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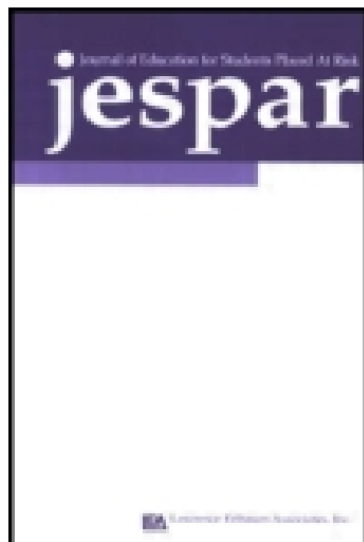
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# A Longitudinal Investigation of African American and Hispanic Adolescents' Educational and Occupational Expectations and Corresponding Attainment in Adulthood

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Adolescents' expectations about school and work may be key antecedents of adult attainment and this relationship may vary by specific racial, ethnic, and gender groups. This article examines how educational and occupational expectations change in adolescence and how expectations predict corresponding attainment in adulthood. Participants included African American and Hispanic females and males. Educational and occupational expectations were reported at ages 14, 16, and 18, and educational and occupational attainment at ages 20 and 26. Results indicated distinct developmental trajectories per racial or ethnic and gender group. Educational expectations were more nuanced for African American and Hispanic females than for their male counterparts; occupational expectations were more varied for Hispanic females than for other groups. Educational expectations positively predicted educational attainment for all participants, whereas occupational attainment was predicted just by educational expectations and for Hispanic females and males only.

Adolescents' future expectations concerning school and work may be important antecedents of adult educational and occupational attainment (Eccles, Wigfield, & Schefe, 1998; Mello, 2009; Schoon, 2001). Studies have shown that educational and occupational expectations positively predict academic attainment in adolescents (e.g., Eccles & Wigfield, 2002), although much less is known about the connection between expectations in adolescence and attainment in adulthood. Schoon and Polek (2011) showed that the occupational expectations of 16-year-old adolescents predicted their educational and occupational attainment at age 33 and 34, and Mello (2008) demonstrated that 14-year-old adolescents' educational and occupational expectations were

positively related to corresponding attainment at age 26. However, research has not yet examined these patterns with regards to racial or ethnic and gender group membership. Scholars have argued that future expectations are a potentially useful factor in fostering academic achievement in racial or ethnic minority youth (Phalet, Andriessen, & Lens, 2004). Investigating the relationship between expectations in adolescence and achievement in adulthood is an especially important topic for educators focused on addressing disparities in achievement.

Demographic statistics across racial or ethnic groups provide a compelling rationale for the investigation of psychological factors that may promote educational attainment. African American and Hispanic groups consistently show disparate educational and occupational outcomes, compared to other racial or ethnic groups. For example, although 20% of European Americans completed college, only 12% of African Americans and 9% of Hispanic groups achieved such schooling (US Census Bureau, 2012). Further disparities emerge by gender when examining income, with African American and Hispanic females earning substantially less than their male counterparts (US Census Bureau, 2009). Adolescents are an increasingly diverse age group, with projections indicating that racial or ethnic minority groups (i.e., non-European Americans) will comprise more than half of the US adolescent population by 2020 (National Adolescent Health Information Center [NAHIC], 2005). Given disparities in attainment and projected population demographics, research on African American and Hispanics is critical.

### ADOLESCENT EXPECTATIONS

Theoretical perspectives have highlighted the role of future-oriented concepts, such as expectations in motivating individuals to attain goals (Eccles & Wigfield, 2002; Phalet et al., 2004; Trusty, 2002). These scholars have defined an expectation as the anticipation of attaining a future goal. Expectations have been examined across domains, such as school and work (Nurmi, 1991), and have been distinguished from aspirations. Boxer, Goldstein, DeLorenzo, Savoy, and Mercado (2011) described expectations as more closely tied to actual future achievement, whereas aspirations indicate future goals that are less likely to occur. Further, adolescence is a salient developmental period in which to examine ideas about the future, given cognitive advances and the identity formation process (Erikson, 1968; Piaget, 1955). These abilities enable adolescents to consider the future and to integrate future ideas into their present self and behavior (Nurmi, 1991; Oyserman, Terry, & Bybee, 2002). Prior research indicates that youth who report positive ideas for the future regarding educational and occupational achievement generally achieve more than their counterparts (Jessor, Turbin, & Costa, 1998; Sirin & Rogers-Sirin, 2005; Worrell & Hale, 2001).

Scholars focusing on racial or ethnic minority groups have argued that individuals who anticipate or experience barriers may lower their expectations for future educational and occupational attainment (Gottfredson, 1981, 1996; Kao, 2000; Mello, 2009). Ogbu (1988) argued that racial or ethnic minority groups such as African Americans and Mexican Americans may anticipate more barriers to future schooling and work, given the way in which many members of these groups entered the United States. When examining racial or ethnic minority groups, scholars have encouraged a focus on factors that promote well-being, rather than an emphasis on shortcomings (Spencer, 1995, 2001; Spencer & Dornbusch, 1990). Further, researchers have argued for the investigation of nuanced patterns within these groups, rather than comparisons between minority

and nonminority groups (Betancourt & Lopez, 1993; McLoyd, 1990). Examining within-group variation improves understanding of racial and ethnic minorities. Consistent with these perspectives, this article examines specific racial, ethnic, and gender group patterns of expectations in adolescence and uses these developmental trajectories to predict educational and occupational attainment in adulthood.

### African American Females and Males

Studies focusing on expectations for overall educational and occupational achievement have shown that African American females report higher expectations than their male counterparts (Chang, Chen, Greenberger, Dooley, & Heckhausen, 2006). Witherspoon and Ennett (2011) examined changes in the value of education among African American and European American students in grades 6–12. Across racial and ethnic groups and grades, males reported that education had less value than did females. Mello and Swanson (2007) found that African American females reported higher educational and occupational expectations than their male counterparts did. Change et al. (2006) asked adolescents to report plans for future schooling in the next 10 years. Results showed that more African American females (84%) reported educational goals than their male counterparts (55%). In a study of eighth-, 10th-, and 12th-grade students, Kao and Tienda (1998) found that females reported higher educational expectations across the grades compared to males. Soloranzo (1992) found that in a study of eighth-grade students, 54% of African American females expected to obtain a professional occupation in adulthood, compared to 39% of the males. Similarly, Walker and Sutherland (1993) reported that among 12th-grade African American students, females held higher educational expectations than males. Finally, Dawkins (1981) examined African American high school seniors and showed that more females than males anticipated finishing graduate or professional school and obtaining a professional occupation.

