THE IMPLICATIONS OF EDUCATIONAL ASPIRATION-EXPECTATION MISMATCH FOR SUBSEQUENT EDUCATIONAL ATTAINMENT OUTCOMES

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ABSTRACT

Brian Foster: The Implications of Educational Aspiration-Expectation Mismatch for Subsequent Educational Attainment Outcomes
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Adolescents express multiple, sometimes conflicting school-related beliefs, including educational aspirations and expectations that do not align. Although the independent effects of aspirations and expectations on academic outcomes are robust and widely documented, it is unclear how consequential these beliefs may be when they are discordant. Using data from the National Longitudinal Study of Adolescent Health, I find that adolescents who express aspirations that do not align with their expectations attain fewer years of education than their counterparts who do not. In addition, a notable proportion of adolescents express aspirations that are lower than their expectations. Findings from this study offer new insights regarding how adolescents process mixed interpersonal and institutional messages about their academic potential, and at what cost.

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INTRODUCTION

Educational aspirations and expectations are important mechanisms in the processes of status attainment and social reproduction (Bourdieu 1973; Bowles and Gintis 1976; Collins 1971; Duncan, Featherman, and Duncan 1972; Haller 1982; Sewell, Haller, and Ohlendorf 1970; Sewell, Haller, and Portes 1969; Spenner and Featherman 1978). Aspirations are predictive of many educational outcomes, including academic grades and educational attainment (Beal and Crockett 2010; Downey, Ainsworth, and Qian 2009; Kao and Thompson 2003). They are conceptualized as desires for a level of education and thought to reflect general valuation of schooling without conscious considerations of structural constraints (for a review see Kao and Tienda 1998). Educational expectations are drawn from adolescents' personal experiences and refer to the perceived likelihood of reaching a level of attainment via a specific educational pathway (Museus, Harper, and Nichols 2010). They shape the timing and sequencing of postsecondary educational experiences. For example, students who expect to go further in school enroll in college earlier and, upon enrollment, finish their degree programs sooner than their counterparts (Morgan 2005). These relationships have been replicated using diverse methodological approaches and datasets, suggesting that adolescent educational aspirations and expectations have robust impacts on overall status attainment trajectories (Andrew and Hauser 2011; Mello 2009)

Although the independent effects of aspirations and expectations on educational outcomes are widely documented, it is unclear how consequential mismatch between these beliefs may be for educational attainment. Using data from the National Longitudinal Study of Adolescent Health, this paper examines whether exhibiting aspiration-expectation mismatch during adolescence is associated with differential levels of postsecondary educational attainment among a nationally representative sample of US adolescents. This paper takes a broader approach than previous examinations by expanding the operational definition of mismatch and by extending analyses to a representative sample of US adolescents. Findings suggest that exhibiting aspiration-expectation mismatch during adolescence is detrimental for educational attainment in early adulthood. These findings may offer new insights on how adolescents process mixed interpersonal and institutional messages about their academic potential, and at what cost.

BACKGROUND

Most adolescents include postsecondary education in their plans for the future. By eighth grade, nine in ten aspire to at least "some college," with about six in ten aspiring to complete a four-year degree or more (Kao and Tienda 1998). Since 1980, the proportion of high school sophomores expecting to complete a four-year degree has risen from less than half to greater than three-fourths (Goyette 2008). These patterns are broadly consistent across race and gender lines and have been linked to many educational outcomes, including high school academic achievement and postsecondary educational attainment (Kao and Tienda 1998; Morgan 2005).

Attitude-Achievement Paradox

Not all adolescents' positive school-related attitudes translate to high levels of educational attainment. Specifically, although the positive attitudes of female adolescents are consistent with their high levels of attainment (Entwisle, Alexander, and Olson 2007; Sum et al.

2003), the attitudes of black adolescents consistently translate to lower levels of attainment than those of their white counterparts (Downey et al. 2009; Morgan 2005). These patterns suggest an "attitude-achievement paradox" in which adolescents' schooling attitudes differentially translate to future educational attainment depending on their racial/ethnic background (Mickelson 1990). Indeed, (Morgan 2005) finds that each additional year of education expected during the sophomore year of high school is associated with .182 additional years of attained education for white male students but only .080 additional years for black male students.

The differential returns to school-related attitudes for black and white students have been linked to many factors, including measurement error (Fuller 2009), structural processes (Kerckhoff 1976; MacLeod 1995), and cultural particularities (Fordham and Ogbu 1986; Fryer Jr and Torelli 2010). However, there is little consensus regarding whether these alternate possibilities fully explain the gap between beliefs and outcomes (for a review see (Morgan 2005). Other scholars have continued to focus on the conceptual distinctions between types of attitudes (see also (Eccles and Wigfield 2000).

Abstract and Concrete Schooling Attitudes

Mickelson (1990) distinguishes between abstract and concrete attitudes, finding that concrete, or personalized, attitudes are more important for academic outcomes than abstract, or general, ones. For example, believing that a family member will be mistreated at work "no matter how much education they have" (i.e., a concrete attitude) has a larger impact on academic achievement than believing that education can "help poor people become middle class" (i.e., an abstract attitude). (Harris 2011) distinguishes between adolescent valuation of schooling and beliefs in barriers to upward mobility, finding that attributing value to education is an important predictor of academic achievement while the expectation of encountering obstacles is not.

