Abstract Title Page

Title: Does the Level of Alignment between Student College Expectations and Preparation Mediate the Influence of Parent Resources on College Enrollment among Latino and Non-Latino White Students?

Authors and Affiliations: Sarah Ryan, Carnegie Mellon University

ACKNOWLEDGEMENTS: This material is based on work supported in part by the Association for Institutional Research, the National Center for Education Statistics, the National Science Foundation and the National Postsecondary Education Cooperative under the Association for Institutional Research Grant Number (DG-1125) as well as by the Institute of Education Sciences, U.S. Department of Education, through Grant R305B1000012 to Carnegie Mellon University. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author and do not necessarily reflect the views of the Association for Institutional Research, the National Center for Education Statistics, the National Science Foundation, the National Postsecondary Education Cooperative, the Institute of Education Sciences or the U.S. Department of Education.

Abstract Body

Background / Context: Inasmuch as current U.S. population projections indicate that Latino students will comprise over half the growth in the college-age population during the coming decades, the puzzle of Latino educational attainment presents perhaps one of the most critical policy concerns relevant to any efforts targeted at increasing U.S. levels of educational attainment (Bowen, Chingos, & McPherson, 2009). Yet rates of access to, enrollment in, and completion of higher education among Latino youth have remained at levels lower than non-Latino Whites, Blacks, and Asians since at least the 1970s (Astin, 1982). While numerous explanations for lower levels of educational attainment among Latinos in the United States have been proposed, even in combination these explanations fail to completely account for the stubbornly persistent college completion gap (Desmond & Lopez Turley, 2009; Ream, 2005).

Recently, some scholars have encountered evidence suggesting that one less-recognized source of observed enrollment and attainment disparities between Latino students and their White counterparts is that at least some of the resources that parents can use to the benefit of their children during the college choice process are less convertible into successful outcomes among Latino youth (Alon et al., 2010; O'Connor et al., 2010). Less understood are the mechanisms operating to facilitate or hinder the influence of parent assets on college participation. In part, this is because most previous studies have focused on the predisposition and choice stages of the college choice process (Hossler & Gallagher, 1987) while the search phase has received less attention (Perna, 2006). However, the singular focus on enrollment rates obscures differences across racial/ethnic groups during the period when students are completing critical steps associated with preparing for and applying to college (Klasik, 2011). Arguably, it is during the search stage that access to college information is especially critical, making it especially concerning that, relative to other groups, Latino youth and their parents experience less access to information about all aspects of the college choice and enrollment process (Gándara & Contreras, 2009; Pérez & McDonough, 2008).

Expanding upon the work of Schneider and Stevenson (1999) and their notion of aligned ambitions, in this research I investigate the possibility that lower rates of resource transmission among Latino parents and children during the college choice process might reflect a lack of knowledge, accessed in part through parents' social ties, about the necessary steps students must take to enroll in a four-year institution (Tienda, 2011). Specifically, I use a national longitudinal database and structural equation modeling techniques to investigate the possibility that the degree of alignment between high school students' postsecondary expectations and their actions taken toward fulfilling those ambitions mediates intergenerational resource transmission.

Purpose / Objective / Research Question / Focus of Study: My research questions are: 1.) Does the alignment of 12th grade students' postsecondary expectations versus preparation vary between Latinos and non-Latino Whites? 2.) Is variation in students' postsecondary enrollment status as measured two years beyond the 12th grade year related to parent resources? 3.) Is alignment in 12th grade associated with parent resources as measured during the 10th grade year? 4.) Do associations among parent resources, student alignment, and initial postsecondary enrollment vary between Latinos and non-Latino Whites?

Setting: I use 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 U.S. high schools with a 10th grade in 2002.

Population / Participants / Subjects: The research sample draws from the *ELS* base-year panel of 10th graders in 2002 who also participated in the 2004 and 2006 data collection (N=13,221). The sample is limited to students who had obtained a high school credential by June of 2005 and who reported ultimately expecting to complete a BA or advanced degree in the 12th grade (N=8,555). I limit the sample to students who expected to complete a four-year degree given that I am particularly interested in whether or not students who expected to enroll in a four-year institution were actually prepared to do so. The study sample is further limited to Latino (N=1,024) and non-Latino White (N=5,420) students. By limiting the study sample to these two groups, 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 flooding the pool of potential workers as a generation of largely White baby-boomers heads into retirement.

