parent contacted school about course selection	.94	.85	.92
College-Relevant Family Social Capital				
BYP56A	Provide advice about selecting courses or programs	.65	.82	.66
BYP56B	Provide advice about plans for college entrance exams	.84	.90	.97
BYP56C	Provide advice about applying to college/school after high school	.86	.81	.73
Intergenerational Closure				
BYP59DA	Knows mother of 10th grader's First friend	.71	.58	.54
BYP59EA	Knows father of 10th grader's First friend	.64	.34	.34
BYP60A	Number of times friend's parent gave advice about teachers / courses	.83	.80	.69
BYP60B	Number of times friend's parent gave a favor (to parent)	.79	.67	.64
BYP60C	Number of times friend's parent received a favor (from parent)	.65	.66	.60

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006. Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Note: First Generation Latino Sample N = 176; Second Generation Latino Sample N = 308; Third-plus Generation Latino Sample N = 354.

Table A3.2. *Bivariate Correlations Among Latent Study Variables, First Generation Latino Students*

	Alignment	CRSSC	CRFSC	IC	Enrollment
Alignment	1.00				
CRSSC ^a	-.14	1.00			
CRFSC ^b	.16	.35	1.00		
IC ^c	.11	.30	.27	1.00	
Enrollment	.75	-.08	.30	.34	1.00

^a College-relevant School Social Capital

^b College-relevant Family Social Capital

^c Intergenerational Closure

Table A3.3. *Bivariate Correlations Among Latent Study Variables, Second Generation Latino Students*

	Alignment	CRSSC	CRFSC	IC	Enrollment
Alignment	1.00				
CRSSC ^a	.26	1.00			
CRFSC ^b	.17	.55	1.00		
IC ^c	.25	.29	.27	1.00	
Enrollment	.75	.19	.01	.16	1.00

^a College-relevant School Social Capital

^b College-relevant Family Social Capital

^c Intergenerational Closure

Table A3.4. *Bivariate Correlations Among Latent Study Variables, Third-Plus Generation Latino Students*

	Alignment	CRSSC	CRFSC	IC	Enrollment
Alignment	1.00				
CRSSC ^a	.26	1.00			
CRFSC ^b	.19	.20	1.00		
IC ^c	.34	.15	.21	1.00	
Enrollment	.77	.12	.10	.25	1.00

^a College-relevant School Social Capital

^b College-relevant Family Social Capital

^c Intergenerational Closure

Table A3.5 *Latent Construct Reliabilities*

	ρ	SE	t
Alignment	.84	0.01	181.40
College-Relevant School Social Capital	.85	0.01	161.39
College-Relevant Family Social Capital	.82	0.01	112.33
Intergenerational Closure	.87	0.01	168.36

Table A3.6. *Student Alignment Regressed on Parent Resources*

	Alignment								
	First Generation			Second Generation			Third Generation		
	<i>b</i>	SE	<i>t</i>	<i>b</i>	SE	<i>t</i>	<i>b</i>	SE	<i>t</i>
<u>Parent Resources</u>									
<i>Social Capital</i>									
College-Relevant School Social Capital	-0.04	0.08	-0.48	0.15	0.13	1.23	0.21	0.08	2.79
College-Relevant Family Social Capital	0.01	0.10	0.14	0.05	0.10	0.53	0.08	0.07	1.15
Intergenerational Closure	0.07	0.09	0.78	0.09	0.11	0.80	0.08	0.13	0.66
<i>Economic Capital</i>									
Income	0.04	0.04	1.07	0.02	0.03	0.71	-0.04	0.04	-1.06
<i>Human Capital</i>									
Education: Some college	-0.11	0.20	-0.57	-0.13	0.19	-0.64	0.11	0.16	0.72
Education: BA or above	0.03	0.24	0.11	-0.29	0.20	-1.44	0.35	0.19	1.86
<u>Background Covariates</u>									
Consistent expectations	0.39	0.23	1.74	0.27	0.21	1.34	0.47	0.19	2.52
Test scores	0.41	0.13	3.23	0.70	0.11	6.50	0.61	0.12	5.23
Female	0.18	0.18	1.01	0.20	0.15	1.40	0.46	0.14	3.30
Family composition	-0.06	0.15	-0.40	-0.23	0.15	-1.55	-0.10	0.15	-0.71
Private school	0.86	0.29	2.95	0.35	0.17	2.05	0.33	0.17	1.95
Mexican origin	-0.20	0.24	-0.83	-0.28	0.15	-1.89	0.03	0.15	0.24
Native English speaker	0.06	0.36	0.18	0.02	0.14	0.14	0.22	0.17	1.29
<u>Fit Statistics</u>									
χ^2	191.71(191), $p=.47$			209.57 (191), $p=.17$			263.86 (191), $p=.00$		
CFI	0.99			0.99			0.94		
RMSEA	0.01			0.02			0.03		
	(90% CI, 0.00-0.03)			(90% CI, 0.00-0.03)			(90% CI, 0.02-.04)		

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006. Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Note: First Generation Latino Sample N = 176; Second Generation Latino Sample N = 308; Third-plus Generation Latino Sample N = 354; CFI = Comparative Fit Index. RMSEA = Root Mean Square Error of Approximation; When using the WLSMV estimator, the chi-square statistic provided in Mplus is not distributed as chi-square.

Table A3.7. *Full Structural Model*

	College Enrollment Status								
	<u>First-Generation</u>			<u>Second-Generation</u>			<u>Third-Generation</u>		
	<i>b</i>	SE	<i>t</i>	<i>b</i>	SE	<i>t</i>	<i>b</i>	SE	<i>t</i>
<u>Parent</u>									
<i>Social Capital</i>									
College-Relevant School social capital	-0.19	0.12	-1.59	0.08	0.13	0.58	-0.14	0.08	-1.72
College-Relevant Family social capital	0.25	0.14	1.80	-0.20	0.12	-1.63	-0.05	0.08	-0.60
Intergenerational Closure	0.30	0.17	1.78	-0.08	0.12	-0.69	0.01	0.17	0.04
<i>Economic Capital</i>									
Income	-0.06	0.06	-0.93	0.02	0.03	0.54	0.10	0.05	2.08
<i>Human Capital</i>									
Education: Some college	0.33	0.25	1.32	-0.33	0.20	-1.66	-0.10	0.20	-0.52
Education: BA or above	0.39	0.30	1.29	0.23	0.21	1.10	-0.07	0.21	-0.33
<u>Student Alignment</u>									
Expectation-Action Alignment	1.27	0.21	5.98	0.981	0.15	6.61	0.95	0.12	7.90
<u>Background Covariates</u>									
Consistent expectations	0.27	0.24	1.10	0.00	0.23	0.01	-0.25	0.21	-1.19
Test scores	-0.26	0.15	-1.75	-0.09	0.15	-0.58	-0.07	0.12	-0.56
Female	-0.21	0.23	-0.91	-0.19	0.14	-1.26	-0.04	0.18	-0.20
Family composition	-0.37	0.20	-1.83	0.24	0.22	1.11	0.16	0.18	0.94
Private school	-0.66	0.50	-1.33	0.12	0.22	0.53	0.05	0.16	0.29
Mexican origin	0.29	0.23	1.28	0.23	0.18	1.32	0.04	0.17	0.21
Native English Speaker	0.13	0.30	0.43	-0.13	0.16	-0.79	-.56	0.20	-2.90
<u>Fit Statistics</u>									
χ^2	206.95(201), <i>p</i> =.39			216.64(201), <i>p</i> =.21			281.06(201), <i>p</i> =.00		
CFI	0.99			0.99			0.93		
RMSEA	0.01			0.02			0.03		
	(90% CI, 0.00-0.04)			(90% CI, 0.00-0.03)			(90% CI, 0.02-0.04)		

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006.

Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Note: First Generation Latino Sample N = 176; Second Generation Latino Sample N = 308; Third-plus Generation Latino Sample N = 354; CFI = Comparative Fit Index. RMSEA = Root Mean Square Error of Approximation; When using the WLSMV estimator, the chi-square statistic provided in Mplus is not distributed as chi-square.

Table A3.8. *Latent Mean Differences Across Latino Generation Status*

	df	W^{diff}	<i>p</i> value
<u>Parent Resources</u>			
<i>Social Capital</i>			
College-Relevant School Social Capital	2	0.49	.78
College-Relevant Family Social Capital	2	1.05	.30
Intergenerational Closure	2	1.96	.38
<u>Student Alignment</u>			
Expectation-Action Alignment	2	0.53	.77

Table A3.9. *Differences in the Influence of Parent Resources and Student Alignment on Enrollment Across Latino Generation Status*

	Alignment			Enrollment (Total)		
	df	χ^{2diff}	<i>p</i> value	df	W^{2diff}	<i>p</i> value
<u>Parent Resources</u>						
<i>Social Capital</i>						
College-Relevant School Social Capital	2	5.55	.06	6	7.24	.30
College-Relevant Family Social Capital	2	0.78	.68	6	8.09	.23
Intergenerational Closure	2	0.93	.63	6	4.78	.57
<i>Economic Capital</i>						
Income	2	4.41	.11	6	9.19	.16
<i>Human Capital</i>						
Education: BA or above	2	5.87	.05	6	11.60	.07
<u>Student Alignment</u>						
Expectation-Action Alignment				2	3.58	.17

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006. Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Note: First Generation Latino Sample N = 176; Second Generation Latino Sample N = 308; Third-plus Generation Latino Sample N = 354.

^a The Mplus statistical software requires the use of "MODEL TEST" command when evaluating parameter constraints in some cases; this command results in the use of the Wald test of parameter constraints, rather than the chi-square difference test, to test whether constraining the given parameters results in a significant decrement of model fit.

APPENDIX A4: CHAPTER 4

Multiple Group Invariance Testing

In Mplus, the procedure for assessing measurement invariance of the latent factors in a model across groups when working with categorical outcomes and using the delta parameterization proceeds through the following two steps:

- 1) In model one, thresholds and factor loadings are freed across groups, with scale factors fixed one across groups and factor means fixed at zero across groups;
- 2) In model two, thresholds and factor loadings are constrained to be equal across groups, scale factors are fixed at one in one group and freed in the other group(s), and factor means are fixed at zero in one group and freed in the other group(s).

I began by running the confirmatory four-factor model as specified in step one above.

This model showed a good fit to the data ($\chi^2(157)=354.19$, CFI=.996, RMSEA=.02). The second model also fit the data well (data ($\chi^2(187)=427.99$, CFI=.995, RMSEA=.02), however the chi-square difference test revealed a significant difference between the two models ($\chi^2\Delta(30)=94.27$, $p=.00$). Modification indices indicated that constraining to equality the thresholds for two of the four indicators of the alignment construct, cumulative high school GPA and number of non-open enrollment colleges applied to across Latinos and Whites was too restrictive to establish measurement invariance. To address this, first the thresholds for the number of non-open enrollment schools applied to were freed. This model demonstrated a good fit to the data ($\chi^2(184)=390.21$, CFI=.996, RMSEA=.02) and resulted in a reduction of the chi-square difference statistic ($\chi^2\Delta(27)=47.78$, $p=.01$); however, the difference between this model and the first model

remained significant at the $p \leq .10$ level. Next, the thresholds for cumulative high school GPA were freed. This model fit the data well ($\chi^2(178)=373.71$, CFI=.996, RMSEA=.02) and the chi-square difference test revealed that the two models no longer differed significantly ($\chi^2\Delta(21)=27.15$, $p=.17$). Muthén and Asparouhov (2002) assert that in order to make meaningful comparisons of factor distributions across groups, a majority of the variables serving as latent factor indicators should have both threshold and loading invariance. Given that it was only necessary to free the thresholds for two of the four indicators of one factor, alignment, to achieve measurement invariance of the four latent factors across the two groups being compared in this investigation, the criteria suggested by Muthén and Asparouhov were satisfied.