Findings from (Mickelson 1990) and (Harris 2011) are relevant for two reasons. First, they demonstrate that adolescents may simultaneously express multiple, potentially conflicting beliefs about their schooling trajectories. For example, an individual may hold positive abstract attitudes about the societal value of schooling while expressing more modest concrete attitudes about the utility of schooling in their own lives. Further, students may attribute value to schooling but still anticipate encountering structural obstacles. Next, although the findings add to extant literature linking school-related attitudes to academic outcomes, they do not examine the potential consequences of expressing attitudes that do not align. This study builds on these analyses by examining two additional types of school-related beliefs, educational aspirations and expectations, and how mismatch between them during adolescence impacts educational attainment in early adulthood.

Aspiration-Expectation Mismatch

Previous studies find some evidence of mismatched educational aspirations and expectations among US adolescents. In an analysis of high-achieving high school seniors, (Hanson 1994)found that 16 percent of adolescents had aspirations that exceeded their expectations. She referred to these adolescents, along with their counterparts who developed but did not realize expectations of a college degree or who developed but did not maintain expectations of a college degree, as "lost talent." Other scholars have built upon these findings by examining the background characteristics associated with unfulfilled expectations (Trusty and Niles 2004) and by considering the long-term implications of unfulfilled expectations on adolescent depressive symptomology (Reynolds and Baird 2010). Still, aspiration-expectation mismatch remains an understudied type of lost talent with potential psychosocial and material implications.

Boxer et al. (2011) examines the psychosocial implications associated with aspiration-expectation mismatch, focusing on depressive symptomology, test anxiety, and school bonding. They find that adolescents who exhibit aspiration-expectation mismatch have heightened levels of emotional and behavioral difficulties (assessed through the Strengths and Difficulties Questionnaire), higher levels of test anxiety, and lower levels of school bonding than their counterparts. Although this study suggests that there are potentially detrimental psychosocial effects associated with aspiration-expectation mismatch, it does not consider the ramifications of mismatch for other types of outcomes, specifically educational attainment. Through an analysis of panel data from a nationally representative sample of US adolescents, this paper examines (1) the extent to which adolescents express educational aspirations and expectations that do not align and (2) how this aspiration-expectation mismatch impacts future educational attainment.

In previous work on this topic, aspiration-expectation mismatch has been operationalized in only one direction--aspirations that exceed expectations--and analyses have been restricted to high-achieving adolescents with expectations of a college degree (Boxer et al. 2011; Hanson 1994). This paper imposes no such constraints. First, I consider any type of mismatch, including that in which students report aspirations that are *lower* than their expectations. Although (Hanson 1994) cites structural disadvantage as a potential reason that adolescents express aspirations that exceed their expectations, youth who develop expectations that are higher than their aspirations may represent an entirely different, more advantaged group who do not "need" college credentials (Mangino 2012). Next, I extend analyses to a representative sample of US adolescents, ensuring a valid assessment of mismatch and making findings generalizable to the entire national population of youth.

DATA

This paper uses data from Wave I and Wave IV of the National Longitudinal Study of Adolescent Health (Hereafter Add Health). Add Health is an ongoing project that focuses on developmental and health trajectories across the life course. It has followed a nationally representative cohort of US adolescents in grades 7-12 in 1994-95 for over fifteen years as they completed high school and transitioned to early adulthood. The study used a multistage, stratified, cluster sampling design and drew from a total of 132 schools, varying in size from 100 to over 3,000 students. In the first stage of Wave I data collection, over 90,000 adolescents were issued an in-school survey (a self-administered instrument) during a 45- to 60-minute class period (Harris 2009). Of these 90,000 adolescents, 20,745 adolescents also received in-home surveys. Wave IV of the survey was administered in 2008 when individuals were between 24 and 32 years old. The Wave IV response rate was over 80 percent. While response rates did vary by gender, age, and immigrant status, sampling weights adjust for this attrition, limiting the amount of bias introduced and allowing the Wave IV sample to adequately represent the baseline population (Harris 2009).

Dependent Variable: Educational Attainment

The outcome variable in this analysis comes from Wave IV of Add Health. Respondents were asked, "What is the highest level of education that you have achieved to date?" Responses ranged from "8th grade or less" to "completed post baccalaureate professional education." To convert these ordinal groupings to a more desirable, interval level measure of education, I utilize the popular midpoint scoring transformation (Shryock, Siegel, and Larmon 1980). For example, individuals who report attainment levels of "8th grade or less" are coded as having 4 years of schooling. Re-coding educational attainment as a continuous variable allows for a more detailed

analysis of educational attainment differences than would be possible with dichotomous or categorical specifications.

Independent Variables: Aspiration-Expectation Mismatch

The primary explanatory variable in this analysis is aspiration-expectation mismatch, which is derived from two survey items. Respondents were first asked about their aspirations: "On a scale of 1 to 5, where 1 is low and 5 is high, how much do you want to go to college?" That question was followed by an assessment of their expectations: "On a scale of 1 to 5, where 1 is low and 5 is high, how likely is it that you will go to college?" Mismatch scores are computed by taking the absolute value of the difference between an adolescent's aspirations and expectations ($Mismatch_1 = Aspirations_1 - Expectations_1$). Table 1 shows the distribution of raw mismatch scores as well as their absolute value recodes.