Intervention / Program / Practice: One goal of this study is to establish expectation-action alignment as a reliable construct which can better illuminate how all three stages of the college choice process are linked together. A second goal is to compare the alignment levels of Latino students with their non-Latino White counterparts and to explore whether student alignment either hinders or facilitates the influence of various types of parent assets on students college enrollment decisions. 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. 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.

Research Design: I employ structural equation modeling (SEM) techniques (Mplus statistical software, Muthén & Muthén, 2010) to test associations among the variables and constructs of interest, per Figure 1. Specifically, I employ the four-step process outlined by Baron and Kenny (1986) to investigate whether alignment between students' postsecondary expectations and actions during high school mediates the impact of parent resources on postsecondary enrollment. Since variability across racial/ethnic groups is expected, a series of multigroup models are analyzed using invariance tests. Analytic weights are 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. Given the categorical nature of the data, the robust weighted least squares (WLSMV) estimator is used in Mplus to adjust the standard errors and model fit indices to account for cluster sampling (Muthén & Muthén, 2010).

(Please insert Figure 1 here.)

Data Collection and Analysis: The outcome of interest in this investigation is student college enrollment status in 2006. This three-level ordinal indicates whether a student was (1) not enrolled, (2) enrolled in a one- or two-year institution, or (3) enrolled in a four-year institution.

A number of controls were included in the models to reduce the probability of unmeasured selection processes accounting for the influence of parent resources on both alignment and postsecondary enrollment (see Figure 1). I include measures of parents social, economic, and human capital resources, as reported by parents in the *ELS* base-year parent questionnaire. Three latent measures of parent social capital reflect parents' capacity to gain access to college-relevant information through their relationships with school agents as well as with other parents and to share that information with their children (See Table 1 for construct indicators and reliabilities). Parent economic capital is represented by an indicator of parents' income from all sources and parent human capital is represented by a single indicator of the highest level of education completed by either parent.

The alignment construct (α=.84) is created by situating students' level of college preparation and academic performance as of the first follow-up within the context of their degree expectations. Data regarding students' actions are based on student reports, with cross-verification using institutional data. These action and performance measures have been selected based on the literature describing those steps which serve as critical precursors to enrollment in four-year institutions of higher education (Berkner & Chavez, 1997; Klasik, 2011). On the basis of that work, variables were selected which indicate whether the student is academically prepared, has taken a college entrance exam, and has applied to one or more four-year colleges.

(Please insert Table 1 here.)

Findings/ Results:

Descriptive Findings. 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. Not unexpectedly, parents of White youth have markedly higher levels of both income and education relative to parents of Latino youth.

Turning to student alignment, White youth outpace 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 as students move through the college choice process. A full documentation of descriptive statistics for both groups on all items and constructs of interest is provided in Table 2.

(Please insert Table 2 here.)

Mediated and Total Effects. Parameters from the full structural model (Table 3) were used to estimate predicted probabilities of enrollment for the average student in each sample (Table 4). As expected, the degree to which the actions students take during high school align with their college expectations has a substantial impact on their enrollment trajectories. The results suggest that increasing alignment by one standard deviation increases the predicted probability of enrollment in a four-year institution from 27 % to 76 % among Latinos and from 57 % to 96 % among Whites. Although not enough to eliminate the four-year enrollment disparity between the two groups, it is worth noting that the boost provided by a standard deviation increase in alignment for Latino students would narrow the gap.

(Please insert Tables 3 and 4 here.)

In Tables 5 and 6, 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, although parent human capital in the form of a bachelor's or advanced degree has a significant total effect on college enrollment (see Table 4). 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 5). Among White students, there is evidence that alignment fully mediates the impact of all forms of parent social capital on enrollment and also partially mediates the associations that parent income and education share with enrollment.

(Please insert Tables 5 and 6 here.)

In summary, the extent to which students come to align their college preparatory actions with their educational expectations during the search phase of college choice and enrollment process appears to be a critical precursor to realizing their ambitions for both Latino and White students. However, the degree to which parent assets can advantage their offspring during the process of preparing for and enrolling in college appears to differ importantly across groups.

The Utility of Parent Resources Across Groups. Given that 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, 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.[1] 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 7). 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, which are more easily converted into higher levels of both alignment and college enrollment among White students.

(Please insert Table 7 here.)