With an adequate level of measurement invariance established, I next examined structural invariance and, more specifically, whether the magnitude of parameter estimates including regression coefficients and latent factor means varied across ethnic groups. I began with a baseline model in which factor loadings and thresholds were constrained to be equal across groups while intercepts and scale factors were held at 0 and 1 respectively in the first group and were freely estimated in the other group. This model, which fit the data well ($\chi^2(637)=928.93$, CFI=.99, RMSEA=.02), was then used as a baseline against which to compare each subsequent model in which one parameter was freed at a time across groups. Latent mean differences estimated via this final model are provided in Table A4.1. Regression coefficient differences are provided in the text in Table 4.8.

Table A4.1. *Standardized Results for Full Structural Model*

	College Enrollment Status	
	<u>Latina/o Sample</u>	<u>White Sample</u>
	b	b
<u>Parent Resources</u>		
Social Capital		
College-Relevant School Social Capital	-.04 ^a	.04
College-Relevant Family Social Capital	-.03	.00
Intergenerational Closure	.06	.01
Economic Capital		
Income	.02	.05
Human Capital		
Education: Some college	.02	-.03
Education: BA or above	.14	.11
<u>Student Alignment</u>		
Expectation-Action Alignment	.81	1.03
<u>Background Covariates</u>		
Consistent expectations	-.16	-.13
Test scores	-.09	-.22
Female	-.07	-.02
Family composition	-.04	.09
Private school	.01	.01
<u>Fit Statistics</u>		
χ^2	240.98(177), $p=.00$	744.85(177), $p=.00$
CFI	0.98	0.99
RMSEA	0.02 (90% CI, 0.01-0.03)	0.02 (90% CI, 0.02-0.03)

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006.

Statistics weighted by first and second follow-up panel weight and the grade 10 cohort flag.

Note: Latino Sample N = 1,022; White Sample N = 5,415. CFI = Comparative Fit Index. RMSEA = Root Mean Square Error of Approximation. When using the WLSMV estimator, the chi-square statistic provided in Mplus is not distributed as chi-square.

^aStandard errors are not provided for the standardized results of probit regression estimation in Mplus when there are covariates in the model.

Table A4.2. *Predicted Probabilities of College Enrollment from Probit Regression Model*

	<u>Latina/o Student</u>			<u>White Student</u>		
	Not enrolled	Enrolled, 1- or 2-year	Enrolled, 4-year	Not enrolled	Enrolled, 1- or 2-year	Enrolled, 4-year
Baseline Model	0.29	0.44	0.27	0.13	0.30	0.57
One standard deviation increase in the level of student alignment	0.03	0.21	0.76	0.00	0.04	0.96
One standard deviation increase in parents' stocks of college-relevant school social capital	0.31	0.44	0.25	0.11	0.29	0.60
One standard deviation increase in parents' stocks of college-relevant family social capital	0.30	0.44	0.26	0.12	0.30	0.57
One standard deviation increase in parents' stocks of intergenerational closure around school	0.25	0.44	0.31	0.12	0.30	0.58
One standard deviation increase in parent income	0.28	0.44	0.28	0.07	0.23	0.70
At least one parent with a bachelor's or advanced degree	0.22	0.44	0.34	0.08	0.25	0.66

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006. Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Note: Latino Sample N = 1,022; White Sample N = 5,415. The baseline model reflects the predicted probabilities for a male student with consistent expectations and sample mean standardized test scores who attends a public school and lives with both parents, at least one of whom has completed some college and who, together, earn the sample mean income and hold sample mean stocks of social capital.

Table A4.3. *Measurement Model Descriptions and Standardized Factor Loadings*

Latent Construct and <i>ELS:2002</i> Item Label	Item Description	Factor Loading	
		Latino Student	White Student
Alignment			
F1RGPP2	GPA for all courses taken in the 9th - 12th grades	.73	.76
F1HIMATH	The highest math course of a half-year or more taken by student	.72	.75
F2PSEEXM	Whether the student took college entrance exams	.81	.82
F2NAPP2P	Number of non-open enrollment schools student applied to	.67	.60
College-Relevant School Social Capital			
BYP53B	Parent contacted school about school program for year	.67	.69
BYP53C	Parent contacted school about plans after high school	.87	.80
BYP53D	Parent contacted school about course selection	.88	.76
College-Relevant Family Social Capital			
BYP56A	Provide advice about selecting courses or programs	.75	.74
BYP56B	Provide advice about plans for college entrance exams	.85	.81
BYP56C	Provide advice about applying to college/school after high school	.73	.61
Intergenerational Closure			
BYP59DA	Knows mother of 10th grader's 1st friend	.57	.59
BYP59EA	Knows father of 10th grader's 1st friend	.33	.47
BYP60A	Number of times friend's parent gave advice about teachers / courses	.71	.72
BYP60B	Number of times friend's parent gave a favor (to parent)	.72	.70
BYP60C	Number of times friend's parent received a favor (from parent)	.67	.67

Source: Educational Longitudinal Study (ELS) of 2002; 10th grade students and parents surveyed in 2002, 12th grade students surveyed in 2004, and high-school diploma or GED recipients surveyed in 2006. Statistics weighted by first and second follow-up panel weight and grade 10 cohort flag.

Table A4.4. *Bivariate Correlations Among Latent Study Variables, Latino Sample*

	Alignment	CRSSC	CRFSC	IC	Enrollment
Alignment	1.00				
CRSSC ^a	0.17	1.00			
CRFSC ^b	0.19	0.39	1.00		
IC ^c	0.25	0.27	0.26	1.00	
Enrollment	0.77	0.11	0.11	0.24	1.00

^a College-relevant School Social Capital

^b College-relevant Family Social Capital

^c Intergenerational Closure

Table A4.5. *Bivariate Correlations Among Latent Study Variables, White Sample*

	Alignment	CRSSC	CRFSC	IC	Enrollment
Alignment	1.00				
CRSSC ^a	0.01	1.00			
CRFSC ^b	0.21	0.39	1.00		
IC ^c	0.24	0.28	0.27	1.00	
Enrollment	0.80	0.07	0.20	0.23	1.00

^a College-relevant School Social Capital

^b College-relevant Family Social Capital

^c Intergenerational Closure

Table A4.6. *Latent Construct Reliability Estimates*

	Latino Sample			White Sample		
	ρ	SE	t	ρ	SE	t
Alignment	.84	.01	181.40	.84	.00	327.09
College-Relevant School Social Capital	.85	.01	161.39	.84	.00	295.75
College-Relevant Family Social Capital	.82	.01	112.33	.80	.00	259.12
Intergenerational Closure	.87	.01	168.36	.86	.00	344.50

Table A4.7. *Latent Mean Differences Across Ethnicity*

	Latino/White		
	df	$W\Delta$	p value
<u>Parent Resources</u>			
<i>Social Capital</i>			
College-Relevant School Social Capital	1	7.68	.01
College-Relevant Family Social Capital	1	0.02	.89
Intergenerational Closure	1	6.72	.01
<u>Student Alignment</u>			
Expectation-Action Alignment	1	0.80	.37

APPENDIX AM: METHODS

Approaching Complex Survey Data

Due to the fact that the *ELS* sampling design results in students' being nested in schools, the assumption of the statistical independence of observations is likely violated, which can result in underestimation of standard errors (Ingels et al, 2007; Raudenbush & Bryk, 2002). The Mplus command "complex" was used to adjust the standard errors and model fit indices to account for cluster sampling (Muthén & Muthén, 2010). The "complex" command cues the Mplus software to employ the robust weighted least squares (WLSMV) estimator with categorical data. The WLSMV estimator was employed in these analyses given that almost all of the observed variables used in this research, including the outcome, are either binary or ordered categorical in nature. Like the robust maximum likelihood (MLR) estimator, the WLSMV estimator provides parameter estimates with standard errors and a chi-square test statistic that are robust to non-normality and non-independence of observations (Muthén & Muthén, 2010). One advantage associated with the use of the WLSMV estimator is that, unlike the model output provided by the Mplus software when using the MLR estimator, the output provided includes a number of fit statistics other than the chi-square statistic. These additional fit indices include the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Weighted Root Mean Residual (WRMR).

Analytic weights were utilized to compensate for nonrandom sampling techniques and unequal selection probabilities and to allow for the extrapolation of the results to the

represented target population. The design weight required to select the appropriate sample for this analysis is a combination of the panel weight for students included in both the first and second follow-ups ($F2F1WT > 0$) who were sample members in the 10th grade ($G10COHRT = 1$). This combination allows for extrapolation to a nationally representative population of 2,000,628 Latino and non-Latino White students.

Choice of Estimator

When working with categorical outcomes and complex survey data in Mplus, the researcher must select between the robust weighted least squares (WLSMV) and robust maximum likelihood (MLR) estimators. While being able to use full-information maximum likelihood to deal with missing sample data initially made the MLR estimator more attractive, it became evident that in practice this option would not be feasible. The model employed in this research includes four latent factors and numerical integration is required for maximum likelihood estimation of latent variable models involving categorical outcomes. When the model involves four or more latent factors, the computational burden of numerical integration becomes exceedingly heavy, with each model run taking several hours to several days to converge, and many models will fail to converge (Muthén & Muthén, 2010).

Therefore, I made the decision to instead employ the WLSMV estimator. I first considered using multiple imputation to deal with missingness in the data before importing the multiply imputed data sets into Mplus for analysis. However, as I became familiar with the literature on multiple imputation, it soon became clear that the use of multiply imputed data to conduct multiple group invariance testing was itself an area of

current methodological research. Specific to the model used in this research, it seemed unclear to what extent the imputation of categorical data, as well as model difference testing procedures with multiply imputed data across groups, would provide accurate and reliable results (Enders, 2011, personal communication). I was fortunate enough to have Craig Enders, associate professor of psychology at Arizona State University and author of *Applied Missing Data Analysis* (2010), respond to my inquiry on the matter via the Mplus Discussion Board. That exchange has been posted as a reference document on the Mplus website and can be found here:

<http://www.statmodel.com/download/Multiple%20Imputation%20versus%20FIML.pdf>

In the end, I employed the WLSMV estimator and made a concerted effort to address missing data issues via extensive missing values analysis using the "Missing Values Analysis" module in SPSS. Separate variance *t*-tests indicated that across groups, both income and race might be correlated with missingness on a handful of other variables included in this research. However, both parent income and student race are variables included in the investigation such that model parameters are estimated conditional on those variables, addressing this potential bias.