Table 1. Raw Aspiration-Expectation Mismatch Scores and Absolute Value Recodes (N=11,445)

Wave 1 Aspiration-Expectation Mismatch Scores			
Raw Scores	Proportion	Absolute Value	Proportion
-4	0.002	0	0.63
-3	0.003		
-2	0.01	1	0.28
-1	0.07		
0	0.63	2	0.08
1	0.21		
2	0.06	3	0.01
3	0.007		
4	0.007	4	0.01
N	11,445	N	11,445

Source: The National Longitudinal Study of Adolescent Health

In previous research, mismatch was either coded dichotomously (yes/no) (Hanson 1994) or continuously (Boxer et al. 2011). In both cases, however, only individuals with aspirations that exceeded expectations were included. Yet Table 1 shows that a substantial proportion of

adolescents (~8%) express aspirations that are *lower* than their expectations. This pattern of "reverse mismatch" represents 23 percent of all aspiration/expectation discrepancies, validating the need for a broader operational definition. Thus, while I follow (Boxer et al. 2011) strategy of treating mismatch as a continuous variable, I include adolescents whose aspirations are lower than expectations as well as those who exhibit the more common, opposite pattern.

Table 2 further validates the coding strategy. Bivariate coefficients show that educational attainment decreases as magnitude of mismatch increases for both positive and negative mismatch scores. Thus, while the direction of aspiration-expectation mismatch does matter for educational attainment (i.e., positive mismatch scores are associated with fewer years of schooling than negative mismatch scores), focusing on the *magnitude* of mismatch effectively demonstrates the overall pattern.

Table 2. Weighted Bivariate OLS Coefficients for Educational Attainment Differences by Magnitude of Aspiration-Expectation Mismatch (N=11,445)

Raw Scores	
-4	-1.092
-3	-1.239***
-2	-.300
-1	-.471***
0	1.205***
1	-.781***
2	-1.451***
3	-1.640***
4	-1.839***
N	11,445

Source: The National Longitudinal Study of Adolescent Health
*** p<0.01, ** p<0.05, * p<0.1 (Two-Tailed)

Additional Variables: Adolescent Demographic Characteristics, Family Background Characteristics, and Adolescent School Experiences/Attitudes

All covariates come from Wave I of the survey and include adolescent demographic characteristics, adolescent's family background characteristics, and adolescent's schooling experiences and attitudes. Adolescent race is based on self-reports from the in-home interview. I use a four-category classification: white, black, Asian, and American Indian/Other (Harris, Perreira, and Lee 2009). Following recent scholarship in the study of the measurement of race and ethnicity, I treat Hispanic/Latino as an ethnic category (Lee and Bean 2004; Perez and Hirschman 2009; Perez 2007). For analysis, I group all adolescents who reported Hispanic/Latino ethnicity and combine this category with the four-category race variable. Thus, the final race classification includes non-Hispanic white, non-Hispanic black, non-Hispanic Asian, non-Hispanic American Indian/Other, and Hispanic (Harris et al. 2009).

Adolescent's family background characteristics include parental education, family structure, perceived parental educational expectations, and parental involvement in school-related activities. Parental education is included as a proxy for family socioeconomic status. It is derived from the highest level of educational attainment between an adolescent's parents and ranges from "no school" to "professional training after college" (Harris and Ryan 2004). Following the same method of coding used for adolescent educational attainment, I recode parental education to its corresponding midpoint in years. Family structure distinguishes between adolescents who lived in a household with (1) both of their biological parents or two adoptive parents, (2) one biological parent and one non-biological parent, (3) a single parent, or (4) two step parents or some other arrangement (Harris and Ryan 2004). Perceived parental educational expectations is based on a survey instrument that asked adolescents, "On a scale of 1 to 5, where 1 is low and 5 is high, how disappointed would (your parent figure) be if you did not graduate

from high school?" Parental involvement is based on three items asking adolescents whether they had talked about school or worked on a school-related project with their (parent figure) in the four weeks prior to the survey.

Adolescent schooling experiences include grade point average (GPA) and responses to questions asking if they had ever repeated/been held back a grade, received out of school suspension, or skipped school. Adolescent GPA corresponds to the average of adolescent self-reports of their most recent grades in English/language arts, mathematics, history/social studies, and science. Adolescent general attitudes about schooling are assessed via two standardized composite measures. First, school connectedness (α=0.76) is assessed with a five-item scale adapted from other frameworks (Ozer 2005). The scale includes items like "I feel close to people at my school" and "The teachers at my school treat students fairly." Student engagement (α=.70) is assessed with two-items (Simons-Morton and Crump 2003), including "I have had trouble paying attention in school," and "I have had trouble getting my homework done." Composite scores are calculated and tested for consistency using Cronbach's alpha values. The appendix includes a full description of all variables included in analysis.

Sample Selection

The initial sample size for this study included 15,701 respondents who received interviews at Wave I and Wave IV. Before analysis, however, several sequential sample restrictions were necessary. First, to take Add Health's complex survey design into account, analyses were limited to respondents with valid sampling weights (n=14,800) (Chantala and Tabor 2012). Only adolescents who were in school at Wave I (n=14,534) and had valid responses for educational aspirations and expectations (n=14,466) were retained. Next, individuals were selected only if they were *still* enrolled in a postsecondary program when the

Wave IV survey was administered (n=12,031). Finally, I used casewise deletion to address cases with missing values for one or more of the included covariates. Thus, the full analytic sample includes adolescents who were enrolled in middle or high school at Wave I, not enrolled in a postsecondary program at Wave IV, and had values for educational attainment, aspirations, expectations, and the included covariates (N=11,445).

I first report univariate and bivariate descriptive statistics for variables included in analysis. Next, I report OLS regression coefficients for the relationship between educational attainment and aspiration-expectation mismatch for the entire sample. Model 1 includes the bivariate relationship between aspiration-expectation mismatch and educational attainment. Given extant literature citing the independent effects of educational aspirations and expectations on attainment (Morgan 2005; Museus et al. 2010), I account for aspirations and expectations in Model 2. In Model 3, I add adolescent demographic characteristics. Model 4 adjusts for family background characteristics, and Model 5 accounts for adolescents' schooling experiences. The final Model 6 includes adolescents' general attitudes about schooling.