However, research that has focused on expectations for college completion, rather than overall educational attainment, has shown similarities between African American females and males (Brown, 1997; Qian & Blair, 1999). For example, Brown examined African American students from grades 9 to 12, showing how females and males held similar educational and occupational expectations, with expectations defined as the expectation of attending college and obtaining a career requiring a college degree. Solorzano (1992) found that among eighth-grade students, a similar percentage of African American females (82%) and males (80%) expected to attend college. Similarly, Qian and Blair found that among African American 12th graders, expectations of finishing college did not vary across genders.

### Hispanic Females and Males

Chang et al. (2006) reported that Hispanic (i.e., identified as Mexican or Latino) females had more educational goals for their future than their male counterparts. Hispanic females also reported higher educational expectations in eighth, 10th, and 12th grade than did males (Kao & Tienda, 1998). In contrast, other research has shown that Hispanic females and males report similar future expectations for schooling and work. In a sample of high school seniors, Qian and Blair

(1999) found that Hispanic females and males reported similar educational expectations, and Trusty, Plata, and Salazar (2003) showed no gender differences in educational expectations of Mexican Americans.

## ADOLESCENT EXPECTATIONS AND ADULT ATTAINMENT

Some longitudinal research has focused on the high school period and has illustrated how future expectations predict educational outcomes. For example, Liu, Cheng, Chen, and Wu (2009) found that educational expectations moderately and positively predicted academic achievement among participants in seventh, ninth, and 11th grade. Further, Worrell and Hale (2001) demonstrated that adolescents who had positive future expectations were less likely to drop out of high school than their equally at-risk but less optimistic peers. Additionally, in a 3-year study of diverse high school students, Jessor et al. (1998) reported that low future expectations were inversely associated with school engagement.

Studies have examined expectations of adolescents and their attainment shortly after high school. For example, Beal and Crockett (2010) examined occupational and educational expectations in adolescents aged 15, 16, and 23. Results indicated that educational expectations in adolescence positively predicted actual educational attainment in young adulthood. Similarly, Noeth and Jepson (1981) examined the occupational choice of 11th graders and their occupational attainment 2 years post high school. Thirty-eight percent of the participants reported an occupational expectation that they had actually obtained 2 years after high school.

More recent research has extended the examination of the relationship between expectations and attainment from adolescence to adulthood. For example, Tynkkynen, Tolvanen, and Salmela-Aro (2012) investigated changes in educational expectations among individuals aged 16, 17, 18, 20, and 21. Results indicated five distinct trajectory groups: consistently high, increasing high, decreasing, consistently low, and consistently very low. These trajectory groups were positively associated with educational attainment. Schoon and Polek (2011) examined the occupational expectations of 16-year-old adolescents and their educational and occupational attainment at age 33 and 34. People who reported higher occupational expectations in adolescence had actually achieved more schooling and obtained a more professional occupation in mid-adulthood, even after controlling for cognitive abilities. In another study, Schoon (2001) examined the relation between career expectations of 16-year-old adolescents and their occupational attainment 17 years later. Data indicated that some adolescents' expectations accurately reflected adult occupations, specifically for 51% of health professionals and 20% of engineers, although gender- and racial- or ethnic-specific patterns were not a focus of this study.

A few studies have examined racial, ethnic, or gender groups, although they have not examined the interaction between demographic groups. For example, Wood, Kurtz-Costes, and Copping (2011) examined middle-class African American adolescents in 11th grade and 1 year following high school. Educational expectations positively predicted educational attainment. In another study, Mello (2008) examined individuals' expectations for schooling and work at age 14 and their occupational attainment at age 26. Results showed an interaction by gender: males who reported higher occupational expectations in adolescence had occupations requiring more schooling and affording more prestige than their male counterparts or females in adulthood. Earlier, Cosby, Thomas, and Falk (1976) examined educational and occupational expectations and

attainment in African Americans as high school sophomores and 4 years later. Data indicated that 47% of African American males expected to obtain a professional degree, although none of the participants actually earned the degree.

In summary, the results of research examining African American and Hispanic female and male expectations for educational and occupational attainment in adolescence have been inconsistent. Discrepancies in the literature may be due to measurement issues. Specifically, studies assessing expectations for overall educational attainment have found gender differences in African American adolescents, with females reporting higher expectations than males (Chang et al., 2006; Kao & Tienda, 1998). In contrast, research on the expectation of completing college, rather than the total amount of schooling one expects to obtain, has shown African American females and males report similar expectations (Soloranzo, 1992). Additionally, research with Hispanic female and male adolescents has also showed conflicting findings, with studies that examine general educational goals indicating that Hispanic females report higher expectations than Hispanic males (e.g., Chang et al., 2006) and other research focusing on educational expectations indicating gender similarities among Hispanics (Trusty et al., 2003).

Most important, research that has examined how educational and occupational expectations in adolescence actually predict corresponding attainment in adulthood has not focused on racial, ethnic, and gender group membership. Studies have focused on either racial or ethnic group, namely African Americans (Cosby et al., 1976; Wood et al., 2011), or gender patterns (Mello, 2008). Existing studies have also been limited to high school (e.g., Worrell & Hale, 2001) or to examining one time point in adolescence and one time point in adulthood (e.g., Schoon & Polek, 2011). Thus, research that examines racial, ethnic, and gender group patterns of change in educational and occupational expectations through adolescence and how such change relates to attainment in adulthood is greatly needed.

## THE PRESENT STUDY

Given both the importance of research on factors that predict schooling and work attainment in African American and Hispanic groups and the limited research examining variation within racial or ethnic group, we posed the following three research questions. First, how, from ages 14 to 18, do educational and occupational expectations of African American and Hispanic females and males change? Second, how do educational and occupational expectations reported in adolescence predict attainment at age 20 and 26? Third, how do adolescents' educational expectations predict occupational attainment and how do occupational expectations predict educational attainment?