Inasmuch as one is able to ascertain that the data are missing at random (MAR), given that this assumption is not verifiable, I determined that the MAR assumption had most likely been satisfied. As an extra measure, because estimation using the WLSMV estimator drops cases with missing values on any one of the model covariates from the analyses, I also selected model covariates with complete data for all sample members.

When using the WLSMV estimator, all other observed measures in the model are regressed on all of the observed covariates in the first step of model estimation.

In order to evaluate the sensitivity of the model to missingness, after arriving at the final model specification, and following numerous attempts and a number of changes to convergence criteria, I was able to achieve convergence of the model using the MLR estimator. While the model parameters are not directly comparable (WLSMV provides probit coefficients and MLR provides logit coefficients) I observed similar patterns with respect to both sign and significance across model parameters between the two model outputs. I took this as an indication that model estimation using the WLSMV estimator did not result in serious deviations from model estimation using full-information maximum likelihood.

Checking for Multicollinearity Issues

When working within a multiple regression framework, it is assumed that each predictor in the model contains at least some unique information. If there is substantial redundancy, or multicollinearity, among the predictor variables, the result is that these measures together contain less total information than model results indicate. A high degree of multicollinearity within the set of predictors can cause regression parameters to be unstable, even when small changes are made in the model, because the standard errors of the regression parameters are very large (Belsley, Kuh, & Welsch, 1980).

In order to assess whether there were multicollinearity issues present in the data used for this research, I examined the bivariate correlations among the study variables, as

well as the Variance Inflation Factors (VIF) and condition indices for this set of variables.

In examining bivariate correlations, ideally none of the correlations should be above .60 (Kleinbaum, Kupper, & Nizam, 2008). Across both White and Latino students, bivariate correlations tended to be highest among variables sharing a common wording stem, although almost all bivariate correlations fell below (and most well below) .60. The two exceptions, both of which occurred in the Latino sample only, were the correlations between taking postsecondary entrance exams and the number of four-year schools applied to ($r=.64$) and between a parent contacting the school about course selection and a parent contacting the school about the student's plans after high school ($r=.62$).

In order to better assess whether these bivariate correlations, or any other correlations involving *more* than two predictor variables, indicated the presence of multicollinearity in the data, I also examined the VIFs and condition indices. The VIFs are obtained by regressing each predictor on all other predictors in order to estimate an R-square value for each predictor. A VIF above 10 is considered problematic (Kleinbaum et al., 2008). In the data used in this research none of the VIFs were above 3.0, and most were below 2.0.

The computation of condition indices (done via Principal Components Analysis) examines all of the predictor variables together. New combinations of all of the information in the predictor variables, or new components, are created and these components do not overlap with one another. Condition indices are then computed as ratios of the variances between two components, with values larger than 30 suggesting

possible multicollinearity because one component may reflect very little unique information (Kleinbaum et al., 2008). There were no condition indices above 30 in the data used for this research.

Correlated Residuals (Error Terms)

In the structural equation modeling literature, there is an abundance of literature addressing the issue of correlated residuals, or error terms, among latent factor indicators and scholars do not always agree (see for example, Bollen, 1989, 2000; Bollen & Lennox, 1991; Brito & Pearl, 2002; Gerbing & Anderson, 1984; Hayduk, 1989; Kenny, 1976; Marsh, 1989). Some methodologists suggest that error terms should never be correlated. At the opposite end of the spectrum, Cole, Ciesla and Steiger (2007) have advised that *not* modeling *all* residual correlations among items sharing a common method can result in severe model misspecification in both the measurement sense and also the theoretical or conceptual sense.

Falling more along middle ground, sometimes researchers use multitrait-multimethod (MTMM) models in order to fit one or more method factors in addition to the substantive factors (Bollen & Lennox, 1991). Of course, the question then becomes, what does a "method" make? Methods can include procedures, including self report, parent report, interview, or observation, as well as similar wording or stems for sets of questions (Smolkowski, 2007). A reading of the literature suggests that correlated errors are acceptable and indeed necessary in some models but should be used conservatively and with justification.

Prior to beginning the process of model specification in this research, it was expected that indicators of each of the three parent social capital constructs would have residuals that were correlated to some degree due to shared methods (both parent report and shared question wording). All of the indicators of college-relevant school social capital shared a common stem in the question wording on the parent survey, as did all indicators of the college-relevant family social capital latent factor. For these two factors, three of the four possible residual correlations were fit. Modeling all of the residual correlations for a factor results in model underidentification. Of the five indicators of intergenerational closure, two sets of two indicators shared a common question stem and these residual correlations were also freely estimated.

Alignment Thresholds?

One question I considered was whether there appeared to be a "threshold" alignment score that a student must have crossed in order to have been observed as enrolled in a four-year university in 2006. Unfortunately, it was not possible to estimate latent factor scores for the full model because one cannot estimate latent factor scores in Mplus when the model includes a dependent variable regressed on another dependent variable (in this model, enrollment regressed on alignment). However, I was able to estimate factor scores based on the full model using the MLR estimator. The results suggested that the mean alignment score among the group of Hispanic students who were enrolled in a four-year institution in 2006 was almost a full standard deviation above the mean alignment score for the entire Hispanic sample. Among Whites, however, the mean alignment score among students enrolled in a four-year college was only about one-half

of a standard deviation above the White sample mean on alignment. These results suggest that assisting more Hispanic students in "making the leap" to four-year institutions may require, on average, a larger boost to the alignment levels observed among Hispanic students than the boost required for similarly situated White students.

Table AM.1. Alignment Latent Factor Score Thresholds for Levels of Outcome Measure (MLR Estimation)

	Latino Student	White Student
Sample mean of individual scores on alignment construct	11.09	12.76
Sample standard deviation of individual scores on alignment construct	2.74	2.47
Sample range of individual scores on alignment construct	4.06-17.40	4.34-18.91
Mean alignment scores among students not enrolled	8.75	9.85
Mean alignment score among students enrolled in a one- or two-year college	10.11	11.09
Mean alignment score among students enrolled in a four-year college	13.51	14.13

Normality and Linearity Assumptions

The plots below were used to assess the linearity of the relationships between model predictors and both alignment and enrollment. While it would have been preferable to examine the linearity of these associations using individual factor scores on the actual latent constructs, it is not possible to generate residual plots or scatterplots in Mplus. Therefore, the plots were created in SPSS using composite measures of alignment and each of the three parent social capital measures used in this research. It appears that there may be some non-linearity in the associations between alignment and both parent income and parent college-relevant school social capital.

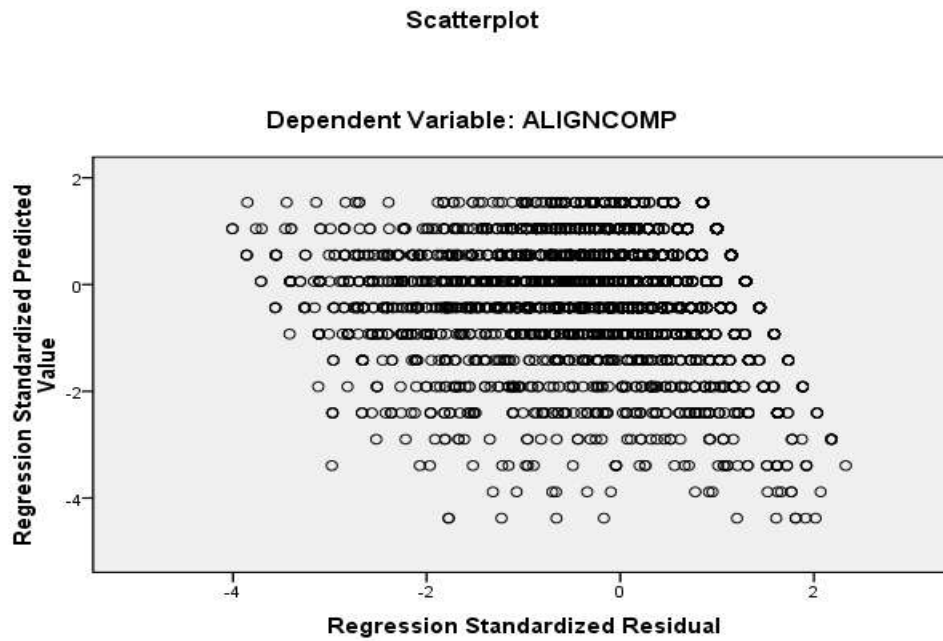


Figure AM.1. Residual plot: Alignment composite and income

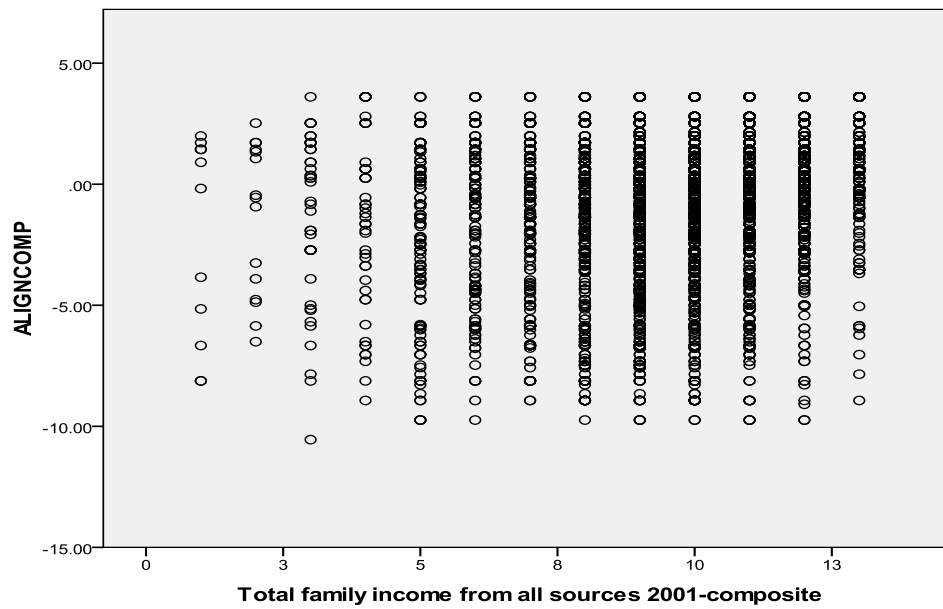


Figure AM.2. Scatterplot: Alignment composite and income

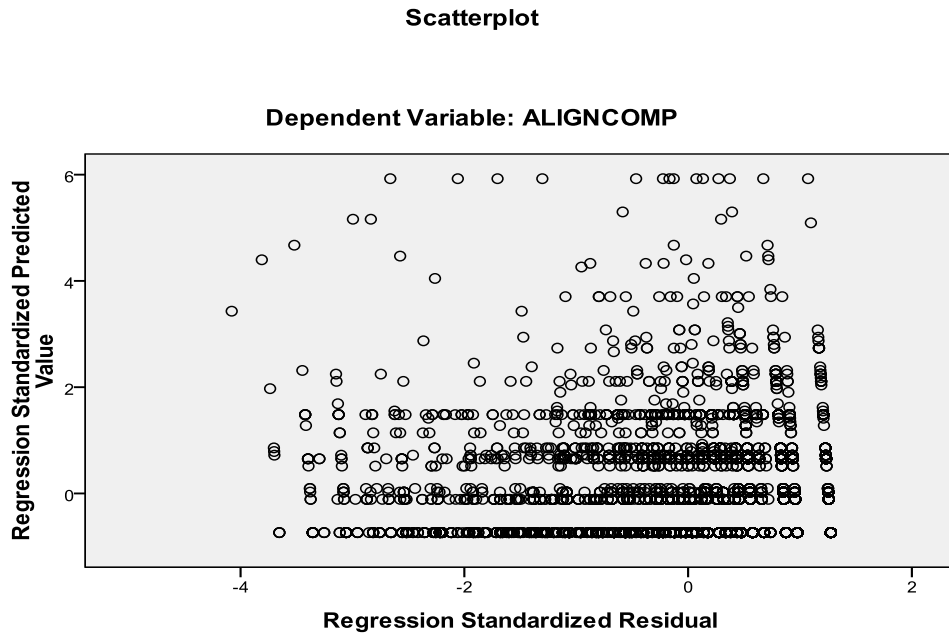


Figure AM.3. Residual plot: Alignment composite and college-relevant school social capital composite