Because Add Health is a school-based survey and because post-secondary educational attainment is associated with school-level characteristics such as geographic location (Garner and Raudenbush 1991), school resources (Dearden, Ferri, and Meghir 2002), and institutional practices (Oakes 2005; Tyson 2011), it is important to consider potentially significant variation in long-term educational attainment between students who attended different childhood schools as adolescents. This could manifest in many ways, including schools in particular regions exhibiting higher aggregate levels of attainment (Ryan and Siebens 2012), schools from affluent districts providing more academic and extracurricular resources (Bennett, Lutz, and Jayaram

2012), or racialized tracking practices placing some students on different educational and vocational pathways (Oakes 2005; Tyson 2011).

To assess this concern, I calculated the interclass correlation coefficient for educational attainment. The coefficient for the analytic sample is 0.120, suggesting that about 90 percent of the variation in educational attainment is within schools (i.e., between individuals). Thus, although multi-level models are often ideal for analysis of nested data, they provide little added value here because little of the variation in educational attainment is attributable to between-school differences. Still it is necessary to account for Add Health's stratified sampling strategy, clustered sampling design, and nonresponse bias. I address potential design effects by using appropriate sample weights and survey analysis techniques. Specifically, poststratification sample weights ensure that population estimates at Wave IV conform to population estimates from individuals eligible for Wave I interviews; thus results are representative of the US school population in grades 7-12 in 1994-1995. In addition, I use software (e.g., *STATA 12*) that incorporate stratum and cluster variables, which account for the stratified, clustering design effects of Add Health

RESULTS

Descriptive Results

Descriptive statistics are reported in Table 3. Means and standard deviations are reported for dichotomous and continuous variables. Proportions are reported for categorical variables (i.e., race). In general, adolescents expressed both high educational aspirations and expectations. Eighty-three percent and seventy-six percent selected greater than a "3" for their aspirations and expectations respectively. Further, the average response for both aspirations and expectations was a "4." In spite of overall high aspirations and expectations, however, almost 37 percent of

respondents exhibited some level of aspiration-expectation mismatch. This demonstrates that defining mismatch only in terms of aspirations that exceed expectations and limiting analyses to high-achieving adolescents with expectations of a college degree underestimates the prevalence of mismatch by greater than half.

By Wave IV, 71 percent of the sample had continued their education beyond high school. Of those respondents who continued beyond high school, a third stopped their education at a Bachelor's degree, and about 13 percent continued to a post-baccalaureate program. These respondents with a Bachelor's degree or more constitute 43 percent of the entire sample. The modal category for educational attainment was 14 years, the equivalent of "some college (including vocational/technical training) but no four-year degree."

Table 3. Weighted Means (and Standard Deviations) for Adolescent Demographic Characteristics, Family Background Characteristics, Adolescent Schooling Experiences, and Adolescent General Schooling Attitudes (N=11,445)

Variables	Total	No Mismatch	Any Mismatch
Educational Attainment (Years)	14.01	14.49	13.29
	(2.45)	(2.5)	(2.1)
Adolescent Demographic Characteristics			
Female Adolescent	0.49	0.53	0.43
	(0.5)	(0.5)	(0.5)
*Non-Hispanic white	0.71	0.72	0.68
*Non-Hispanic black	0.14	0.14	0.15
*Non-Hispanic Asian	0.03	0.03	0.03
*Non-Hispanic American Indian/other	0.01	0.01	0.01
*Hispanic	0.11	0.09	0.13
School Year	9.40	9.5	9.26
	(1.7)	(1.72)	(1.65)
Family Background Characteristics			
Parental Education (Years)	13.56	14	12.79
	(3.13)	(3.12)	(3.02)
Family Structure			
2 Biological/2 Adoptive Parents	0.58	0.61	0.51
	(0.49)	(0.49)	(0.01)
1 Biological + 1 Non-biological Parent	0.16	0.15	0.19
	(0.37)	(0.36)	(0.39)
Single Parent	0.22	0.2	0.26

	(0.42)	(0.40)	(0.44)
2 step Parents/Other	0.04	0.03	0.04
	(0.19)	(0.18)	(0.2)
Parental Educational Expectations	4.01	4.2	3.86
	(1.22)	(1.17)	(1.27)
Parental Involvement	1.38	1.42	1.31
	(1.00)	(1.01)	(0.99)
Adolescent Schooling Experiences			
Repeated a Grade	0.21	0.17	0.29
	(0.41)	(0.38)	(0.45)
Received Out of School Suspension	0.26	0.22	0.34
	(0.44)	(0.42)	(0.47)
Expelled from School	0.04	0.028	0.056
	(0.19)	(0.17)	(0.23)
Skipped School	0.27	0.23	0.33
	(0.44)	(0.42)	(0.47)
Grade Point Average	2.8	2.94	2.56
	(0.77)	(0.74)	(0.75)
General Schooling Attitudes			
School Connectedness	0.04	0.127	-.117
	(1.00)	(0.97)	(1.03)
Student Engagement	-.02	0.09	-.21
	(1.00)	(0.95)	(1.06)
Aspirations	4.41	4.54	4.2
	(1.05)	(1.02)	(1.05)
Expectations	4.14	4.54	3.46
	(1.16)	(1.02)	(1.06)

Source: The National Longitudinal Study of Adolescent Health
Note: Weighted means and standard deviations are reported for dichotomous and continuous variables. *Proportions are presented for adolescent race.