Conclusions: 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 actions plays in the college choice process. These findings offer direction for future controlled studies evaluating the effectiveness of policy interventions aimed at improving access to information among Latino students and parents as well as greater levels of college preparedness among Latino youth. Such studies might address:

- Whether strengthening community-based nonprofit organizations in underresourced neighborhoods actually enables these institutions to help Latino parents and students more successfully navigate the college choice process (Zhou & Kim, 2006).
- Whether better use of technology by colleges (i.e. making application and admissions information easier to find on websites, offering a consolidated application for public institutions) leads to higher enrollment rates for Latino students (College Board, 2012).
- Whether high school-based centers that serve as a point of coordination between students, parents, high-school counselors, and colleges and provide students and parents with one-on-one assistance filling out college and financial aid applications actually lead to higher rates of four-year college enrollment among Latino youth (Lee et al., 2011).
- Whether individual learning plans, an initiative that is gaining momentum at the state level, lead to an improved understanding among students and parents of the steps students need to take during middle and high school in order to fulfill their college expectations (Rennie Center, 2011).

Appendices

Appendix A. References

Allison, P. (1999). Comparing logit and probit coefficients across groups. *Sociological Methods and Research, 28*(2), 186-208.

Alon, S., Domina, T., & Tienda, M. (2010). Stymied mobility or temporary lull? The puzzle of lagging Hispanic college degree attainment. *Social Forces, 88*(4), 1807-1832.

Astin, A.W. (1982). *Minorities in American higher education.* San Francisco: Jossey-Bass.

Baron, R.M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.

Berkner, L., & Chavez, L. (1997). *Access to postsecondary education for the 1992 high school Graduates.* Washington, DC: National Center for Education Statistics.

Bowen, W.G., Chingos, M., & McPherson, M. (2009). *Crossing the finish line.* Princenton, NJ: Princeton University Press

The College Board. (2012). *The 8th annual AP report to the nation.* Available at http://professionals.collegeboard.com/data-reports-research/ap/nation

Desmond, M., & Lopez Turley, R.N. (2009). The role of familism in explaining the Hispanic-White college application gap. *Social Problems, 56*(2), 311-334.

Gándara, P., & Contreras, F. (2009). *The Latino education crisis: The consequences of failed social policies.* Cambridge, MA: Harvard University Press.

Hossler, D., & Gallagher, K.S. (1987). Studying student college choice: A three-phase model and the implications for policymakers. *College and University, 62*(3), 207-221.

Klasik, D. (2011). The college application gauntlet: A systematic analysis of the steps to four-year college enrollment. *Research in Higher Education.*

Lee Jr., J.M., Contreras, F., McGuire, K.M., Flores-Ragade, A., Rawls, A., Edwards, K., & Menson, R. (2011). The college completion agenda 2011 progress report, Latino edition. New York: The College Board Advocacy and Policy Center.

Long, S.J. (2009). Group comparisons in logit and probit using predicted probabilities. Working Paper. Retrieved from http://www.indiana.edu/~jslsoc/files_research/groupdif/groupwithprobabilities/groups-with-prob-2009-06-25.pdf

Muthén, L.K. and Muthén, B.O. (1998-2010). *Mplus User's Guide*. Sixth Edition. Los Angeles, CA: Muthén & Muthén.

O'Connor, N., Hammack, F.M., & Scott, M.A. (2010). Social capital, financial knowledge, and Hispanic student college choices. *Research in Higher Education, 51*(1), 195-219.

Pérez, P.A., & McDonough, P.M. (2008). Understanding Latina and Latino college choice: A social capital and chain migration analysis. *Journal of Hispanic Higher Education*, *7*, 249-265.

Perna, L.W. (2006). Studying college access and choice: A proposed conceptual model. *Higher Education, 21*, 91-157.

Ream, R.K. (2005). *Uprooting children: Mobility, social capital, and Mexican American underachievement.* New York: LFB Scholarly Publishing LLC.

Rennie Center for Education Research & Policy. (2011). *Student learning plans: Supporting every student's transition to college and career.* Cambridge, MA: Rennie Center.

Schneider, B., & Stevenson, D. (1999). *The ambitious generation: America's teenagers, motivated but directionless*. New Haven, CT: Yale University Press.

Tienda, M. (2011). Hispanics and U.S. schools: Problems, puzzles and possibilities. In M.T. Hallinan (Ed.), *Frontiers in Sociology of Education.* New York: Springer.