## METHOD

### Participants

Participants for this study came from the National Education Longitudinal Study ([NELS], NELS:88/2000 Public use data files; National Center for Education Statistics [NCES], 2002a, 2002b). NELS data include nationally representative samples of individuals in eighth, 10th, and



12th grades, and a subsample that were followed longitudinally from eighth grade to 8 years after completion of high school. The initial sample began with 25,000 eighth graders in 1988, 3,250 African Americans and 2,500 Hispanics (NCES, 1990). Our study used the longitudinal subsample, with participants selected with a panel weight flag developed by NCES (i.e., F4PNIFL). This variable *flags* or selects participants who completed surveys in all five ways of data collection that correspond to ages 14, 16, 18, 20, and 26. The final sample included 996 African Americans (60% female) and 1,360 Hispanics (50% female). Hispanic subgroups included Mexican, Mexican American, Chicano, Cuban, and Puerto Rican. The sample for our study represents individuals who were in eighth grade in 1988 and who participated in all five waves of data collection. The sample used for this study reflects only a portion of the original NELS sample (i.e., 30% of African Americans and 54% of Hispanics) and should not be considered nationally representative. However, the data do enable longitudinal analyses of African Americans and Hispanic ranging in age from 14 to 20.

## Measures

**Educational expectations.** Educational expectations were measured by one item at the ages of 14, 16, 18, 20, and 26. At ages 14, 16, and 18, participants were asked to respond to the question, "As things stand now, how far in school do you think you will get?" At ages 20 and 26, the question asked "What is the highest level of education you ever expect to complete?" and "When you are 30, what level of education do you plan to hold?" Response options were recoded for comparability across ages and included the following values: 1 (*less than high school*), 2 (*high school*), 3 (*trade school*), 4 (*some college*), 5 (*college completion*), and 6 (*more than college*). The items used to assess educational expectations were consistent with other research on this topic (e.g., Boxer et al., 2011; Schoon & Polek, 2011).

**Occupational expectations.** Occupational expectations were measured by one item at the ages of 14, 16, 18, 20, and 26. At age 14, the question was "What kind of work do you expect to be doing when you are 30 years old?" At ages 16 and 18, the question was "Which of the categories below comes closest to describing the job or occupation that you expect to have when you are 30 years old?" At age 20, the question was "What job or occupation do you expect or plan to have when you are 30 years old?" Finally, at age 26, the participants were asked to respond to the following question: "What job do you plan to have when you are 30 years old?" Response options ranged from 13 to 19 categories of occupations across waves. To accommodate for variability in response options across waves, and similarly to prior research (Mello, 2009; Schneider, 1994), we coded occupational expectations dichotomously: 0 = *nonprofessional* and 1 = *professional*. Nonprofessional occupations included laborer, unskilled worker, and craftsman, and clerical and professional occupations included managers, administrators, business owners, and professors.

**Educational attainment.** Participants reported their highest level of completed schooling at age 20 and 26. Variables were generated to indicate participants who were currently attending or who had completed a college degree. At age 20, the variable included the following two categories: 0 (*no postsecondary education, currently enrolled in certificate or license*

program, or received certificate or license) and 1 (enrolled in or completed an Associate's degree, Bachelor's degree, or other postsecondary education). At age 26, the variable indicated whether the participant had ever attended a postsecondary educational institution after high school: 0 (did not attend postsecondary education) or 1 (attended postsecondary education).

**Occupational attainment.** Occupational attainment was ascertained from participants at ages 20 and 26. At age 20, participants responded to the question, "Please describe your job or occupation." At age 26, the question was changed to, "What do you do as a job?" Similar to occupational expectations, a dichotomous variable was created to indicate participants who had obtained a position as a *nonprofessional* (0) or *professional* (1). The nonprofessional category included occupations such as craftsmen, farmer, and laborer, whereas the professional category included manager, teacher, and business owner.

**Control variables.** Academic achievement was included as a time-varying control variable. Academic achievement was ascertained at ages 14, 16, and 18, and consisted of a composite variable including standardized reading and mathematics scores.

## RESULTS

### Analytic Strategy

Our analytic strategy sought to (a) identify specific racial, ethnic, and gender group developmental trajectories of educational and occupational expectations in adolescence, and (b) investigate how such developmental trajectories predict educational and occupational attainment in adulthood. To address the first aim, we drew from Nagin's (2003, 2005) longitudinal group-based modeling approach. This strategy is used to identify distinct groups of developmental trajectories and is appropriate to determine if there are specific racial, ethnic, and gender developmental trajectories (i.e., African American females, African American males, Hispanic females, and Hispanic males). Academic achievement was included as a time-varying covariate to examine variation in expectations, independent of how individuals achieve academically.

As suggested by Nagin (2005), we used the Bayesian Information Criterion (BIC) statistic to identify both the number and the shape of distinct group developmental trajectories. A reduction in the BIC value indicates the best fitting model. Once the groups were identified, we examined predicted probabilities for group membership. When determining the shape of the development of expectations, we examined growth terms, beginning with quadratic shapes and systemically reducing the complexity of the shape from quadratic, to linear, and to a flat line, until the BIC statistic indicated the model that best fit the data. After distinct groups of developmental trajectories of educational and occupational expectations were identified, the Chi-square statistic was used to test the relationship between educational and occupational expectations in adolescence and corresponding adult attainment. We used Cohen's  $\omega$  to determine the effect size with the following values corresponding to small, medium, and large effect sizes: 0.10, 0.30, and 0.50, respectively (Cohen, 1992).

## Developmental Trajectories

*Educational expectations.* The upper portion of Table 1 shows how many distinct trajectory groups emerged for educational expectations. African American and Hispanic females had four groups in adolescence, whereas African American and Hispanic males had three groups. Thus, there was more variability in the educational expectations among females than males across racial and ethnic groups. The lower portion of Table 1 shows the shape of the trajectory groups, which indicates how expectations changed over time. African American and Hispanic females had trajectories with linear and quadratic shapes, with an increase in expectations, compared to males, who had primarily flat trajectories or little change in expectations. The upper portion of Figures 1 through 4 illustrate the developmental trajectories of educational expectations per racial and ethnic and gender group across ages 14, 16, and 18, controlling for academic achievement. Table 2 shows characteristics for each group. The most populated groups were those with individuals that expected “some college” in adulthood, with percentages ranging from 52 to 74. Only African American and Hispanic females had a distinct group that expected to attend graduate school. Predicted probabilities indicated an acceptable probability of group membership.