Of adolescents exhibiting aspiration-expectation mismatch, about 43 percent were female. The distribution of mismatch across racial groups mirrored that of the full sample, except for among Hispanics, who were slightly overrepresented in the mismatch category. Adolescents expressing mismatched aspirations and expectations indicated that they had more problem experiences in school, reported lower grade point averages, less educated parents, lower perceived parental educational expectations, and lower levels of parental involvement. This pattern extended to postsecondary educational attainment, with adolescents exhibiting mismatch attaining about 12.8 years compared to 14 years for their counterparts.

Multivariate Results

Weighted OLS coefficients are presented in Table 4. Bivariate results from Column 1 show that individuals who exhibit aspiration-expectation mismatch during adolescence go on to earn fewer years of postsecondary educational attainment than their counterparts whose aspirations match their expectations. Specifically, as the magnitude of aspiration-expectation mismatch increases, whether aspirations are lower or higher than expectations, individuals earn about .78 fewer years of educational attainment. Thus, an adolescent with an aspiration-expectation mismatch value of "-2" or "2" (~8% of the entire sample) earns about one and one half fewer years of educational attainment than their counterparts with no mismatch

Results in Column 2 show that more than a third of the mismatch effect persists even after accounting for levels of aspirations and expectations directly. This highlights the importance of assessing the interplay between these constructs in addition to their independent influences. Column 3 shows that very little of the mismatch effect is explained by adolescent background characteristics and that after including family background characteristics in the model, 73 percent of the effect remains. Most of the effects of family background characteristics are attributable to parental educational attainment and family structure. School experiences explain about half of the remaining mismatch effect. That is, once adverse experiences in the school environment (e.g., repeating a grade, receiving out of school suspension, etc.) are accounted for, aspiration-expectation mismatch is less detrimental for overall levels of educational attainment. Still, it remains important. Coefficients for the full model are included in Column 6, and show that net of adolescent background characteristics, parent background, schooling experiences, and schooling attitudes, including educational aspirations and

expectations, aspiration-expectation mismatch remains detrimental to overall levels of postsecondary educational attainment.

Table 4. Weighted OLS Coefficients for Educational Attainment Differences (N=11,445)

	M1	M2	M3	M4	M5	M6
Aspiration-Expectation mismatch	-0.775***	-0.278***	-0.259***	-0.185***	-0.096**	-0.100**
Aspirations		0.248***	0.312***	0.292***	0.236***	0.234***
Expectations		0.617***	0.536***	0.368***	0.170***	0.169***
Adolescent Demographic Characteristics						
Female Adolescent			0.324***	0.391***	0.136***	0.151***
Black Adolescent			-0.613***	-0.274**	0.039	0.066
Asian Adolescent			0.529**	0.491**	0.334	0.33
Am. Indian/other Adolescent			-0.438*	-0.208	-0.026	-0.019
Hispanic Adolescent			-0.578***	-0.011	0.0896	0.094
Adolescent School Year			0.230***	0.212***	0.226***	0.226***
Family Background Characteristics						
Parental Education (Years)				0.223***	0.179***	0.177***
Family Structure (Ref = 2 bio/adop. Par)						
1 bio par + 1 non-bio par				-0.584***	-0.375***	-0.381***
Single Par				-0.407***	-0.162**	-0.163**
2 step Par./Other				-0.740***	-0.419***	-0.418***
Perceived Parental Educational Expectations				0.024	0.0388	0.038
Parental Involvement				0.101***	0.042	0.040
Schooling Experiences						
GPA					0.824***	0.845***
Repeated a Grade					-0.642***	-0.642***
Received Out of School Suspension					-0.365***	-0.368***
Skipped School at least once					-0.278***	-0.293***
Expelled from School					-0.399***	-0.406***
General Schooling Attitudes						
School Connectedness						0.0472
Student Engagement						-0.080***
Constant	14.44	10.56***	8.415***	6.145***	5.635***	5.621***
R-Squared	0.059	0.178	0.222	0.314	0.408	0.409
N	11,445					

Source: The National Longitudinal Study of Adolescent Health
*** p<0.01, ** p<0.05, * p<0.1 (two-tailed)

DISCUSSION

Adding to current findings documenting the independent effects of aspirations and expectations on educational outcomes (Andrew and Hauser 2011; Beal and Crockett 2010; Downey et al. 2009; Kao and Thompson 2003; Museus et al. 2010), findings from this study

show that adolescents attain fewer years of postsecondary education when these attitudes do not align. The effect of aspiration-expectation mismatch persists after accounting for demographic and family background characteristics as well as schooling experiences and attitudes. Importantly, although independent measures of aspirations and expectations account for a large proportion of the mismatch effect, they do not completely explain it away. Thus, this study suggests that in addition to examining schooling attitudes independently, it is important to consider how they relate to each other, especially when they do not align.

Given the prevalence of aspiration-expectation mismatch among US adolescents and its implications for educational attainment, it is important to consider its potential underlying determinants. While these processes were not the focus of the present study, findings do provide some clues. First, after accounting for independent measures of aspirations and expectations, adolescent schooling experiences explain the largest percentage of the mismatch effect, suggesting that something occurs within schools that generates mismatched beliefs about one's academic future. One possible source is the disciplinary policies and practices instituted in schools. Students may interpret multiple encounters with school sanctioning and other negative experiences like academic failure as an indicator of their future academic potential and develop mismatched beliefs (e.g., aspirations that exceed expectations) that reflect this uncertainty. Given literature suggesting that students from disadvantaged backgrounds are more likely than their counterparts to receive in-school sanctioning and/or be held back/repeat a grade (Entwisle et al. 2007; Kao and Tienda 1998; Pascoe 2011), this may serve to widen extant achievement disparities.