Williams, R. (2009). Using heterogeneous choice models to compare logit and probit coefficients across groups. *Sociological Methods and Research, 37*(4), 531-559.

Zhou, M., & Kim, S.S. (2006). Community forces, social capital, and educational achievement: The case of supplementary education in the Chinese and Korean immigrant communities. *Harvard Educational Review, 76*(1), 1-29.

Appendix B. Tables and Figures

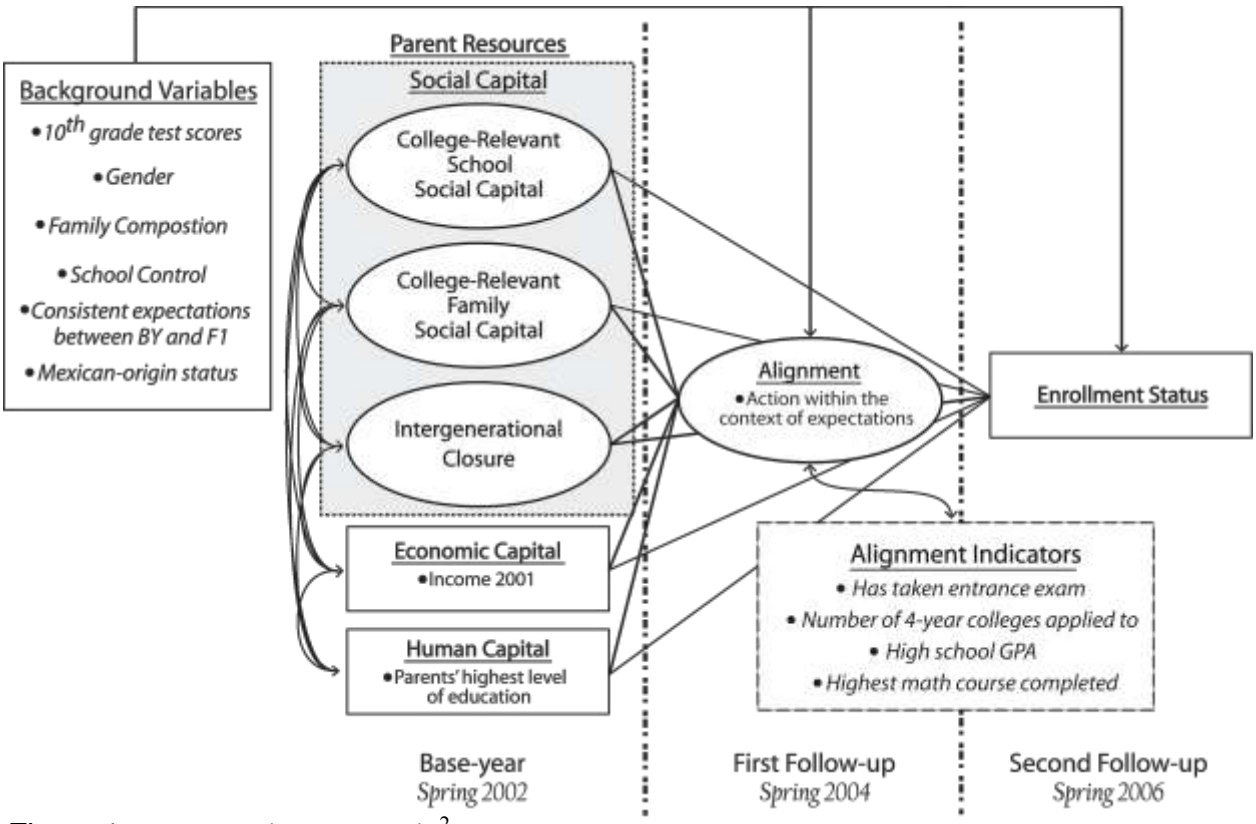

Figure 1. Conceptual Framework.[2]

Table 1. *Latent Construct Reliabilities and Standardized Factor Loadings*

Latent Construct and *ELS:2002* Item Label	Item Description	Factor Loading: Latino Student	Factor Loading: White Student
Alignment (α=.84)			
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 (α=.85)			
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 (α=.81)			
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 (α=.87)			
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 2. *Descriptive Statistics on Primary Study Measures*