*Occupational expectations.* The upper portion of Table 1 indicates that among Hispanic females, there were three distinct groups of occupational expectation trajectories in adolescence, compared to two distinct groups for Hispanic males and African American females and males. The lower portion of Table 1 shows that, across groups, the trajectory of occupational expectations was mostly linear or flat, as also illustrated in the lower portion of Figures 1 through 4. Table 2 shows that 80% of African American females expected a “professional” occupation in adulthood, followed by 62% of African American males. Among Hispanic males, only 43% expected a “professional” occupation in adulthood. The largest group among Hispanic females comprised individuals who expected an adult occupation between “professional” and “nonprofessional” (i.e., 68%). Predicted probabilities for group membership were acceptable.

## Adolescent Developmental Trajectories and Adult Attainment

*Educational expectations and educational attainment.* Overall, developmental trajectory groups of educational expectations in adolescence positively predicted educational attainment in adulthood. Table 3 shows the percentage for each trajectory group that achieved particular educational levels. Overall, results indicated that for African American females, African American males, Hispanic females, and Hispanic males, trajectory groups predicted the percentage attending college at both ages 20 and 26, with medium to large effect sizes.

*Educational expectations and occupational attainment.* Trajectory groups of educational expectations did not predict occupational attainment in adulthood for African American females and males. However, for Hispanic females and males, trajectory groups predicted occupational attainment for age 26, although the effect size was small. For Hispanic males, trajectory groups predicted occupational attainment at both ages 20 and 26, with effect sizes between small and medium.

TABLE 1  
Determining Developmental Trajectory Groups

Group Number	Educational Expectation						Group Shape	Occupational Expectation					
	African American			Hispanic				African American			Hispanic		
	Females	Males		Females	Males			Females	Males		Females	Males	
4	<b>-2304.72</b>	-1776.17		<b>-3259.98</b>	-2665.94		4	-729.73	-579.66		-948.28	-920.16	
3	-2315.57	<b>-1770.67</b>		-3268.99	<b>-2659.25</b>		3	-717.49	-566.86		<b>-935.46</b>	-907.53	
2	-2334.99	-1783.03		-3306.78	-2687.81		2	<b>-714.83</b>	<b>-559.18</b>		-955.62	<b>-903.80</b>	
Group Shape							Group Shape						
QQQ	—	—		-3259.98	—		QQQ	—	—		-935.43	—	
QQLQ	—	—		-3256.67	—		LQQ	—	—		-932.85	—	
QQLL	—	—		-3255.89	—		LLQ	—	—		-931.41	—	
QQLF	—	—		-3252.23	—		LLL	—	—		-926.50	—	
QQFF	—	—		<b>-3249.26</b>	—		FLL	—	—		-928.74	—	
QLQQ	—	—		-3298.91	—		LFL	—	—		-928.50	—	
LQQQ	-2302.85	—		-3266.60	—		LLF	—	—		<b>-925.60</b>	—	
LLQQ	<b>-2301.03</b>	—		—	—		FFL	—	—		-929.52	—	
LLLQ	-2320.45	—		—	—		FFF	—	—		-933.74	—	
LLQL	-2313.40	—		—	—		QQ	-714.83	-559.18		—	-903.80	
LQFF	—	—		—	—		LQ	-714.55	-559.13		—	-900.88	
QQQ	—	-1770.67		—	-2659.25		L	-712.68	-557.64		—	-897.77	
LQQ	—	-1769.95		—	<b>-2661.42</b>		F	<b>-712.48</b>	<b>-556.07</b>		—	<b>-895.34</b>	
LLQ	—	-1771.99		—	-2672.24		F	-713.40	-563.02		—	-904.76	
LLL	—	-1768.98		—	-2669.04		—	—	—		—	—	
FLL	—	-1767.05		—	—		—	—	—		—	—	
FFL	—	<b>-1764.25</b>		—	—		—	—	—		—	—	
FFF	—	-1765.19		—	—		—	—	—		—	—	

Note. Q = quadratic, L = linear, F = flat trajectory shapes. Bolded values are best-fitting models. Dashes denote models not tested.

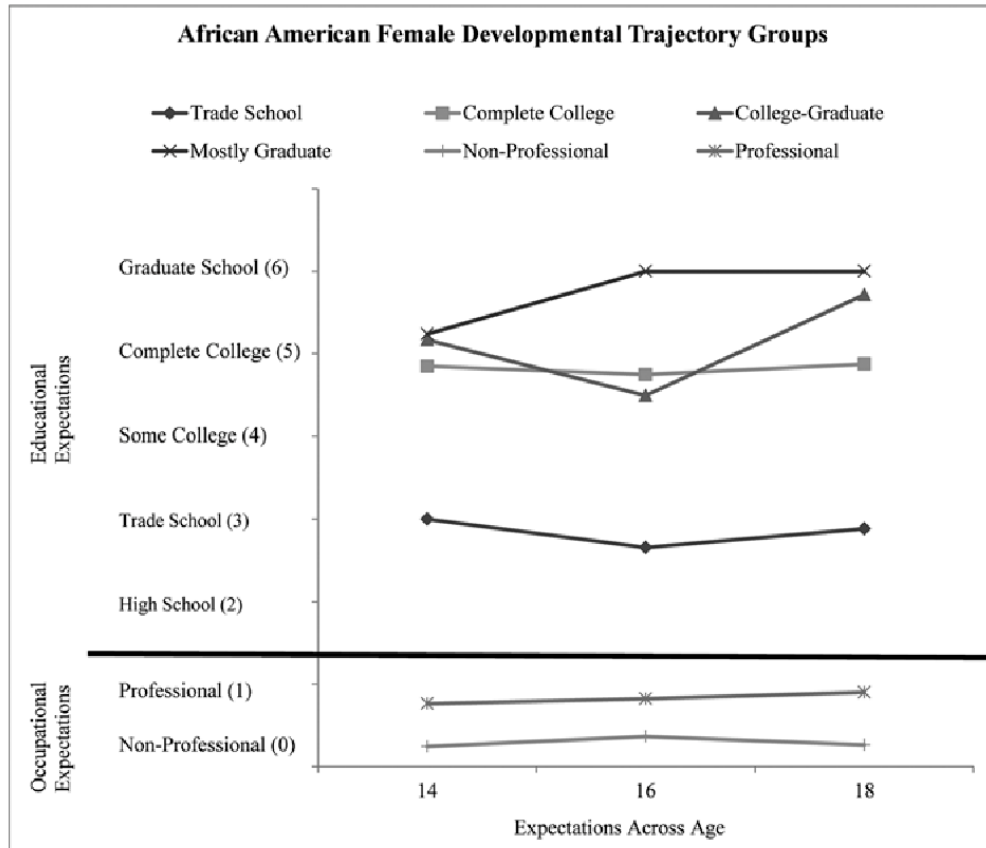


FIGURE 1 African American female adolescents' developmental trajectories of educational and occupational expectations. *Note.* Values in parentheses.