Adolescents may also exhibit aspirations that are lower than their expectations. In this case, disadvantaged adolescents might face heightened expectations from parents and other

family members who expect them to serve as a source of economic capital (Harding 2010; MacLeod 1995). This pressure could cultivate feelings of ambivalence about future schooling pathways such that adolescents may begin to expect to achieve higher levels of attainment than they actually aspire to. To be sure, adolescents whose aspirations are lower than their expectations could represent an entirely different, more advantaged, population of adolescents. In this case, because advantaged youth rely less on education for economic and occupational mobility (Mangino 2012), they may develop high educational expectations that comply with family norms, both in terms of parental expectations and educational attainment, while also maintaining more modest aspirations. These explanations seem plausible given that family background characteristics explained the second largest proportion of mismatch effect, although perceived parental educational expectations were not significant in any of the models.

Limitations/Future Research

Given past findings that there are racial and gender differences in the expression of school-related attitudes (Downey et al. 2009; Harris 2010, 2011; Lopez 2003; Mickelson 1990) and differential returns to these attitudes along lines of race (Downey et al. 2009), findings from this study should be extended to include race and gender comparisons. For example, both black and female students attribute value to schooling and maintain positive attitudes about their educational and occupational future although they expect to encounter structural obstacles (Harris 2010, 2011; Lopez 2003; MacLeod 1995; Tyson, Darity, and Castellino 2005). Do these patterns extend to aspiration-expectation mismatch? That is, are black and/or female youth less likely to express mismatched aspirations and expectations than their counterparts? Are they less likely to be adversely affected by it?

Next, while this study provides strong evidence that the magnitude of aspiration-expectation mismatch has robust effects on educational attainment, it does not include a test of whether direction of mismatch is also important. For example, do adolescents whose aspirations exceed their expectations earn more or less education than their counterparts whose aspirations are lower than their expectations? While bivariate results from Table 1 provide some evidence, additional analysis is needed. Further, what are the characteristics of adolescents with aspirations that are lower than their expectations? Are they more or less advantaged than their counterparts?

Finally, future analyses should use more sophisticated modeling techniques (e.g., multi-level models) that account for between-school variation in educational attainment. While the interclass correlation coefficient for educational attainment suggests that much of the variation in educational attainment occurs between individuals and not between schools, it is still useful to consider school-level characteristics in analyses. This would allow for a more direct assessment of the role that structural process, including institutional practices (Oakes 2005; Tyson 2011), play in the prevalence and effect of aspiration-expectation mismatch.

CONCLUSION

School-related attitudes are important mechanisms in the educational attainment process. They represent student motivation and often times reflect students' social location and personal experiences. This study demonstrates that discordance between these beliefs during adolescence may translate to fewer years of educational attainment in early adulthood. Findings also raise new questions about the structural processes that cultivate this mismatch and whether or not its effect differs across lines of race and gender. Given the prevalence of aspiration-expectation mismatch among US adolescents and its impact on educational attainment, better understanding

its micro and macro determinants may provide new insights on the persistence of achievement disparities and structural inequality.

Appendix A. Description and Coding Information for Variables Included in Analysis

Variable Descriptions	Question Wording/Coding	
Independent Variable(s)		
Educational Aspirations	On a scale of 1 to 5, where 1 is low and 5 is high, how much do you want to go to college?	
Educational Expectations	On a scale of 1 to 5, where 1 is low and 5 is high, how likely is it that you will to go to college?	
Dependent Variable		
Wave IV Educational Attainment	**What is your highest level of education that you have achieved?**	
	Original Response Wording	**Recoded Response**
	8th Grade or Less	4 Years
	Some High School	10 Years
	High School Graduate	12 Years
	Some Vocational/Technical Training (after High School)	13 Years
	Completed Vocational/Technical Training (after High School)	14 Years
	Some College	14 Years
	Completed College (BA Degree)	16 Years
	Some Graduate School	17 Years
	Completed a Master's Degree	18 Years
	Some Graduate Training Beyond an MA	20 years
	Completed a Doctoral Degree	22 Years
	Some Post Bacc./Professional Education (Law School, Med. School)	20 years
	Completed Post Bacc./Professional Education (Law School, Med. School)	22 Years
Adolescent Characteristics		
Gender	1 = Female, 0=Not Female	
Race	non-Hispanic white non-Hispanic black non-Hispanic Asian non-Hispanic American Indian/other Hispanic	
School Year	7th - 12th Grade	
Family Characteristics		
Parental Education	**Original Response Wording**	**Recoded Response**
	8th Grade or Less	4 Years
	>8th Grade/Vocational School	10 Years
	GED	11 Years
	High School Graduate	12 Years
	Vocational School/Not Completed College	14 Years
	Completed college (BA Degree)	16 years
	Professional Training after College	19 Years