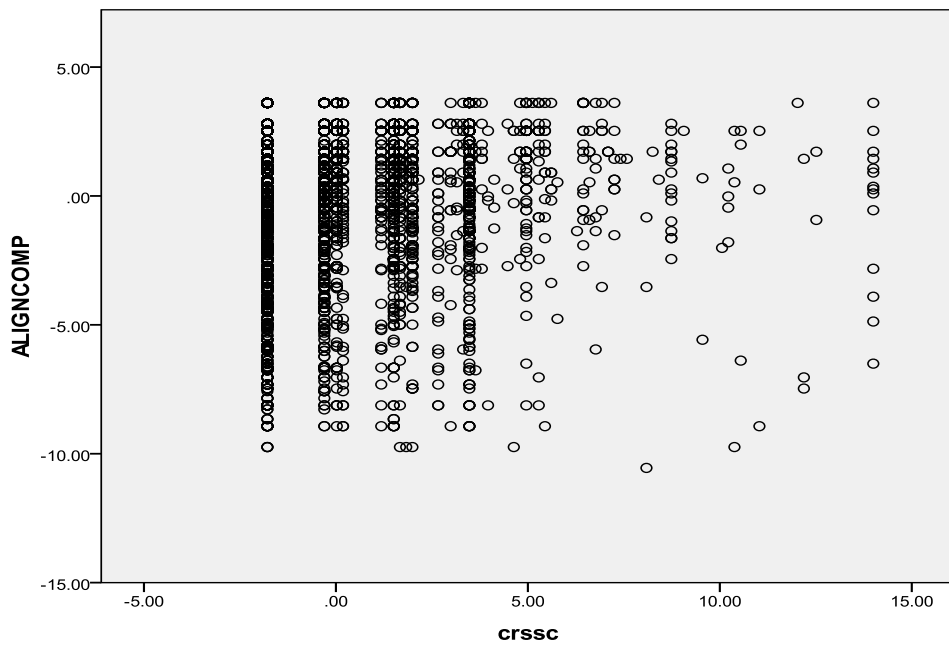


Figure AM.4. Scatterplot: Alignment composite and college-relevant school social capital composite

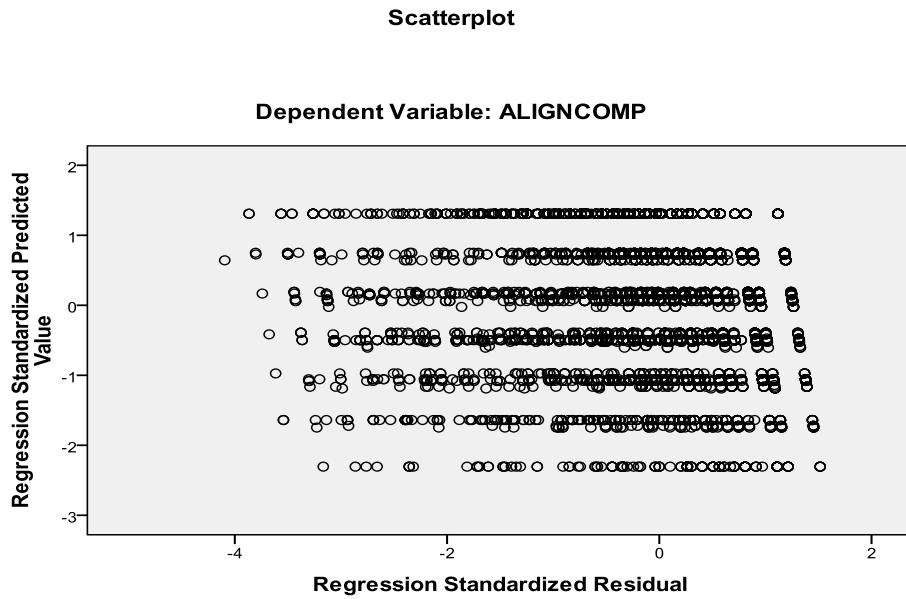


Figure AM.5. Residual plot: Alignment composite and college-relevant family social capital composite

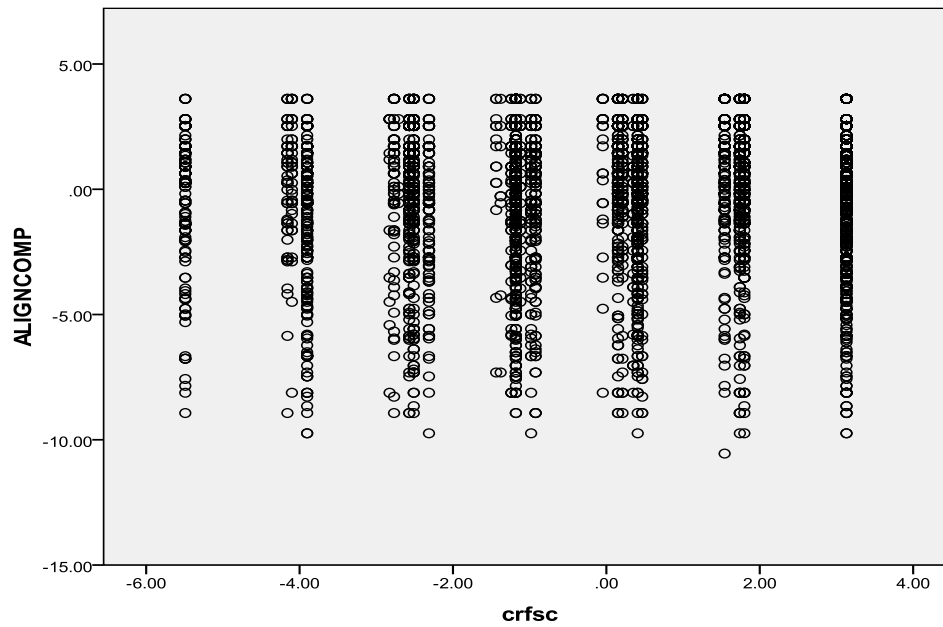


Figure AM.6. Scatterplot: Alignment composite and college-relevant family social capital composite

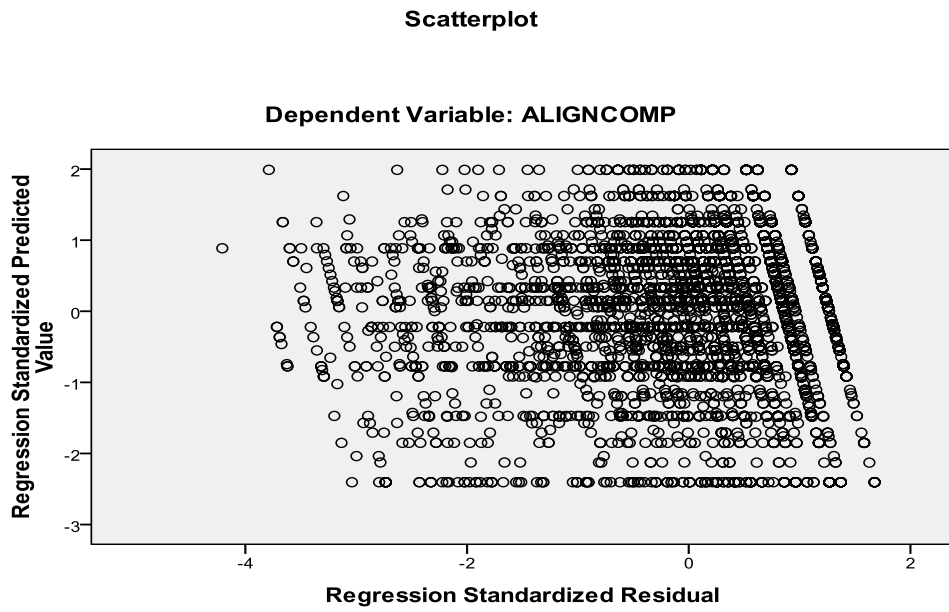


Figure AM7. Residual plot: Alignment composite and intergenerational closure composite

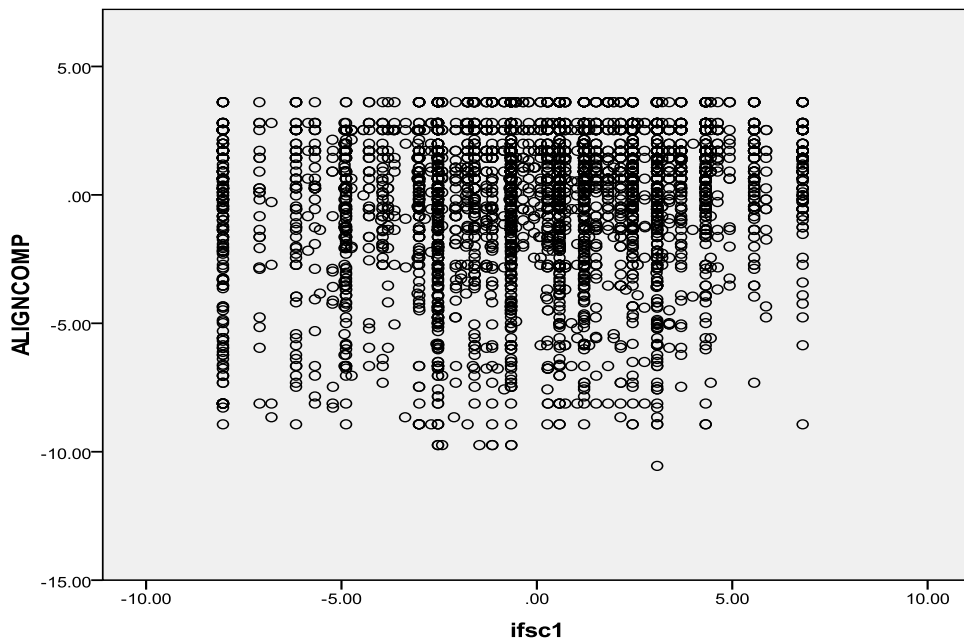


Figure AM.8. Scatterplot: Alignment composite and intergenerational closure composite

