

## **When Can We Expect the Unexpected? Predicting Educational Attainment When it Differs from Previous Expectations**

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*Individuals' expectations are strong predictors of their behaviors; educational expectations predict enrollment in postsecondary education. Yet in many cases, a youth's previous educational expectations are not met or are exceeded. This study examines correlates of educational expectations and unexpected educational attainment using longitudinal data from Monitoring the Future, a U.S. national study. Demographic characteristics, educational experiences in high school, and other risk and protective factors were related to expectations for educational attainment during high school. Logistic regressions indicated that high school curriculum, average grades, educational aspirations, and parents' educational level were particularly strong indicators of youth not meeting their expectation to graduate from a 4-year college, or graduating from college despite expecting not to graduate by age 25/26. We discuss the implications of unexpected pathways in terms of discontinuity during transitions and consider the implications for improved educational and career counseling during high school.*

Every year, hundreds of thousands of young adults who are enrolled in college drop out before receiving a degree. Among students who entered public, 4-year

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colleges during the 1995–1996 academic year, almost a quarter did not receive a degree and were no longer enrolled after 5 years (Peter & Horn, 2005). Adults who have only a few years of college education receive, on average, lower salaries than their peers with bachelor's degrees (U.S. Department of Education, 2002). Furthermore, these individuals may forego invaluable learning experiences.

While some students are dropping out of college, other young adults enroll in college for the first time several years after high school completion. There are many reasons adults may return to the educational system after a delay, including job skills improvement and personal satisfaction (Horn, Cataldi, & Sikora, 2005; Kokko, Pulkkinen, Mesiäinen, & Lyyra 2008). Although colleges and universities often have programs in place to assist nontraditional students, older students often have additional obstacles or barriers to receiving an education (Baker & Velez, 1996); little is known about their institutional persistence.

Most young adults follow a continuous pathway by staying on track with their educational expectations, either completing the level of postsecondary education they had expected during high school or, as expected, not attending postsecondary education. Discontinuities in the educational progress of young adults who appear to desire a college degree but do not receive one, as well as those who (early on) do not desire a degree but then do receive one, imply that some youth follow “unexpected pathways.” Young adults in an unexpected educational pathway appear to be at or working toward a certain level of educational attainment, such as concluding their formal education with high school or being on their way to a college degree. However, they then switch attainment pathways by returning to an educational track or leaving college before the completion of their pursued degree. This article investigates differences among those individuals who continue to follow their own expected (as of senior year of high school) educational pathway and those who do not.

To define late adolescents' educational pathways, we differentiate high school seniors by their expectations to graduate from a 4-year college. Expectations, including assessments of task difficulty, self-perceptions, and expectations of success, are often implicated in volitional behaviors, including educational behaviors such as choosing courses (Eccles et al., 1983). Students can compare their expectations across various tasks to select goals and engage in behaviors that they evaluate as most likely to result in success. In addition to serving as benchmarks with which students can plan their activities, expectations can also be indicators of plans that are already in action (Bachman et al., 2008). For instance, a graduating high school senior who expects to attend college is likely to have already applied to and received an acceptance from a college, whereas a senior who does not expect to attend college has probably not completed these steps. The expectations that are examined in this study are likely a combination of plans and expectations of success; overall, they represent young adults' vision of their future educational pathways.

*Potential Correlates of Unexpected Pathways*

Structural or demographic characteristics are commonly associated with educational attainment and expectations, as well as with changed expectations. According to Hanson (1994), during the transition to adulthood, men are more likely than women to reduce or not meet their educational expectations. Hanson also found that European Americans are more likely than minorities to reduce their educational expectations. However, there is evidence that highly disadvantaged students (e.g., African American inner-city boys living in poverty) reduce their educational expectations much earlier than the transition to adulthood due to perceived barriers (Cook et al., 1996). Similarly, expectations are reduced more during late adolescence among students of lower socioeconomic status (SES) than among students from families of higher SES (Trusty, 2000). Structural disadvantage can also work against students through other mechanisms, such as ability tracking and school quality (Solorzano & Ornelas, 2004).