Family Structure	2 biological parents/2 adoptive parents 1 biological parent + 1 other non-biological parent Single parent 2 step parents/other
Perceived Parental Educational Expectations	On a scale of 1 to 5, where 1 is low and 5 is high, how disappointed would (your mom) be if you did not graduate from college? On a scale of 1 to 5, where 1 is low and 5 is high, how disappointed would (your dad) be if you did not graduate from college?
Parental Involvement	**Which of the things listed on this card have you done with your (mother/adoptive mother/stepmother/foster mother/etc.) in the past 4 weeks** talked about yoru school work or grade worked on a project for school talked about other thing you're doing at school
Adolescent Schooling Experiences	
Adolescent GPA	**Average based on self-reports to the following question: At the (most recent grading period/last grading period in the spring), what was your grade in…** English Mathematics Social Studies Science
Repeated a Grade	**Have you ever repeated a grade or been held back a grade?** 1 = Yes 0=No
Received Out of School Suspension	**Have you ever received an out-of-school suspension from school?** 1 = Yes 0=No
Skipped School at least once	**During this school year how many times have you been absent from school for a full day without an excuse?** 1 = At least once 0=Never
Expelled from School	**Have you ever been expelled from school?** 1 = Yes 0=No
General Schooling Attitudes	
School Connectedness	**Standardized Composite Variable: Since School started this year, how often have you had trouble** paying attention in school? getting your homework done?
Student Engagement	**Standardized Composite Variable:** You feel close to people at your school. You feel like you are part of your school. You are happy to be at your school. The teachers at your school treat students fairly. You feel safe in your school.

Source: The National Longitudinal Study of Adolescent Health, 1994-95
Notes: All composite Variables were formed using Cronbach's alpha (Cronbach 1951). Unless indicated, all variables come from Wave I.

REFERENCES

Andrew, Megan, and Robert M. Hauser. 2011. "Adoption? Adaptation? Evaluating the Formation of Educational Expectations." *Social Forces* 90(2):497–520.

Beal, Sarah J., and Lisa J. Crockett. 2010. "Adolescents' Occupational and Educational Aspirations and Expectations: Links to High School Activities and Adult Educational Attainment." *Developmental psychology* 46(1):258.

Bennett, Pamela R., Amy C. Lutz, and Lakshmi Jayaram. 2012. "Beyond the Schoolyard The Role of Parenting Logics, Financial Resources, and Social Institutions in the Social Class Gap in Structured Activity Participation." *Sociology of Education* 85(2):131–57.

Bourdieu, Pierre. 1973. "Cultural Reproduction and Social Reproduction." in *Knowledge, Education and Cultural Change: Papers in the Sociology of Education [contributed to the Annual Conference of the British Sociological Association Held at the University of Durham, 7-10 April 1970]*, vol. 2, edited by Richard K. Brown. New York: Taylor & Francis.

Bowles, Samuel, and Herbert Gintis. 1976. *Schooling in Capitalist America: Educational Reform and the Contradictions of American Life*. New York: Basic Books.

Boxer, Paul, Sara E. Goldstein, Tahlia DeLorenzo, Sarah Savoy, and Ignacio Mercado. 2011. "Educational Aspiration-expectation Discrepancies: Relation to Socioeconomic and Academic Risk-related Factors." *Journal of adolescence* 34(4):609–17.

Chantala, Kim, and Joyce Tabor. 2012. "Strategies to Perform a Design-based Analysis Using the Add Health Data." *Carolina Population Center, University of North Carolina at Chapel Hill, Chapel Hill, NC*.

Collins, Randall. 1971. "Functional and Conflict Theories of Educational Stratification." *American Sociological Review* 1002–19.

Dearden, Lorraine, Javier Ferri, and Costas Meghir. 2002. "The Effect of School Quality on Educational Attainment and Wages." *Review of Economics and Statistics* 84(1):1–20.

Downey, Douglas B., James W. Ainsworth, and Zhenchao Qian. 2009. "Rethinking the Attitude-achievement Paradox Among Blacks." *Sociology of Education* 82(1):1–19.

Duncan, Otis Dudley, David L. Featherman, and Beverly Duncan. 1972. "Socioeconomic Background and Achievement." New York: Seminar Press.

Eccles, Jacquelynne S., and Allan Wigfield. 2000. "Expectancy–value Theory of Achievement Motivation." *Contemporary educational psychology* 25(1):68–81.

Entwisle, Doris R., Karl L. Alexander, and Linda S. Olson. 2007. "Early Schooling: The Handicap of Being Poor and Male." *Sociology of Education* 80(2):114–38.

Fordham, Signithia, and John U. Ogbu. 1986. "Black Students' School Success: Coping with the 'burden of "acting White."'" *The urban review* 18(3):176–206.

Fryer Jr, Roland G., and Paul Torelli. 2010. "An Empirical Analysis of 'acting White'." *Journal of Public Economics* 94(5):380–96.

Fuller, Wayne A. 2009. *Measurement Error Models*. Wiley.com.

Garner, Catherine L., and Stephen W. Raudenbush. 1991. "Neighborhood Effects on Educational Attainment: A Multilevel Analysis." *Sociology of education* 251–62.

Goyette, Kimberly A. 2008. "College for Some to College for All: Social Background, Occupational Expectations, and Educational Expectations over Time." *Social Science Research* 37(2):461–84.

Haller, Archibald O. 1982. "Reflections on the Social Psychology of Status Attainment." *Social structure and behavior: Essays in honor of William Hamilton Sewell* 3–28.

Hanson, Sandra L. 1994. "Lost Talent: Unrealized Educational Aspirations and Expectations Among US Youths." *Sociology of education* 159–83.

Harding, David J. 2010. *Living the Drama: Community, Conflict, and Culture Among Inner-city Boys*. University of Chicago Press.

Harris, Angel L. 2010. "Gender, Perceptions of Opportunity, and Investment in Schooling." *Growing Gaps: Educational Inequality around the World: Educational Inequality around the World* 284.