	M(SD): Latina/o Student	M(SD): White Student	Range
Parent Resources			
Social Capital			
College-Relevant School Social Capital[a] **	0.43(0.89)	0.86(0.82)	-0.63 - 2.94[b]
*How often parent contacts school about academic program** *	1.36(0.61)	1.48(0.67)	1(never) - 4(5+ times)
*How often parent contacts school about course selection** *	1.27(0.53)	1.34(0.54)	1(never) - 4(5+ times)
How often parent contacts school about plans after high school	1.23(0.50)	1.24(0.50)	1(never) - 4(5+ times)

College-Relevant Family Social Capital[a]			
*How often parent provides advice about course selection***	0.71(0.87) 2.36(0.68)	0.57(0.82) 2.45(0.61)	-0.89 - 1.98 1(never) - 3(often)
How often parent provides advice about entrance exams	2.15(0.79)	2.18(0.72)	1(never) - 3(often)
How often parent provides advice about applying to college	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
*Knows mother of child's closest friend***	0.79(0.41)	0.88(0.33)	0(no) - 1(yes)
*Knows father of child's closest friend***	0.57(0.50)	0.77(0.42)	0(no) - 1(yes)
*How often parent of child's friend gives advice about teachers and courses at the school***	1.33(0.66)	1.56(0.80)	1(never) - 4(5+ times)
*How often parent of child's friend does favor***	2.07(1.13)	2.44(1.05)	1(never) - 4(5+ times)
*How often parent does favor for parent of child's friend***	2.17(1.11)	2.54(1.05)	1(never) - 4(5+ times)
Economic Capital			
Income**	8.31(2.41)	10.02(1.85)	1(no income) - 13($200,000+)[3]
Human Capital			
Education**	1.91(0.80)	2.39(0.73)	1(no college) - 3 (BA or higher)
Student Alignment			
Expectation-Action Alignment[a]	3.40(0.95)	4.06(1.02)	1.48 - 5.79
*High school GPA***	4.06(1.37)	4.74(1.19)	0(0.00-1.00) - 6(3.51-4.00)
*Highest math course completed***	2.23(0.76)	2.53(0.68)	1(< Alg II) - 3(> Alg II)
*Has take a college entrance exam***	0.68(0.47)	0.90(0.30)	0(no) - 1(yes)
*Number of four-year institutions applied to***	1.40(1.21)	1.76(1.12)	0(none) - 3(2+)
College Enrollment			
Level of enrollment in 2006**	2.00(0.85)	2.37(0.82)	1(not enrolled) - 3(four-year enrolled)
Background Covariates			
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.[4]

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

**Mean differences significant at $p \leq .01$[5]

Table 3. *Full Structural Model*

	College Enrollment Status					
	Latina/o Sample			White Sample		
	b	SE	*t*	*b*	SE	*t*
Parent Resources						
Social Capital						
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
Economic Capital						
Income	0.01	0.02	0.35	0.03	0.01	2.45
Human Capital						
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
Student Alignment						
Expectation-Action Alignment	*0.98*	0.08	12.15	*1.03*	0.05	20.69
Background Covariates						
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
Fit Statistics						
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.

Table 4. *Predicted Probabilities of College Enrollment from Probit Regression Model*

	Latina/o Student			White Student		
	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 5. *Decomposition of the Total Effect of Parent Resources on College Enrollment, Latino Sample*

	Direct Effect			Indirect Effect through Alignment			Total Effect		
	b	SE	*t*	*b*	SE	*t*	*b*	SE	*t*
Parent Resources									
Social Capital									
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
Economic Capital									
Income	0.01	0.03	0.24	0.01	0.02	0.45	0.02	0.02	0.81
Human Capital									
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 6. *Decomposition of the Total Effect of Parent Resources on College Enrollment, White Sample*

	Direct Effect			Indirect Effect through Alignment			Total Effect		
	b	SE	*t*	*b*	SE	*t*	*b*	SE	*t*
Parent Resources									
Social Capital									
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
Economic Capital									
Income	0.03	0.01	2.31	0.03	0.01	3.35	0.06	0.01	5.16
Human Capital									
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.

Table 7. *Differences in the Influence of Parent Resources on Student Alignment and Enrollment across Latino and White Youth*

	Alignment			Enrollment (Total)		
	df	$X\Delta$	*p* value	df	$W\Delta$	*p* value
Parent Resources						
Social Capital						
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
Economic Capital						
Income	1	0.21	.65	3	5.15	.16
Human Capital						
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.

[1] 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 1in 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)

[2] 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.

[3] 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.

[4] 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.

[5] 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.