Because previous educational experiences prepare students for their future educational pursuits, academic achievement, school engagement, and educational aspirations are likely related to the chances of entering an unexpected pathway. For instance, in a study of lowered educational expectations, Trusty (2000) found that high academic achievement predicted stable rather than lowered educational expectations over time. Of course, even in the seemingly homogenous group of students who aspire to graduate from college, there is variation in academic success; some students may drop out of college after poor achievement in college (Baker & Velez, 1996).

Problems in school often co-occur with other problem behaviors such as alcohol, cigarette, and illicit drug use (Donovan, Jessor, & Costa, 1988). Cigarette use and educational difficulties, in particular, are linked during adolescence and beyond (Bryant, Schulenberg, O'Malley, Bachman, & Johnston, 2003). There is also evidence that problem-prone youth are less conventional than their peers, as evidenced by less frequent attendance at religious services and fewer positive relationships with adults (Jessor, Turbin, & Costa, 1998). The tendency to engage in problem behaviors fluctuates during the transition to adulthood (Schulenberg & Zarrett, 2006). Therefore, youth who engage in these behaviors during high school may choose to not attend or drop out of college, only to realize later that they do value education for one reason or another and return to the educational track. Thus, problem behaviors in high school may help predict unexpected pathways during the transition to adulthood.

This study was undertaken to consider continuity and discontinuity in educational pathways between late adolescence and early adulthood. Because educational expectations are highly stable and predictive (Trusty, 2000), most young adults meet their previous expectations for educational attainment (Morgan, 2004; Rosenbaum, 1998). However, because there are important discontinuities during

the transition to adulthood, we expected to be able to identify some young adults who do not meet their previous expectations for educational attainment. Identifying indicators of future pathways will enable youth, and those concerned with youths' interests, to address obstacles or use assets at developmentally appropriate times.

Based on prior research findings regarding differences in expectations and educational attainment, we expected that demographic characteristics, high school experiences, and risk and protective factors would all be related to different routes of entering an unexpected educational pathway. Given that members of socially disenfranchised groups often experience barriers in their educational progress, we expected that females, minorities, and lower SES students would be less likely to graduate from college (i.e., more likely to drop out if they expected to graduate, and less likely to attend college if they did not expect to do so). We focused on minority groups who have historically had more disadvantage in schooling (i.e., African Americans, Latinos, and Native Americans), because Asian Americans' academic achievement and educational attainment is closer to that of European American than of other minorities. We also included a measure of family configuration because living in a single-parent home is associated with additional risks for low achievement and attainment (Pagani et al., 2008).

Our sample for this study includes several consecutive cohorts of high school seniors (from 1976 to 1994). During the time when data were collected, the composition of college students changed. Men were more likely than women to attend college in the 1970s, but by the mid 1990s, women outnumbered men on college campuses (Peter & Horn, 2005). Given the design of the project from which we draw our data, as well as gender differences in academic engagement and problem behaviors, we chose to conduct several of our analyses separately by gender. We expected that if women were at greater risk of not graduating from college, men would be in a better position to rely on their expectations alone to fulfill their educational pathways, whereas additional protective factors would be more beneficial for women's odds of college graduation. In addition, we examined cohort differences, expecting that we might find gender by cohort interactions, but without other *a priori* hypotheses regarding cohort.

Finally, we expected that variables typically related to high educational attainment (i.e., religiosity, high academic achievement and college preparatory coursework, and high educational aspirations) would have a protective effect for high school seniors who expected to graduate from college and, also, that these factors would encourage college graduation, even among high school seniors who did not expect to graduate. On the other hand, we expected that problem behaviors (i.e., skipping school, substance use, and to a lesser extent, employment during the school year) would be risk factors for not graduating, regardless of young adults' previous educational expectations. We expected each indicator to be related to educational attainment in similar ways despite prior educational expectations, but

we also anticipated that the relative importance of indicators might be different for young adults who expected to graduate from college and those who did not.