Harris, Angel L. 2011. *Kids Don't Want to Fail: Oppositional Culture and the Black-White Achievement Gap*. Cambridge, Mass.: Harvard University Press.

Harris, Kathleen Mullan. 2009. "The National Longitudinal Study of Adolescent Health (Add Health), Waves I & II, 1994–1996; Wave III, 2001–2002; Wave IV, 2007–2009 [machine-readable Data File and Documentation]." *Chapel Hill, NC: Carolina Population Center, University of North Carolina at Chapel Hill*.

Harris, Kathleen Mullan, Krista M. Perreira, and Dohoon Lee. 2009. "Obesity in the Transition to Adulthood: Predictions Across Race/ethnicity, Immigrant Generation, and Sex." *Archives of pediatrics & adolescent medicine* 163(11):1022.

Harris, Kathleen Mullan, and Suzanne Ryan. 2004. "Father Involvement and the Diversity of Family Context."

Kao, Grace, and Jennifer Thompson. 2003. "Racial and Ethnic Stratification in Educational Achievement and Attainment." *Annual review of sociology* 29:417–42.

Kao, Grace, and Marta Tienda. 1998. "Educational Aspirations Among Minority Youth." *American Journal of Education* 106:349–84.

Kerckhoff, Alan C. 1976. "The Status Attainment Process: Socialization or Allocation?" *Social Forces* 55(2):368–81.

Lee, Jennifer, and Frank D. Bean. 2004. "America's Changing Color Lines: Immigration, Race/Ethnicity, and Multiracial Identification." *Annual Review of Sociology* 30(1):221–42.

Lopez, Nancy. 2003. *Hopeful Girls, Troubled Boys: Race and Gender Disparity in Urban Education*. Routledge New York.

MacLeod, Jay. 1995. *Ain't No Makin'it: Aspirations and Attainment in a Low-income Neighborhood*. Westview Press Boulder, CO.

Mangino, William. 2012. "Why Do Whites and the Rich Have Less Need for Education?" *American Journal of Economics and Sociology* 71(3):562–602.

Mello, Zena R. 2009. "Racial/ethnic Group and Socioeconomic Status Variation in Educational and Occupational Expectations from Adolescence to Adulthood." *Journal of Applied Developmental Psychology* 30(4):494–504.

Mickelson, Roslyn Arlin. 1990. "The Attitude-achievement Paradox Among Black Adolescents." *Sociology of education* 44–61.

Morgan, Stephen Lawrence. 2005. *On the Edge of Commitment: Educational Attainment and Race in the United States*. Stanford University Press.

Museus, Ph D., Ph D. Harper, and Ph D. Nichols. 2010. "Racial Differences in the Formation of Postsecondary Educational Expectations: A Structural Model." *Teachers College Record* 112(3):811–42.

Oakes, Jeannie. 2005. *Keeping Track: How Schools Structure Inequality*. Yale University Press.

Ozer, Emily J. 2005. "The Impact of Violence on Urban Adolescents Longitudinal Effects of Perceived School Connection and Family Support." *Journal of Adolescent Research* 20(2):167–92.

Pascoe, Cheri J. 2011. *Dude, You're a Fag: Masculinity and Sexuality in High School, With a New Preface*. Univ of California Press.

Perez, Anthony D. 2007. "Who Is HIspanic? Shades of Ethnicity Among Latino/a Youth." *Social Forces* 86(2):561–77.

Perez, Anthony Daniel, and Charles Hirschman. 2009. "The Changing Racial and Ethnic Composition of the US Population: Emerging American Identities." *Population and Development Review* 35(1):1–51.

Reynolds, John R., and Chardie L. Baird. 2010. "Is There a Downside to Shooting for the Stars? Unrealized Educational Expectations and Symptoms of Depression." *American Sociological Review* 75(1):151–72.

Ryan, Camille L., and Julie Siebens. 2012. "Educational Attainment in the United States: 2009." *Current Population Reports: February 2012*.

Sewell, William H., Archibald O. Haller, and George W. Ohlendorf. 1970. "The Educational and Early Occupational Status Attainment Process: Replication and Revision." *American Sociological Review* 1014–27.

Sewell, William H., Archibald O. Haller, and Alejandro Portes. 1969. "The Educational and Early Occupational Attainment Process." *American Sociological Review* 82–92.

Shryock, Henry S., Jacob S. Siegel, and Elizabeth A. Larmon. 1980. *The Methods and Materials of Demography*. Department of Commerce, Bureau of the Census.

Simons-Morton, Bruce G., and Aria Davis Crump. 2003. "Association of Parental Involvement and Social Competence with School Adjustment and Engagement Among Sixth Graders." *Journal of School Health* 73(3):121–26.

Spenner, Kenneth I., and David L. Featherman. 1978. "Achievement Ambitions." *Annual review of sociology* 4:373–420.

Sum, Andrew et al. 2003. *The Growing Gender Gaps in College Enrollment and Degree Attainment in the US and Their Potential Economic and Social Consequences*. Center for Labor Market Studies, Northeastern University Boston, MA.

Trusty, Jerry, and Spencer G. Niles. 2004. "Realized Potential or Lost Talent: High School Variables and Bachelor's Degree Completion." *The Career Development Quarterly* 53(1):2–15.

Tyson, Karolyn. 2011. *Integration Interrupted: Tracking, Black Students, and Acting White after Brown*. Oxford University Press, USA.

Tyson, Karolyn, William Darity, and Domini R. Castellino. 2005. "It's Not 'a Black Thing': Understanding the Burden of Acting White and Other Dilemmas of High Achievement." *American Sociological Review* 70(4):582–605.