*Occupational expectations and educational and occupational attainment.* In sharp contrast to the pattern of relationships observed between educational expectations and educational attainment, occupational expectations in adolescence did not predict either educational or occupational attainment in adulthood for any racial or ethnic and gender group (values not shown).

Figure 5 shows the relationships among expectations in adolescence and attainment in adulthood. Across racial, ethnic, and gender groups, higher educational expectations positively predicted the percentage who had completed or were attending college. For Hispanics only, educational expectations in adolescence predicted occupational attainment in adulthood. For Hispanic females, reporting higher educational expectations positively predicted employment at age 26. For Hispanic males, educational expectations positively predicted the percentage employed in professional occupations at ages 20 and 26. Those who reported "some college expectations" were more likely to be employed at age 20, whereas those with "graduate school expectations" were more likely to be employed at age 26.

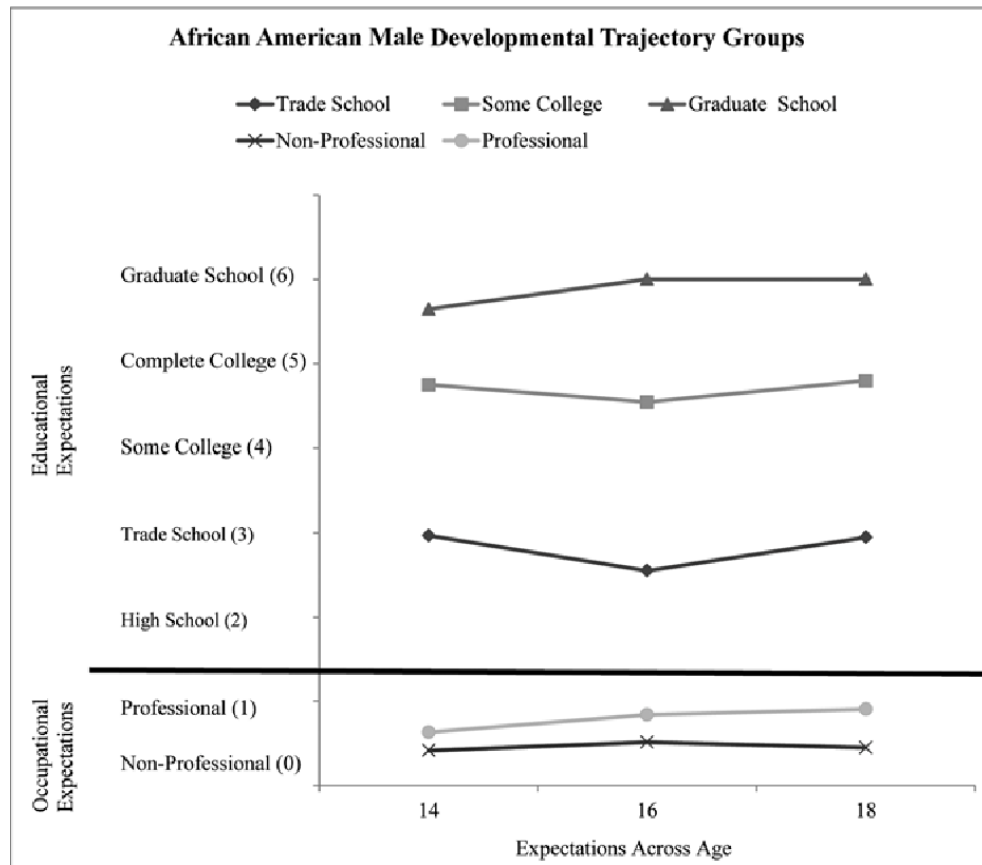


FIGURE 2 African American male adolescents' developmental trajectories of educational and occupational expectations. *Note.* Values in parentheses.

## DISCUSSION

In this study, we used developmental trajectory analysis to show how educational and occupational expectations change in adolescence among African American and Hispanic females and males. Findings indicated that developmental patterns of expectations varied per racial, ethnic, and gender group in adolescence. We further examined how developmental trajectories of educational and occupational expectations in adolescence predicted actual educational and occupational attainment in adulthood. Adolescents' educational expectations positively predicted educational attainment in adulthood for all racial, ethnic, and gender groups. However, educational expectations in adolescence predicted occupational attainment in adulthood for Hispanic females and males only. In contrast to educational expectations, occupational expectations did not predict occupational attainment for any group.

This study extends prior research on variation in expectations between racial, ethnic, and gender groups (Kao & Tienda, 1998; Mello, 2009) to show how expectations vary within racial and ethnic groups by gender. African American and Hispanic females reported more variation in expectations for future schooling than did their male counterparts. Specifically, among only