## Method

### *Participants*

This study uses panel data from the Monitoring the Future (MTF) project, an ongoing study of adolescents and young adults. Every year since 1975, the project has surveyed nationally representative samples of approximately 16,000 high school seniors and has conducted biennial follow-up surveys on random samples of about 2,400 respondents from each high school cohort. The follow-up surveys are administered 1 year after high school for one half of each cohort and 2 years after high school for the other half; the two halves were combined for these analyses. Detailed description of the study and data collection procedures can be found in Bachman et al. (2002) and on the project Web site (<http://www.monitoringthefuture.org/>).

The panel sample used here consists of high school seniors from 1976 until 1994 who participated in follow-up surveys (weighted  $N^1 = 36,674$ ). Of these participants, 52% were female, 1% identified themselves as Native American Indian, 2% were Asian American, 6% were Latino, 12% were Black or African American, 76% were European American, and 2% self-identified as "other." At base year, the modal age of participants was 18 years. For our longitudinal analyses, we used data from the fourth follow-up waves, when the modal ages of participants were 25 or 26. Our retention rate at age 25/26 was 64%, resulting in a total of 23,576 cases available for analysis. For subgroup definition purposes, this sample size was reduced further for certain analyses, as described below. Similar to previous attrition analyses conducted with other samples from MTF (e.g., Schulenberg, Wadsworth, O'Malley, Bachman, & Johnston, 1996), those who remained in the study were more likely to be female and European American, have two parents, have highly educated parents, live in a rural area, and attend religious services. On average, they also had higher grades, higher educational expectations, and higher educational aspirations. They were less likely to use cigarettes, alcohol, and marijuana; to cut school; and to work during the school year.

### *Measures*

All of the predictor variables were measured during participants' senior year of high school. Demographic and background characteristics included gender,

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<sup>1</sup> Because respondents with more frequent senior year illicit drug use were oversampled (by a factor of 3) for follow-up, corrective weighting (0.333 for those individuals) was required.

ethnicity (historically disadvantaged minority vs. Asian or European American), average parental education level (grade school or less to graduate school), number of parents in the household, and attendance at religious services (never to once a week or more). Population density (large metropolitan area to nonmetropolitan rural area) was also included as a demographic characteristic because adolescents who live in urban areas have higher average educational attainment than those who live in rural areas (Bachman et al., 2008). School-related predictors included high school curriculum (general, vocational, technical, commercial, or other vs. academic or college preparatory), average high school grades (D to A), and hours worked per week during the school year (none to 30 hours or more). Aspirations to attend a 2-year college (no or yes) and aspirations to attend professional or graduate school (no or yes) were also included as school-related indicators. The aspirations were not mutually exclusive; participants could indicate an aspiration to attend both a 2-year college and graduate school. Aspirations to attend a 4-year college were not included in the analyses because they are highly correlated with expectations to attend a 4-year college. Measures of problem behaviors were days of school missed due to skipping (none to 4 days or more), cigarette use in the past 30 days (none to two packs or more per day), occasions of alcohol use in the past 12 months (none to 40 times or more), and use of marijuana during the past 30 days (none vs. once or more).

High school students' expectations to graduate from a 4-year college were measured with one of the following four responses: definitely won't, probably won't, probably will, definitely will. Educational attainment was measured as completing a bachelor's degree (no or yes) by age 25/26.

### *Plan of Analysis*

*Phase 1.* Our first purpose was to examine the predictors of educational expectations in the total sample (regardless of educational pathway) at senior year of high school using regressions. These findings serve as a basis for understanding the predictors of unexpected pathways.

*Phase 2.* Our second purpose was to examine predictors of unexpected pathways. In these analyses, we split the sample into two groups: seniors in high school who indicated that they "definitely will" graduate from a 4-year college and those who reported that they "definitely won't." We did not retain the more uncertain high school seniors (those who indicated that they "probably will" or "probably won't" graduate) because expected and unexpected pathways are less clear for participants who express some doubt regarding their educational futures. Therefore, the results in Phase 2 are limited in the degree to which they can be generalized. Eliminating these respondents decreased our potential samples to 8,666

respondents who expected to graduate from college, and 3,400 respondents who did not.