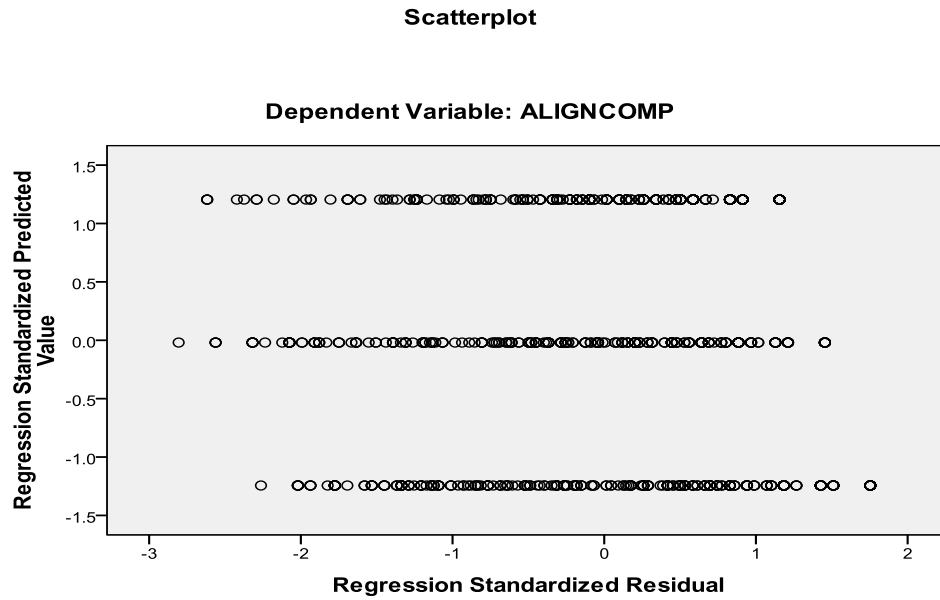


Figure AM.9. Residual plot: Alignment composite and parent education

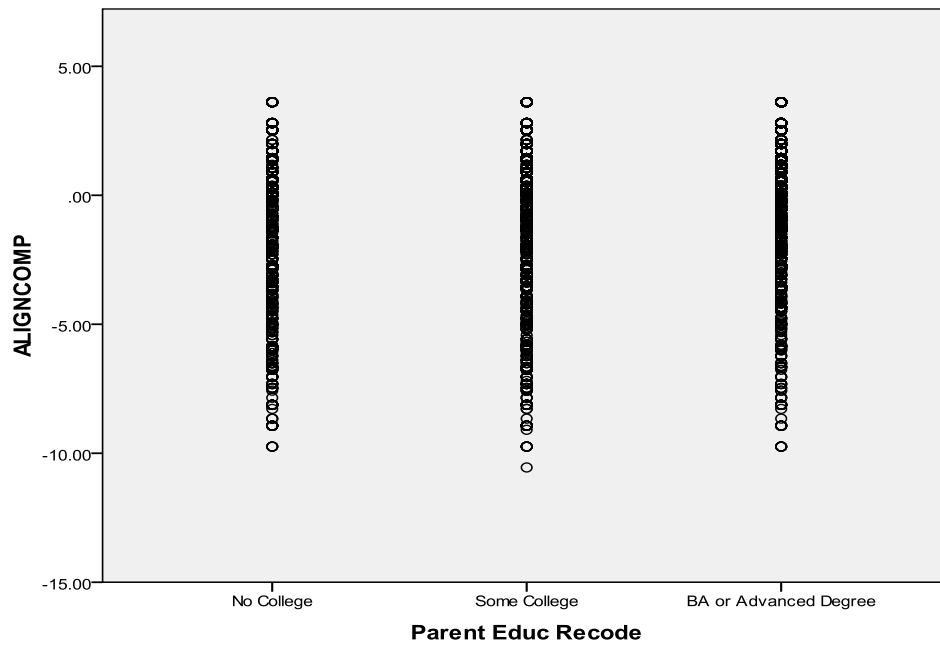


Figure AM.10. Scatterplot: Alignment composite and parent education

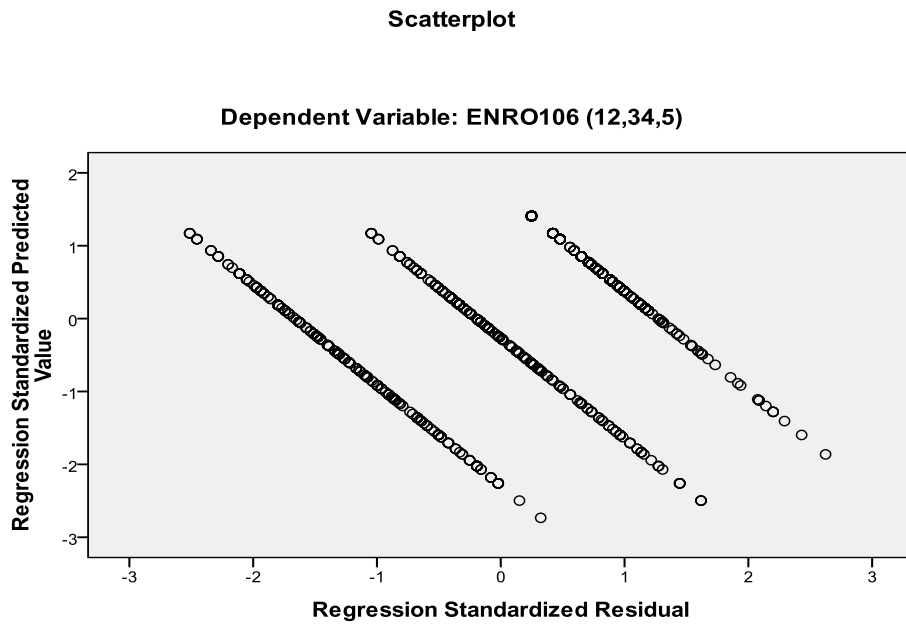


Figure AM.11. Residual plot: Enrollment (categorical) and alignment composite

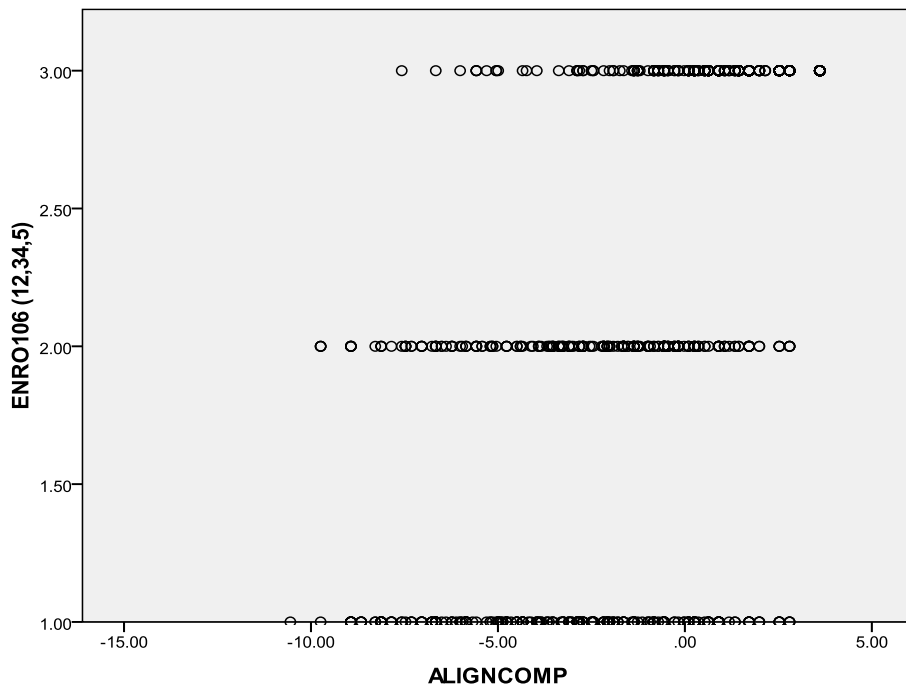


Figure AM.12. Scatterplot: Enrollment (categorical) and Alignment composite

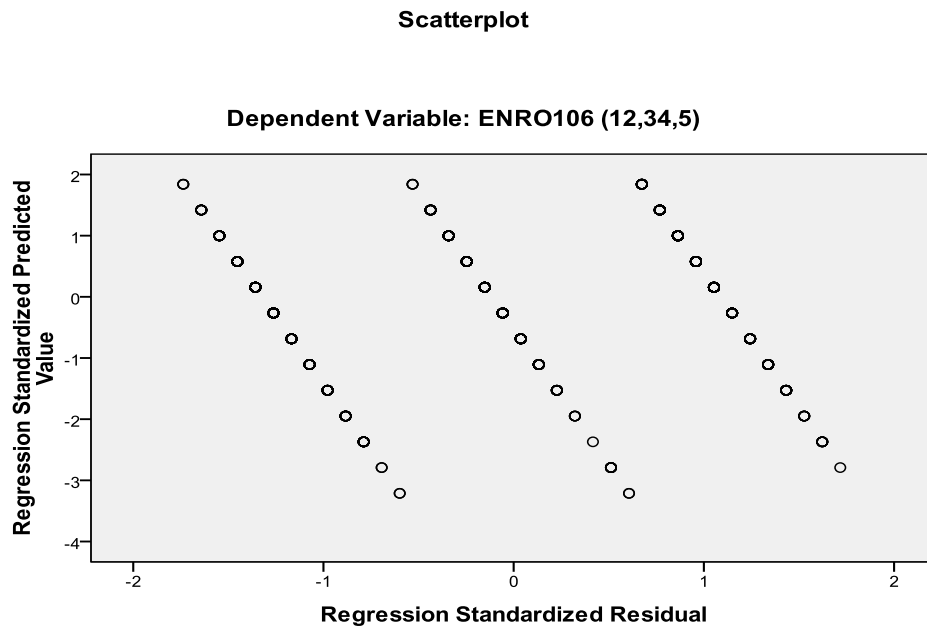


Figure AM.13. Residual plot: Enrollment (categorical) and income

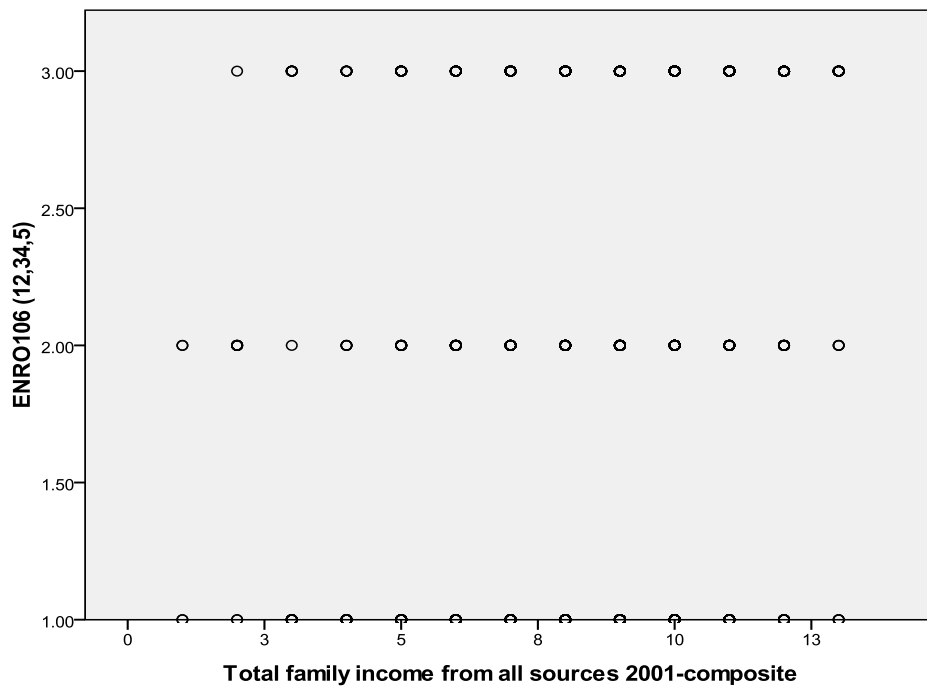


Figure AM.14. Scatterplot: Enrollment (categorical) and income