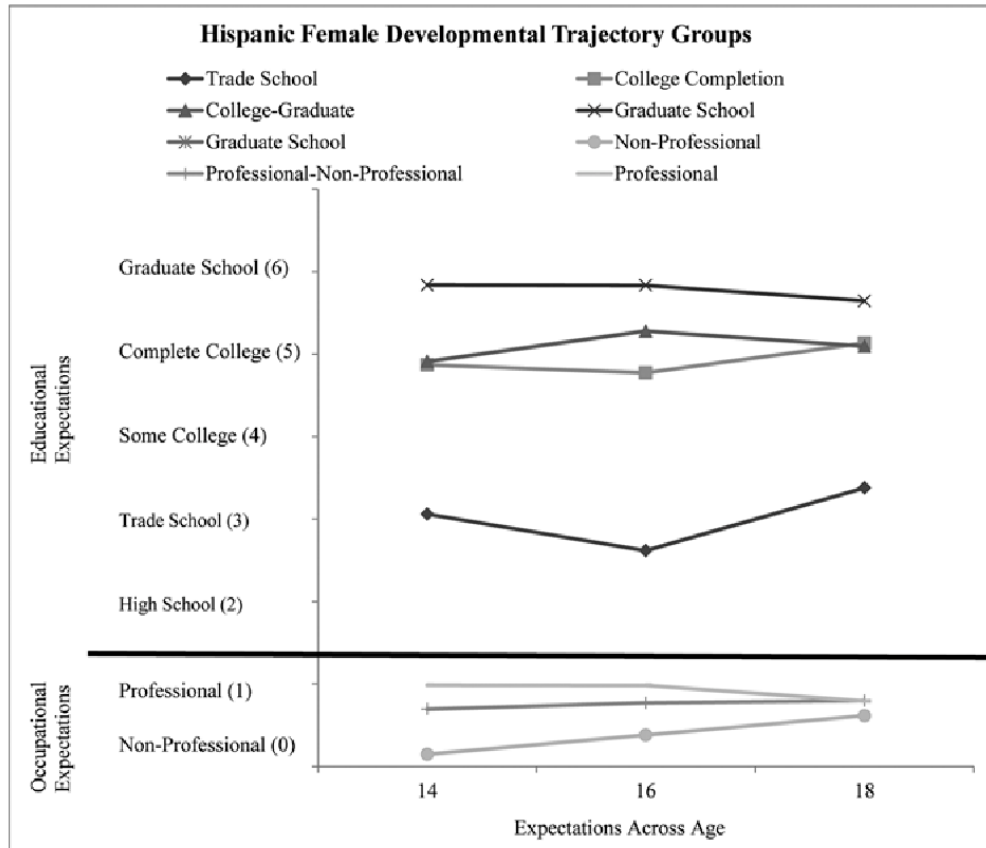


FIGURE 3 Hispanic female adolescents' developmental trajectories of educational and occupational expectations. *Note.* Values in parentheses.

females, a distinct trajectory group was observed that included individuals who expected to attend graduate school. This finding is consistent with a study by Mello (2008) that showed that females reported higher educational expectations than males in adolescence and into adulthood, and with prior research examining African American and Hispanic adolescents (Chang et al., 2006; Kao & Tienda, 1998; Mello & Swanson, 2007). One way to interpret these findings is to consider how males within marginalized racial and ethnic minority groups may perceive fewer educational opportunities, which may, in turn, result in fewer expectations about the future compared to their female counterparts. Our results illuminate that African American and Hispanic males expect less schooling than their female counterparts.

Developmental trajectory groups indicated moderate age-related change in expectations for future schooling and work. Most developmental trajectories were relatively linear, indicating that adolescents' ideas for the future remain mostly constant in this developmental period. This finding is similar to prior research showing that adolescents' expectations remain mostly stable in this developmental period (Tynkkynen et al., 2012). However, each racial, ethnic, and gender group did comprise at least one developmental trajectory that included an increase in expectations, suggesting that some individuals do vary in expectations for future schooling and work.

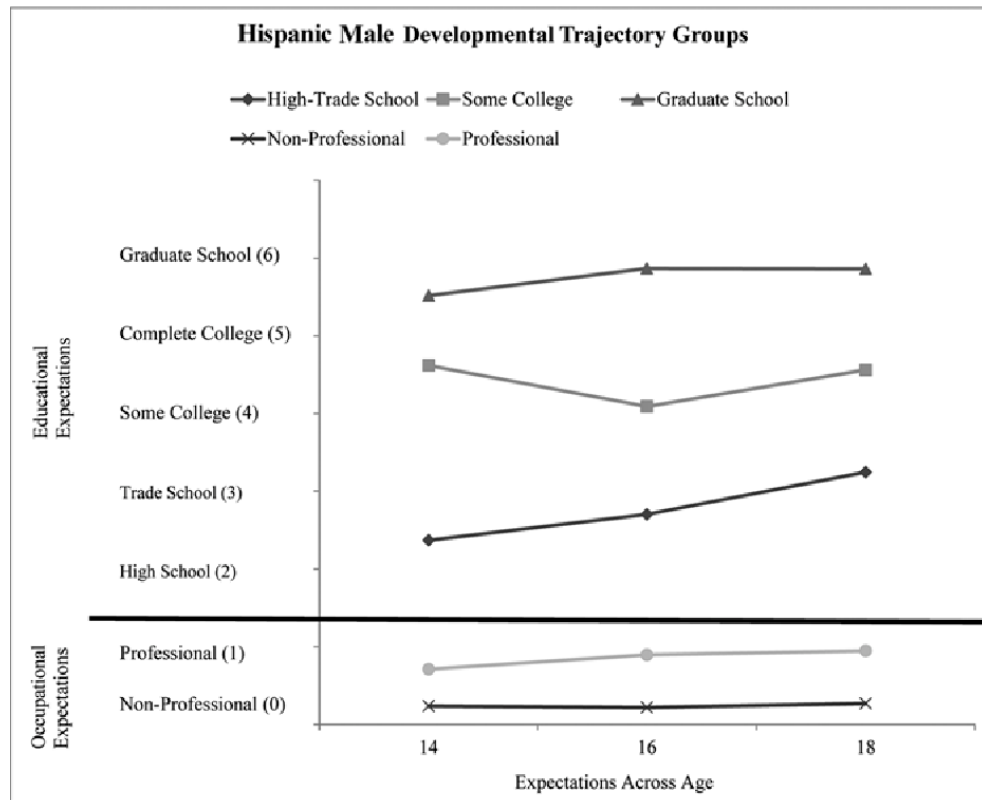


FIGURE 4 Hispanic male adolescents' developmental trajectories of educational and occupational expectations. *Note.* Values in parentheses.

The majority of participants did not exhibit the declining trajectories posited by Gottfredson (1981, 1996) and Ogbu (1988), but, rather, multiple types of trajectories were observed. One possible explanation of this apparent inconsistency is the age range under investigation. Possibly, the phenomenon conceptualized by Gottfredson and Ogbu occurs in childhood, rather than adolescence.