We conducted a logistic regression on each of these subsamples to predict actual college graduation by age 25/26. Results are interpreted such that the odds ratio (OR) is the difference in the likelihood of being in one group versus the comparison group of the dependent variable. If the OR is less than one, then the variable predicts a greater likelihood of not graduating from college. Similarly, if the OR is greater than one, then the predictor is associated with an increased likelihood of graduating from college by age 25/26. These analyses allowed us to compare youth who remained on the educational path they were on in high school with youth who were on the same educational path in high school but then diverged from their peers. We examine these results to determine whether a person-centered approach adds to our understanding of educational attainment.

Consistent with our goals in this study, we performed additional logistic regressions to examine gender and cohort differences. For the “definitely will” subsample, we performed five follow-up analyses: males only, females only, high school seniors during the earliest years of the study (1976–1981), high school seniors during the middle years (1982–1988), and high school seniors during the most recent years (1989–1994). Given the low proportion of participants each year who graduate from college after not expecting to do so, we only performed two follow-up analyses (males only and females only) for the “definitely won’t” subsample.

## Results

### *Phase 1. Predicting Educational Expectations in the Total Sample*

We first examined the correlates of educational expectations during students’ senior year of high school. Table 1 displays means and standard deviations of each predictor variable for the whole sample as well as for the two subsamples of participants who had definite educational expectations, which we examine in depth in Phase 2. Table 2 shows regression coefficients predicting educational expectations at age 18 while controlling for variance shared with the other “predictor” variables.<sup>2</sup> Consistent with previous literature, high school students’ demographic characteristics, academic achievement and curriculum, educational aspirations, substance use, and other activities were correlated with their expectations to graduate from college. Most of these relations held for both females and males.

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<sup>2</sup> We use the word *predictors* here only to be consistent with common terminology used in regression analyses. Of course, because all of these measures were obtained at the same time, we are not examining causality, and the direction or nature of the relation between the predictors and the dependent variable cannot be established.

**Table 1.** Descriptive Statistics of Predictive Variables and Expectations for College Graduation

	Entire sample <sup>1</sup>		Definitely will <sup>2</sup>		Definitely won't <sup>3</sup>		Range	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	Min	Max
Educational expectations	2.91	1.15					1	4
Background characteristics								
Parental educational level	6.25	2.37	7.12	2.34	4.98	1.97	1	11
No. of parents in the home	1.72	.55	1.77	.48	1.66	.62	0	2
Population density	2.05	.74	1.95	.72	2.22	.74	1	3
Female	.53	.50	.55	.50	.55	.50	0	1
European/Asian American	.82	.39	.83	.37	.82	.38	0	1
Religiosity	2.78	1.06	2.90	1.05	2.61	1.07	1	4
School- or work-related								
Curriculum	.53	.50	.79	.41	.14	.35	0	1
Average grade	5.90	1.92	6.64	1.73	4.96	1.90	1	9
2-year college aspiration	.25	.43	.11	.31	.30	.46	0	1
Graduate school aspiration	.47	.50	.70	.46	.13	.34	0	1
Hrs/week employed	4.08	2.33	3.73	2.20	4.48	2.49	1	8
Problem behaviors								
Days of school skipped	1.61	1.12	1.48	1.00	1.78	1.28	1	5
Cigarette use	1.69	1.26	1.54	.99	2.14	1.60	1	7
Alcohol use	2.47	1.53	2.30	1.43	2.75	1.69	1	7
Marijuana use	.23	.42	.18	.38	.30	.46	0	1

<sup>1</sup>*N* = 28,780; <sup>2</sup>*n* = 12,465; <sup>3</sup>*n* = 5,298.

Because use of cigarettes, alcohol, and marijuana are correlated, we checked for problems related to multicollinearity by performing three other regression analyses that included all predictors other than substance use, but only one substance use measure in each regression (results not shown). When alcohol was the only substance included as a predictor, it was significant for both females ( $\beta = -.04$ ,  $p < .001$ ) and males ( $\beta = -.04$ ,  $p < .001$ ). Similarly, marijuana was predictive for males ( $\beta = -.03$ ,  $p < .001$ ) and females ( $\beta = -.05$ ,  $p < .001$ ) when cigarette and alcohol use were not included in the regression. Frequency of skipping school was also significant in each of these models, except in the model of female cigarette use. Overall, the coefficients of other variables varied only slightly in these regressions.