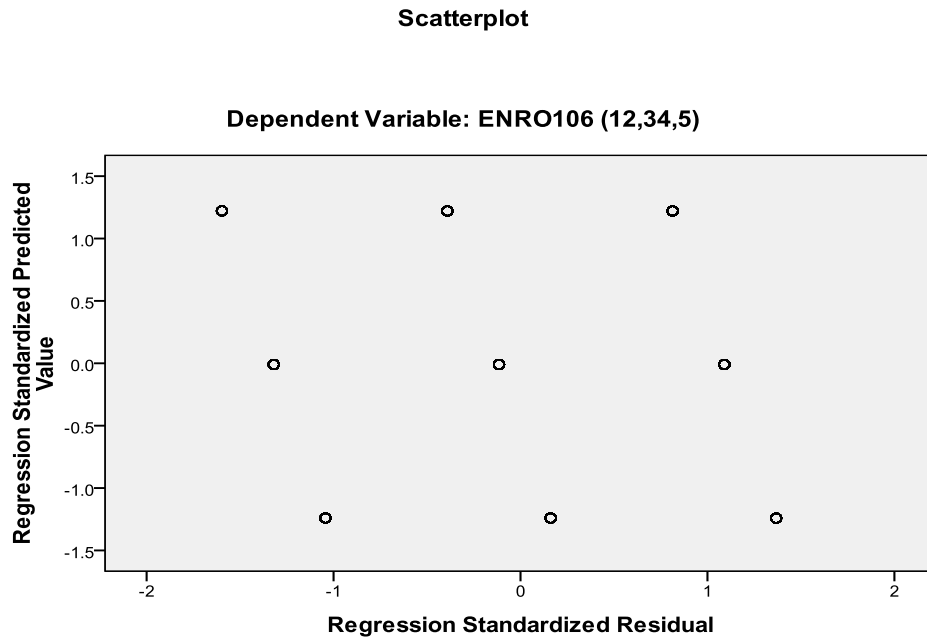


Figure AM.15. Residual plot: Enrollment (categorical) and parent education

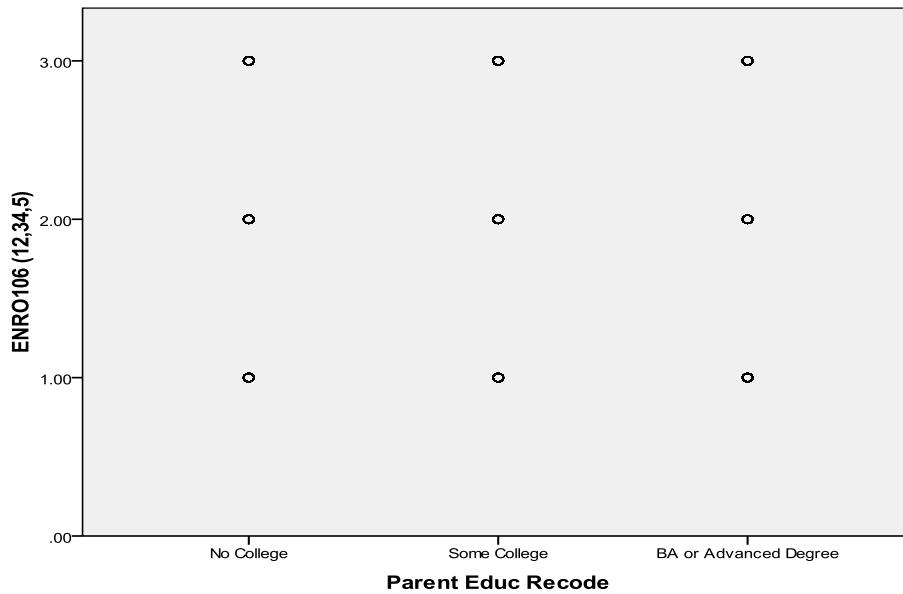


Figure AM.16. Scatterplot: Enrollment (categorical) and parent education

Scatterplot

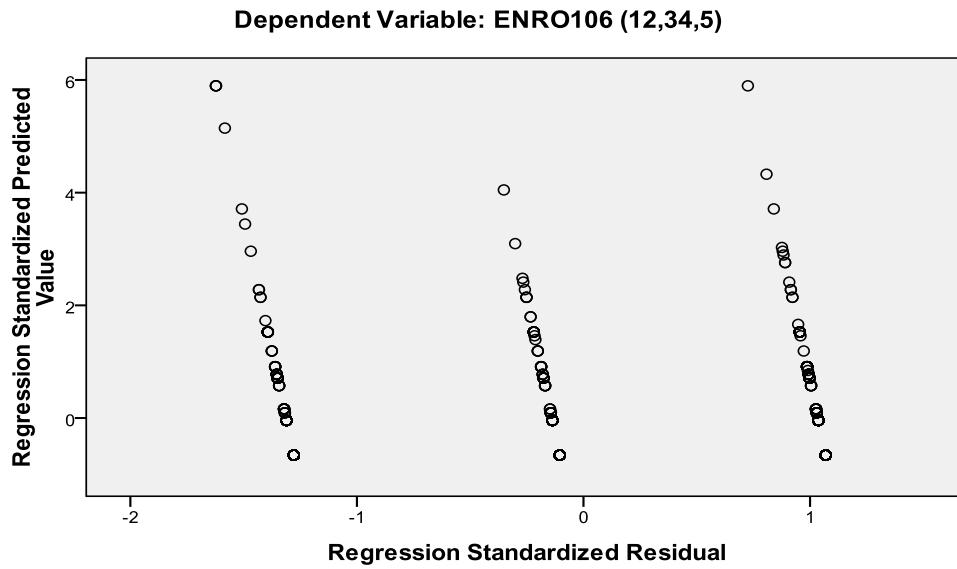


Figure AM.17. Residual plot: Enrollment (categorical) and college-relevant school social capital composite

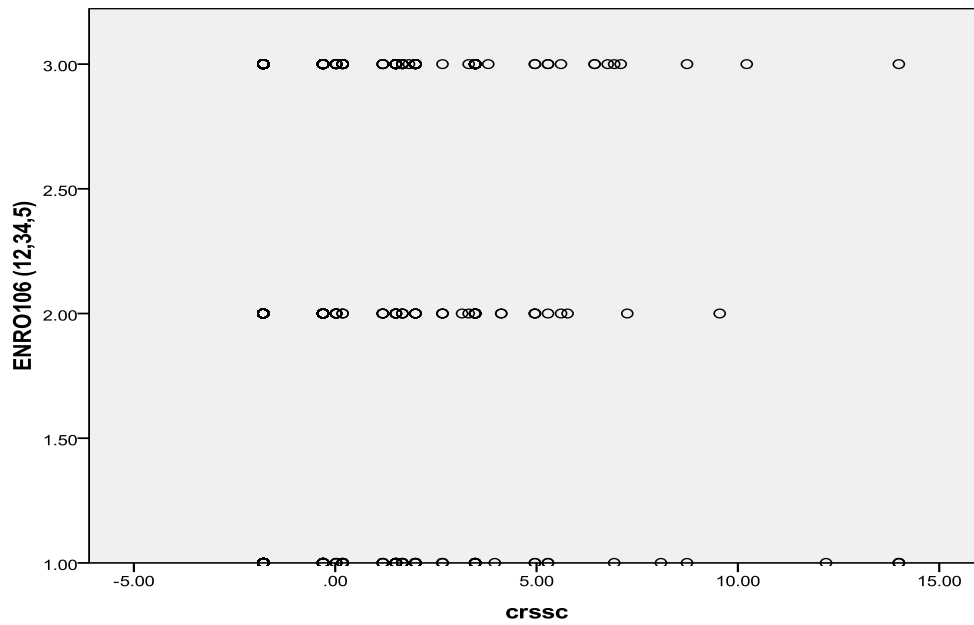


Figure AM.18. Scatterplot: Enrollment (categorical) and college-relevant school social capital composite

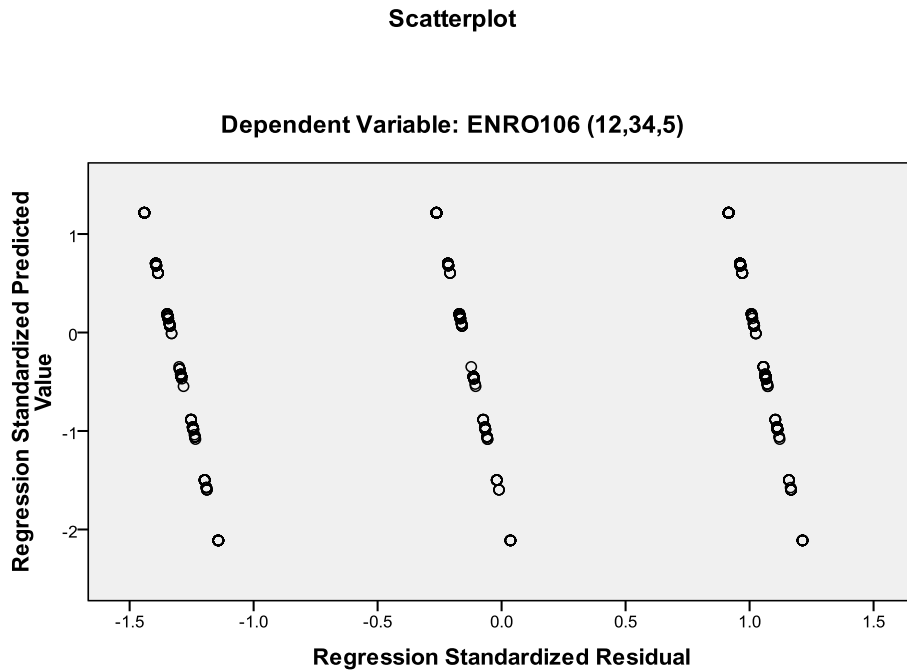


Figure AM.19. Residual plot: Enrollment (categorical) and college-relevant family social capital composite