Across race, ethnicity, and gender, adolescents reported more variation in their thoughts about future schooling than work. Developmental trajectories for educational expectations included between three and four groups, compared to just two developmental trajectory groups for occupational expectations. This finding may be interpreted in at least two ways. First, adolescents may have more information about future schooling than about work. Scholars of career development have described how students' career goals are related to their exposure to information about occupations (Super, 1990). Indeed, a prior study demonstrated that the occupational expectations of African American young adults were related to the occupations held by their reported favorite television characters (Hoffner et al., 2007). Second, measurement issues must be considered because occupational expectations were restricted to professional versus nonprofessional occupational categories. Possibly, an alternate assessment of occupational expectations, such as a measure of prestige, may reveal a more nuanced pattern than that observed in the present study.



TABLE 2  
Developmental Trajectory Groups of Educational and Occupational Expectations

	<i>Educational Expectations</i>				<i>Occupational Expectations</i>		
	<i>Trade School</i>	<i>Some College</i>	<i>Complete College</i>	<i>Graduate School</i>	<i>Prof.</i>	<i>Prof.-Non-prof.</i>	<i>Non-prof.</i>
<b>African American females</b>							
Group probabilities	0.84	0.85	0.67	0.74	0.82	n.s.	0.80
Group N	62.00	288.00	122.00	81.00	445.00	n.s.	108.00
Group %	11.00	52.00	22.00	15.00	80.00	n.s.	20.00
<b>African American males</b>							
Group probabilities	0.84	0.90	0.79	ns	0.86	n.s.	0.66
Group N	62.00	306.00	45.00	ns	257.00	n.s.	156.00
Group %	15.00	74.00	11.00	ns	62.00	n.s.	38.00
<b>Hispanic females</b>							
Group probabilities	0.78	0.83	0.70	0.77	0.74	0.65	0.56
Group N	220.00	387.00	90.00	49.00	162.00	506.00	78.00
Group %	29.00	52.00	12.00	7.00	22.00	68.00	11.00
<b>Hispanic males</b>							
Group probabilities	0.81	0.86	0.89	ns	0.78	n.s.	0.77
Group N	114.00	368.00	132.00	ns	267.00	n.s.	347.00
Group %	19.00	60.00	22.00	ns	43.00	n.s.	57.00

Note. Prof. = Professional. ns = not statistically significant.

Importantly, we showed longitudinal relationships among adolescents' educational expectations and corresponding attainment in adulthood, demonstrating that patterns of expectations in adolescence predict actual educational attainment in young adulthood. Prior research has been limited to studies focusing within the period of adolescence (Jessor et al., 1998; Sirin & Rogers-Sirin, 2005). Although theory has suggested a positive relationship between what a person expects to achieve and what he or she actually attains with regards to schooling and work (Gottfredson, 1981; Nurmi, 1991), relatively few scholars have examined associations between occupational expectations in adolescence and adult occupational attainment (Beal & Crockett, 2010; Schoon & Polek, 2011). Further, we were unable to identify a previous study that has examined such patterns with regards to racial and ethnic groups. In this study, we showed that educational expectations in adolescence positively predicted college attendance at both ages 20 and 26 for all racial, ethnic, and gender groups. Furthermore, adolescent educational expectations also predicted adult occupational attainment for Hispanic females and males. Thus, Hispanic adolescents perceived a pathway from schooling to work, whereas African American adolescents did not. This finding is similar to the racial or ethnic group variation in academic achievement proposed by Ogbu (1988), where it was argued that because of differences in US entry experiences, individuals will also vary in response to educational institutions.

Occupational expectations in adolescence did not predict educational or occupational attainment. This finding indicates that adolescents' ideas about their future jobs are not related to how much schooling or what kind of job they attain in adulthood or at ages 20 and 26. This result is similar to Beal and Crockett's (2010) study, which showed that occupational expectations in adolescence did not predict educational attainment in young adulthood. Consistent with these findings, Gottfredson (1981) has argued that an image of one's occupational future may not

TABLE 3  
Adolescent Developmental Trajectory Groups of Educational and Occupational Expectations and Adult Attainment

Developmental Trajectory	Educational Attainment						Occupational Attainment					
	African American Females		African American males		Hispanic Females		Hispanic males		Hispanic Females		Hispanic males	
	Age 20	Age 26	Age 20	Age 26	Age 20	Age 26	Age 20	Age 26	Age 20	Age 26	Age 20	Age 26
Trade school	16%	44%	10%	31%	19%	51%	18%	43%	37%	18%	22%	
Some college	62%	85%	55%	78%	62%	85%	55%	81%	49%	64%	31%	
Complete college	65%	82%	73%	96%	67%	93%	80%	97%	46%	19%	47%	
Graduate school	73%	89%	—	—	82%	96%	—	—	60%	—	—	
$\chi^2$	62.09	56.43	53.29	70.96	136.04	100.65	95.07	107.71	12.71	10.23	17.37	
p	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.01	0.01	0.001	
$\omega$	0.34	0.32	0.36	0.41	0.43	0.37	0.39	0.42	0.13	0.18	0.17	

Note. Educational attainment is the percentage attending or completing college. Occupational attainment values are the percentages that have attained a professional occupational level. Dashes denote “not applicable” categories.