### *Phase 2. Unexpected Educational Pathways*

In the second phase of the analyses, we focus only on those who, as seniors in high school, indicated either that they definitely would or definitely would not graduate from a 4-year college. We focus first on those who said they definitely would and use logistic regression to distinguish between those who met their educational expectations and those who did not. Then we analyze the subsample of youth who said they definitely would not graduate and investigate predictors of youth surpassing their educational expectation.

**Table 2.** Regression Coefficients Predicting Expectations for College Graduation at Age 18, by Gender

	Males <sup>1</sup>			Females <sup>2</sup>		
	<i>b</i>	<i>SE</i>	$\beta$	<i>b</i>	<i>SE</i>	$\beta$
<b>Background characteristics</b>						
Parental educational level	.07	0	.15***	.09	0	.19***
No. of parents in the home	.02	.02	.01	.03	.02	.01
Population density	-.12	.01	-.08***	-.11	.01	-.07***
European or Asian American	-.14	.03	-.04***	-.0	.02	-.06***
Religiosity	.02	.01	.02**	.01	.01	.01
<b>School- or work-related</b>						
Curriculum	.77	.02	.34***	.66	.02	.28***
Average grade	.08	.01	.14***	.07	.01	.12***
2-year college aspiration	-.01	.02	-.04***	-.34	.02	-.13***
Graduate school aspiration	.51	.02	.22***	.59	.02	.25***
Hrs/week employed	-.03	0	-.06***	0	0	0
<b>Problem behaviors</b>						
Days of school skipped	-.01	.01	-.01	0	.01	0
Cigarette use	-.05	.01	-.05***	-.06	.01	-.07***
Alcohol use	-.01	.01	-.02	0	.01	-.01
Marijuana use	-.01	.02	0	-.02	.02	-.01
		$R^2$	.46		$R^2$	.43

<sup>1</sup>*n* = 13,655; <sup>2</sup>*n* = 15,125 (all *ns* are weighted).

\**p* < .05, \*\**p* < .01, \*\*\**p* < .001.

*Unexpected nongraduates.* Among high school seniors who said they would graduate from a 4-year college, 66% did graduate, whereas 34% did not by age 25/26. Results of the logistic regression predicting unexpected pathways (i.e., not graduating from college) for this subsample are presented in the first two columns of Table 3. For gender comparisons, OR from logistic regressions that predicted pathways just for males and just for females are also presented in Table 3. The results of three logistic regressions in which this subsample was divided into three cohorts appear in Table 4.

Which high school seniors who expected to graduate from a 4-year college had not done so by age 25/26? They were less likely to live with both parents, and their parents had lower levels of educational attainment. They were also more likely to live in rural areas, to be members of disadvantaged minorities, and were less religious than their peers who did graduate from college. However, in the supplementary logistic regressions, religiosity was only related to lower odds of an unexpected pathway for males during the later years of the study.

The only demographic indicator that did not significantly differentiate between participants who had graduated and those who had not was gender. When examining cohort differences, however, we did find gender effects. During the earlier years of the study (1976–1981), females’ odds of entering an unexpected pathway by not graduating from college were higher than males’ odds. In contrast,