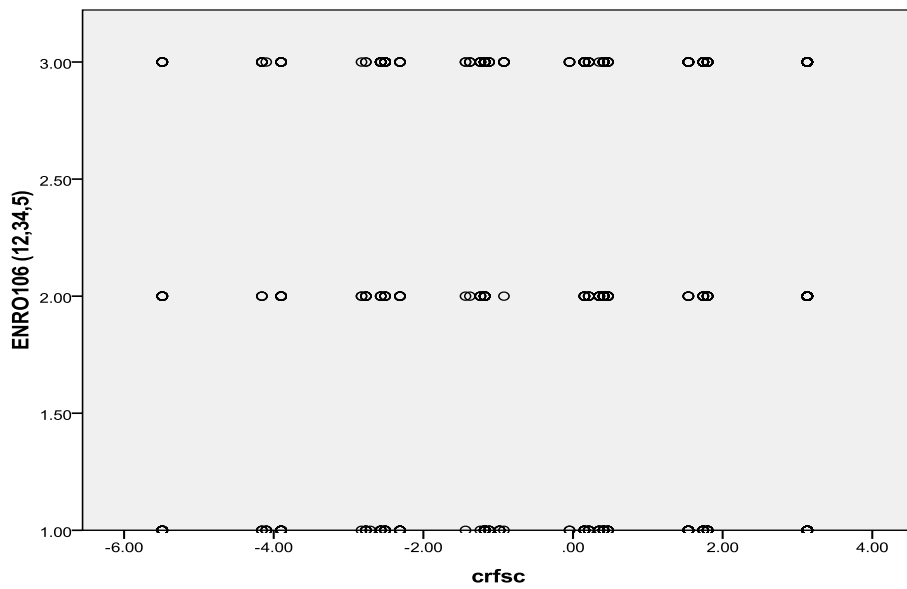


Figure AM.20. Scatterplot: Enrollment (categorical) and college-relevant family social capital composite

Scatterplot

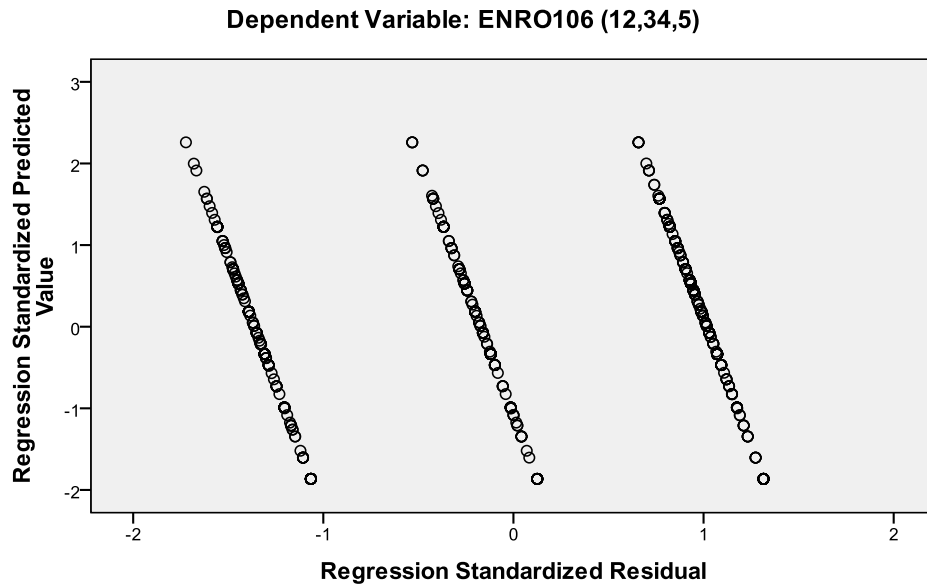


Figure AM.21. Residual plot: Enrollment (categorical) and intergenerational closure composite

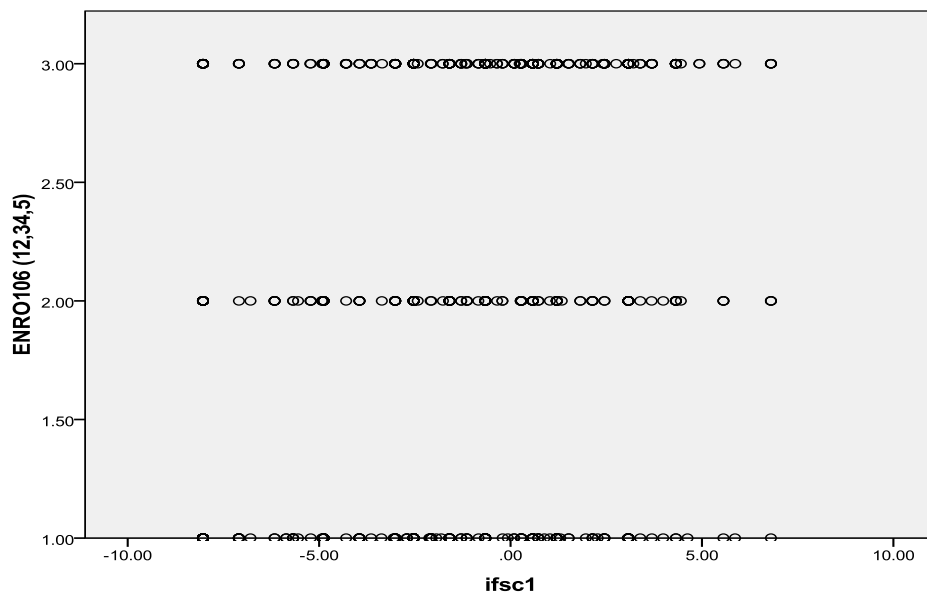


Figure AM.22. Scatterplot: Enrollment (categorical) and intergenerational closure composite

With respect to the relationship between alignment and enrollment, all of the item characteristic curves depicted below for enrollment regressed on alignment demonstrate the pattern one would expect to observe in the presence of a linear relationship. The consistency of the relationship between alignment and enrollment was also assessed statistically in order to confirm that the assumption of parallel slopes was satisfied. After verifying that the assumption of parallel slopes was satisfied, I moved forward with analyses treating the outcome as ordered categorical. Therefore, the probit regression coefficients can be assumed to have the same impact on the probability of moving from not being enrolled (category 1 on the outcome) to one- or two-year enrollment (category 2) and from one- or two-year enrollment to four-year enrollment (category 3).

At the same time, probit regression coefficients cannot be interpreted as linear regression coefficients would be. The probit regression coefficient represents the effect on the outcome given a b standard deviation unit change in the latent variable underlying y (referred to as y^*) for a one unit change in x . To convert y^* into a probability estimate for the observed y , it is necessary to compute the cumulative normal of y^* given a predetermined set of values for all model predictors. Doing so results in what is referred to as the predicted or conditional probability of y given these values. The researcher is also able to evaluate the change in y associated with a change in any x by varying the value of one model predictor at a time by a prespecified amount while holding all other predictor values constant.

In other words, attempting to interpret a raw probit coefficient does not provide a lot of useful information because the effect of any specific x will depend on the value of all the other x 's *as well as* their corresponding coefficients.

One can see this by looking at the item characteristic curves for enrollment regressed on alignment across the samples used in this research. The pattern reflected in each of the figures below is indeed the pattern one would expect to observe in the presence of a linear relationship between alignment and enrollment. As the level of alignment increases, the probability of a lower category of enrollment goes down and a higher category goes up. However, the middle category first goes up but, with further increases in alignment, then goes down, favoring a higher category on the enrollment outcome. The item characteristic curves make it clear that the impact of a change in alignment will depend on where the student starts in the distribution of alignment.

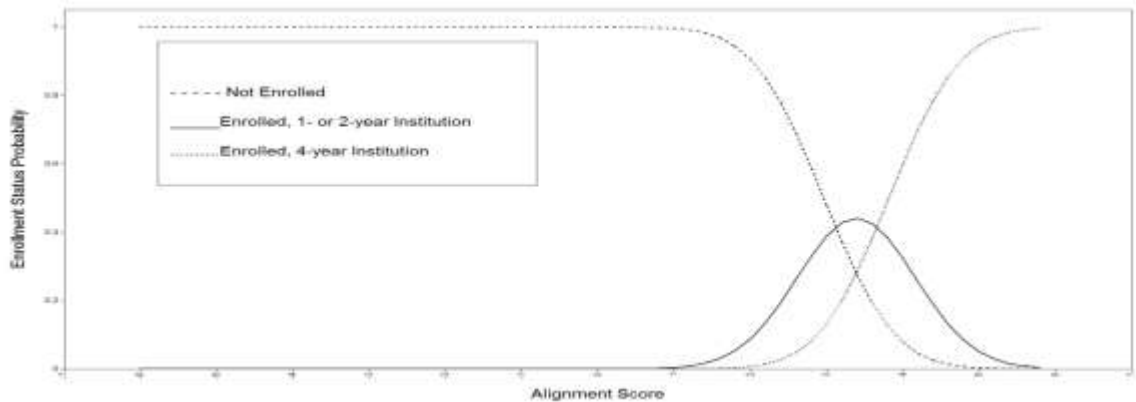


Figure AM.23. Item characteristic curve for enrollment status (outcome measure) as a function of alignment, Latino sample

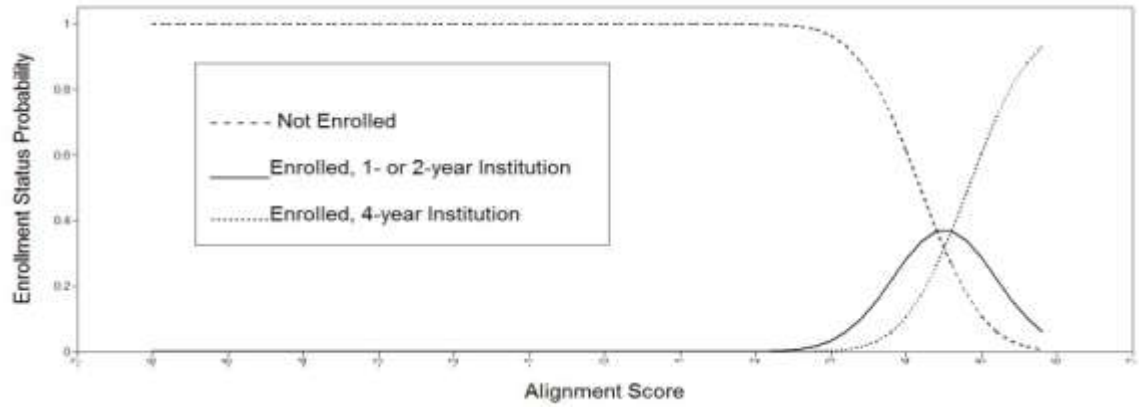


Figure AM.24. Item characteristic curve for enrollment status (outcome measure) as a function of alignment, White sample