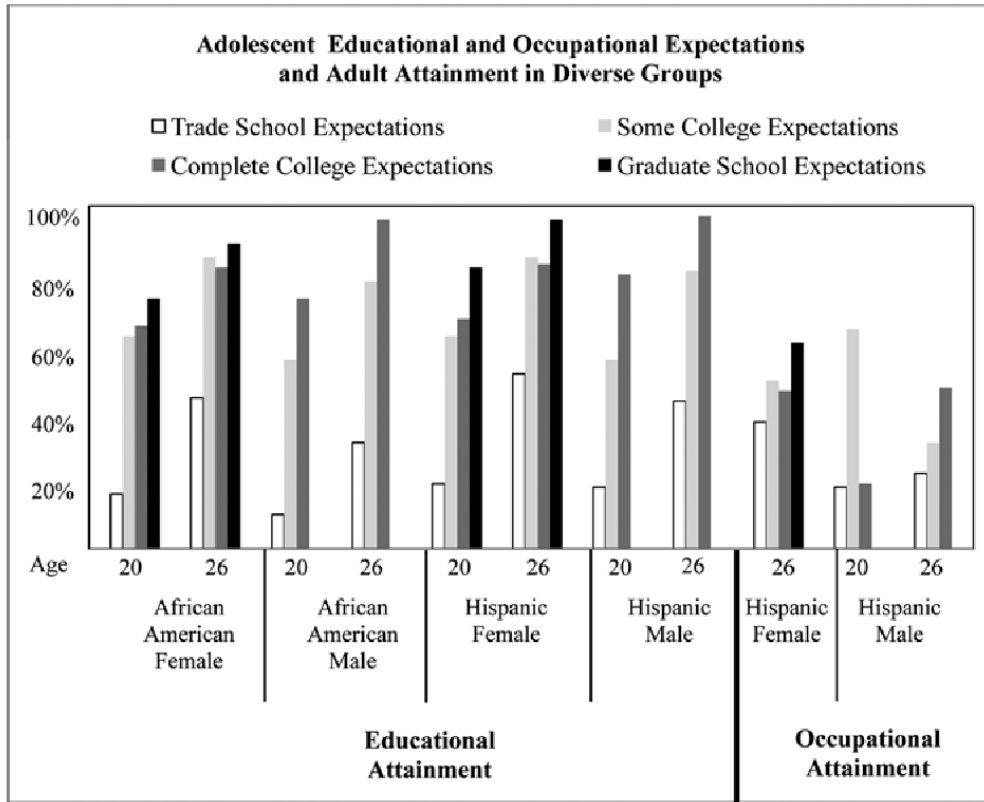


FIGURE 5 Adolescents' developmental trajectories of educational and occupational expectations and adult attainment in diverse groups. *Note.* Educational attainment is the percentage attending or completing college. Occupational attainment is the percentage attaining a professional occupation.

reflect the requirements for such a position. Indeed, Goyette (2008) showed that educational expectations have become less related to occupational plans over time. Thus, the data from this study and the other scholars cited suggest a disconnect between adolescents' current occupational expectations and future schooling and work.

Adolescents' educational and occupational expectations remain an important predictor for educational attainment. Although the participants in this study graduated from high school in 1992, the patterns observed may be similar to today's adolescents. Support for this notion comes from a study by Domina, Conley, and Farkas (2011), who examined how educational expectations were related to academic achievement among 10th graders in 1980, 1990, and 2002. Their results indicated that educational expectations continued to be positively associated with academic achievement across time. Future studies could extend this research to examine the relationship between expectations and attainment for adolescents who are graduating from high school today.

Overall, examining within-group variation may reveal meaningful patterns not otherwise observed when conducting between-group analyses (Betancourt & Lopez, 1993; McLoyd, 1990). For example, Kao (2000) showed how perceived racial and ethnic stereotypes contributed to

expectations and reported patterns specific to racial and ethnic groups. Specifically, Hispanic participants focused on not wanting to fall into a negatively stereotyped occupation, whereas African Americans wanted to avoid poor academic achievement. Combined, the results of this study and prior research indicate that the expectations expressed by minority youth may be embedded in both their ideas for the future and a response to perceived societal values about achievement.

### Implications

The results of this study have several implications for school counselors and advisors. First, this study shows that supporting youth who express high educational expectations and increasing the educational expectations of those who report low expectations may actually lead to differences in educational attainment as adults. Indeed, some researchers have reported on programs that increase future expectations. An example comes from Oyserman et al. (2002), in a study of an after-school program with African American middle school students. Participants were prompted to think about their futures as adults, to consider the relationship between the present and the future, and to connect their behavior in the present with attainment in the future. Findings generally supported the intervention and showed that participants had more school engagement and better school attendance than the control group.

Second, educational expectations predicted educational attainment for both African American and Hispanic genders. However, educational expectations predicted occupational attainment for Hispanic females and males only. Thus, it might be useful for school counselors to emphasize the relationship between schooling and work while considering the adolescent's specific racial or ethnic and gender group. Further, occupational expectations in adolescence did not predict either educational or occupational attainment in adulthood. This result suggests that programs are needed to expose youth to different types of careers.

Last, these results provide evidence for the consideration of racial, ethnic, and gender group membership when providing adolescents information about future schooling and work. Our findings show a nuanced pattern of educational and occupational expectations and corresponding attainment across racial, ethnic, and gender groups. As Gottfredson (1981) has described, the process of considering future opportunities involves the consideration of both societal opportunities and challenges, which have demographic group patterns. It would be important for professionals to talk with adolescents about expectations, with the knowledge that unique patterns may exist in certain racial, ethnic, and gender groups. Conversations that include topics such as cultural beliefs about schooling and work and the anticipation of barriers to educational and occupational attainment may be particularly useful for African American and Hispanic students.

### Limitations and Future Directions

Limitations of this study center on analytic and measurement issues. First, the analytic strategy we employed did not adjust for nested data. We were unable to correct for possible inflated standard errors associated with multilevel data. However, researchers have reported a relatively small

amount of variance explained by contexts, such as schools and neighborhoods, in academic outcomes (e.g., Cook, Herman, Phillips, & Settersten, 2002). Thus, future research could confirm the results reported here after controlling for multiple contexts or levels of data.

Data included one item per educational and occupational expectation at each wave. A more detailed measure of thoughts and attitudes toward future educational and occupational attainment might yield different results than those reported here. Future research could include conducting interview or focus group studies to generate a more nuanced understanding of these topics. An interview study would be particularly useful for eliciting adolescents' perspectives on membership in racial or ethnic minority and gender groups, in relationship to their ideas for future schooling and work. Focus groups might be valuable for discerning patterns per racial, ethnic, and gender groups. It would be fruitful for scholars to conduct focus groups that organize participants into specific racial, ethnic, and gender groups and to facilitate conversations about schooling and work expectations. A related concern focuses on the changes in wording for the questionnaire items that assessed educational and occupational expectations; although subtle, these changes could have contributed to the age-related patterns observed in this study.

Last, the data used for this study were collected from 1988 to 2000. Studies indicate that adolescents' educational and occupational expectations have increased over time (Schneider, 1994). Goyette (2008) examined national data from 1980, 1990, and 2002, and reported an overall increase in the proportion of individuals expecting to attain a college degree in adulthood across the periods of examination. It is important for additional research to replicate these findings with individuals in more recent cohorts, especially given the economic downturn and its potential influence on how adolescents see their future in schooling and work.

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