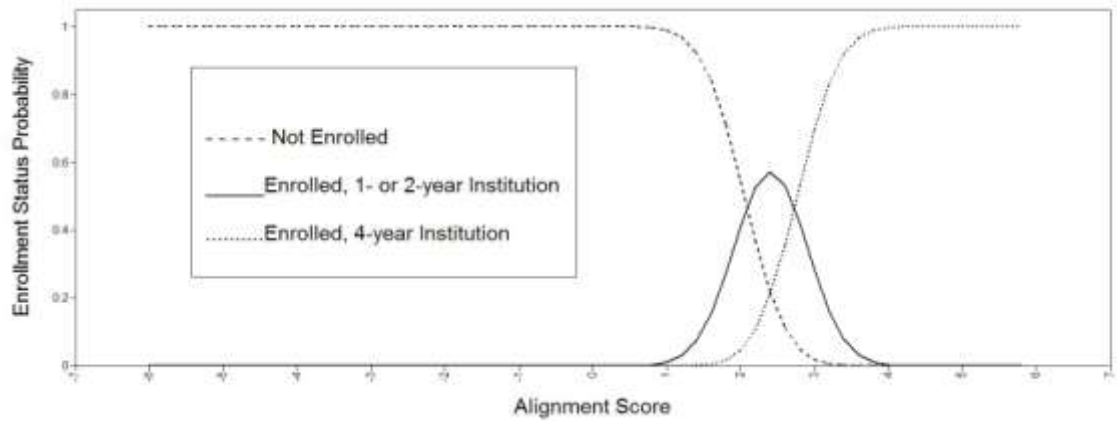


Figure AM.25. Item characteristic curve for enrollment status (outcome measure) as a function of alignment, first generation Latino sample

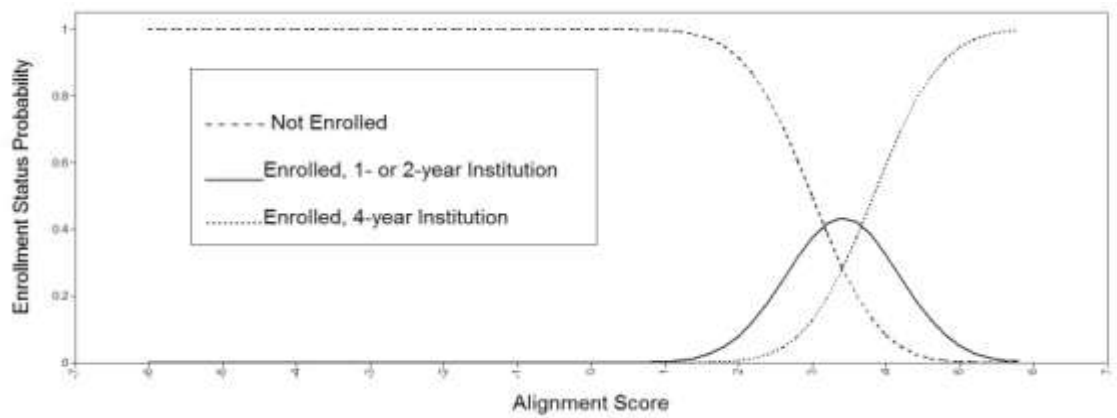


Figure AM.26. Item characteristic curve for enrollment status (outcome measure) as a function of alignment, second generation Latino sample

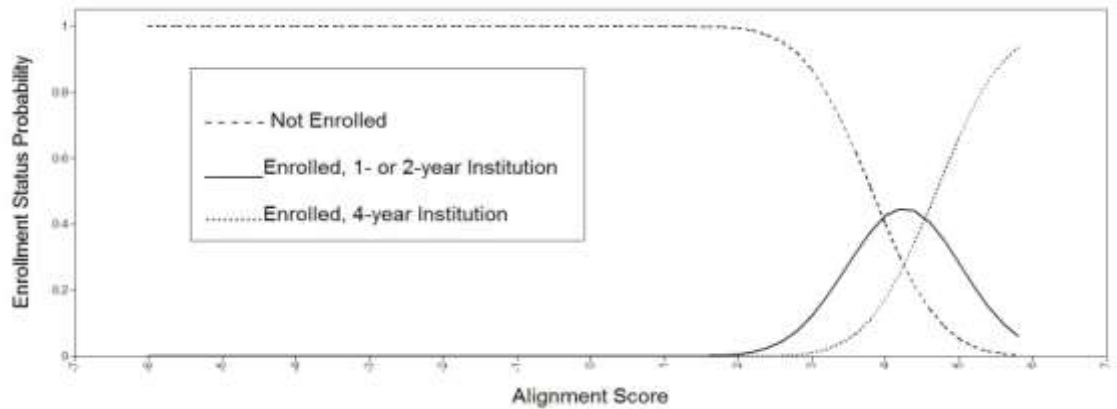


Figure AM.27. Item characteristic curve for enrollment status (outcome measure) as a function of alignment, third-plus generation Latino sample

Exploring the Relationship Between Alignment and Enrollment: What Matters Most?

In order to examine whether one indicator of the latent alignment construct was more responsible for driving the impact of alignment on enrollment than other indicators, I ran four separate models in which enrollment was regressed on each of the four alignment indicators while controlling for background covariates. The results (Table AM.2) suggest that while the number of four-year schools applied to and a student's cumulative high school grade point average have a somewhat stronger impact on enrollment, the differences across indicators in their regression coefficients and the percent of variance explained in enrollment do not appear to be large. Further, when the same model is run, but with enrollment regressed on the alignment construct, the percent of variance in the outcome explained by the model for White students is 66 % and for Latino students it is 60 %. Together, these results suggest that, as hypothesized, the powerful influence of expectation-action alignment is a synergistic effect and reflects the importance of taking multiple related steps on the path to college, not just one.

Table AM.2. *Enrollment Regressed Separately on Each Indicator of Alignment*

	Enrollment (Latino Sample)			
	<i>b</i>	SE	<i>t</i>	R ²
Whether Postsecondary Exams Taken	0.43	0.05	8.54	.37
Number of Four-Year Schools Applied To	0.47	0.04	11.31	.40
Math Coursetaking	0.38	0.04	8.53	.34
High School Grade Point Average	0.46	0.04	12.30	.39

Also relevant to the relationship between alignment and enrollment, there exists the possibility that the alignment construct does not fully capture whether or not students in the sample have taken the actions included as alignment indicators in this research. Specifically, it is possible that some students may have taken a postsecondary entrance exam or applied to one or more four-year institutions *after* completing high school and *before* enrollment data was collected in 2006. For such students, their alignment score might tend to underpredict their level of college enrollment two years later. To explore that possibility, I used "Crosstabs" in SPSS to determine what percent of students within both the Latino and White student samples had not taken either of these two steps by the spring of 12th grade but were enrolled in a four-year institution in 2006.

Within the Latino sample, 5.2 % (N=53) of students who had not applied to at least one four-year institution by the end of high school were enrolled in a four-year institution in 2006 and 9.1 % (N=93) of students who had not taken the ACT or SAT as of the spring of 2004 were nonetheless enrolled in a four-year institution in 2006. Within the White sample, 7.6 % (N=382) of students who had not applied to at least one four-year institution by the time of the first follow-up were enrolled in a four-year institution in 2006 and 7.4 % (N=372) of students who had not taken the ACT or SAT as of their senior year had still enrolled in a four-year institution by January of 2006.

As was demonstrated in this research, when students engage in critical actions and thus become highly aligned prior to the end of high school, their alignment levels can have a strong positive impact on the probability that they will enroll in a four-year college. Nonetheless, the above results demonstrate that it is still possible for students to engage in actions that align with their ambitions soon *after* completing high school and go on to enroll in a four-year college or university, either directly or via transfer from a two-year college. There would be great value in future research that seeks to understand and explain the experiences of this group of students, as they appear to be individuals who managed to beat the odds suggesting they would have been unlikely to have made it to a four-year institution in the two years after high school completion, if at all.

Breaking Down the Alignment Effect

A challenge in this research was determining how to present the effects of the regression coefficients from the full structural model in a meaningful fashion while working within the Mplus framework. I believe it would have been most meaningful to have presented marginal effects rather than, or in addition to, conditional probabilities. Also informative would have been to consider whether generating marginal effects at the mean versus average marginal effects made a difference in the interpretation of regression effects. However, it was not possible to access individual derivatives, which are required for the calculation of marginal effects, for the model using Mplus as these derivatives are not saved by the program. In the future, I am hopeful that it may be possible to run the analyses in another software program, for example Stata, that would

allow me to estimate marginal effects for this model. Alternatively, perhaps Mplus will offer the option of saving derivatives at some point in the future.

In the end, the best way to present the effects of the various model predictors in a more interpretable fashion was through the calculation of predicted probabilities. This had to be done by hand in a researcher-created Excel spreadsheet, as Mplus does not provide the option to request predicted probabilities. This results in the calculation of conditional probabilities being an aspect of this research that was arguably most prone to human error. The process involved creating a separate spreadsheet for each racial/ethnic and generation status group and then, for each sample and on each level of the outcome variable, linking the formula for the conditional probability of y (or the cumulative normal of y^*) to cells containing each of the regression coefficients for key model predictors and control covariates, as well as the prespecified values of these variables, as well as to several other parameters required for each formula.

Following advice received on the Mplus discussion board, as well as through reading on the probit regression model, I decided to present probabilities at the sample average values on model predictors and covariates to achieve "baseline" probabilities. Then, one by one, I varied each type and form of parent capital by one standard deviation (or by changing the value of a dummy-coded variable where appropriate) while holding all other predictor values constant.

One consequence of that strategy is a very large increase in the predicted probability of four-year enrollment for the "average" student in all samples used in this research given a one standard deviation increase in the level of alignment. This is likely

the result of the fact that a one standard deviation increase in alignment is a sizeable jump and one which would require a substantial shift in how a student goes about preparing for college.

For example, using the observed factor scores on the alignment construct among the Latino sample members, I split the sample into one group with an alignment score below the observed mean level of alignment and another group with an alignment score above the observed mean. As can be observed in Table A6.3, there were marked differences between the two groups in the extent to which students engaged in actions that aligned with their bachelor's-degree expectations.

Table AM.3. College-Going Actions Taken by Latino Students Scoring Above or Below the Observed Sample Mean Level of Alignment

	Latino Sample	
	< Mean Alignment	≥ Mean Alignment
Postsecondary Exam Taken	44 %	100 %
Number of Four-Year Schools Applied To	<1	>2
Math Coursetaking	<Alg II	>Alg II
High School Grade Point Average	1.32 (4-point scale)	2.77 (4-point scale)

Again, these results seem to support the notion of alignment. A student doesn't need to do just *one* thing in order to open up the option of enrolling in a four-year institution, an option which provides the most direct route to a bachelor's degree and which also offers the greatest odds of successfully realizing that goal, he or she needs to do several things. There is a synergy in the combination of these steps. The analyses regressing enrollment on each of the indicators seems to support this (see Table A6.2). While certain indicators were somewhat more predictive of enrollment, there was no one action that was driving the strength of alignment all on its own.