**Table 3.** Odds Ratios of Unexpectedly Not Graduating from College by Age 25/26

	Entire subsample <sup>1</sup>		Males only <sup>2</sup>		Females only <sup>3</sup>	
	OR	95% CI	OR	95% CI	OR	95% CI
<b>Background characteristics</b>						
Parental educational level	.84***	.82–.86	.86***	.83–.89	.83***	.80–.85
No. of parents in the home	.72***	.65–.81	.81*	.68–.96	.67***	.57–.77
Population density	1.32***	1.23–1.42	1.37***	1.22–1.53	1.30***	1.18–1.43
Female	.95	.86–1.06	–	–	–	–
European/Asian American	.57***	.49–.67	.70**	.54–.90	.51***	.42–.62
Religiosity	.92**	.88–.97	.90**	.84–.97	.94	.88–1.01
<b>School- or work-related</b>						
Curriculum	.51***	.45–.58	.52***	.42–.63	.51***	.43–.60
Average grade	.70***	.68–.72	.71***	.67–.74	.69***	.66–.73
2-year college aspiration	2.62***	2.21–3.10	2.30***	1.74–3.04	2.84***	2.29–3.52
Graduate school aspiration	.78***	.70–.87	.82*	.69–.97	.74***	.64–.86
Hrs/week employed	1.08***	1.05–1.11	1.10***	1.06–1.14	1.06***	1.03–1.10
<b>Problem behaviors</b>						
Days of school skipped	1.09**	1.03–1.15	1.13**	1.04–1.23	1.06	.98–1.14
Cigarette use	1.24***	1.17–1.31	1.20***	1.10–1.31	1.26***	1.17–1.37
Alcohol use	.91***	.87–.95	.89***	.83–.95	.93*	.87–.99
Marijuana use	1.17*	1.00–1.37	1.22	.97–1.52	1.15	.92–1.42
Nagelkerke $R^2$	.29		.27		.32	

<sup>1</sup> $N = 8,666$ ; <sup>2</sup> $n = 3,629$ ; <sup>3</sup> $n = 5,038$  (all  $ns$  are weighted).

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

during the more recent years of the study (1989–1994), females' odds of leaving their educational pathway were lower than males' odds. In the middle years of the study (1982–1988), gender was not significantly related to educational pathways. It appears that the change in the relation between gender and educational attainment explains the null effect found in the analysis for the entire subsample.

School- and work-related variables also predicted which high school seniors would not graduate from college by age 25/26. Unexpected nongraduates were in general, vocational/technical, or other curricula, had lower grades, and worked more hours per week during the school year than students who did subsequently graduate from college. Those who followed an unexpected pathway were also more likely to want to attend a 2-year college and less likely to want to attend graduate or professional school than their peers (although this was only true of participants in the middle and later years of the study).

High school seniors who expected to graduate from college but did not do so skipped school more frequently than those who did graduate. Separate logistic regressions by gender showed that this effect only existed for males. In addition, skipping days of school was not significantly related to educational pathways during the earliest or latest years of the study.

Unexpected nongraduates used alcohol less frequently during high school than their peers who went on to graduate from college. This effect was also apparent in follow-up analyses for seniors in years 1982–1988 and 1989–1994. However,

**Table 4.** Odds Ratios of Unexpectedly Not Graduating from College by Age 25/26, by Cohort

	1976–1981 <sup>1</sup>		1982–1988 <sup>2</sup>		1989–1994 <sup>3</sup>	
	OR	95% CI	OR	95% CI	OR	95% CI
<b>Background characteristics</b>						
Parental educational level	.85***	.81–.89	.84***	.81–.88	.84***	.80–.87
No. of parents in the home	.75	.59–.96	.76**	.63–.92	.67***	.56–.79
Population density	1.25**	1.09–1.44	1.23**	1.09–1.39	1.50***	1.32–1.69
Female	1.35**	1.09–1.66	1.00	.83–1.19	.73***	.62–.87
European/Asian American	.62**	.45–.85	.57***	.44–.75	.55***	.43–.70
Religiosity	.93	.84–1.03	.95	.87–1.03	.90**	.83–.97
<b>School- or work-related</b>						
Curriculum	.58***	.45–.75	.43***	.35–.53	.56***	.45–.69
Average grade	.71***	.66–.76	.70***	.67–.75	.68***	.64–.72
2-year college aspiration	2.05***	1.43–2.94	2.69***	2.04–3.55	2.98***	2.28–3.91
Graduate school aspiration	.86	.69–1.06	.76**	.63–.91	.74**	.61–.89
Hrs/week employed	1.06*	1.01–1.11	1.06**	1.02–1.11	1.12***	1.08–1.16
<b>Problem behaviors</b>						
Days of school skipped	1.12	1.00–1.25	1.12*	1.02–1.23	1.04	.95–1.14
Cigarette use	1.23***	1.11–1.36	1.13*	1.02–1.24	1.35***	1.21–1.49
Alcohol use	.93	.86–1.01	.91*	.85–0.98	.90**	.83–.97
Marijuana use	1.21	.92–1.59	1.29*	1.01–1.66	.99	.72–1.36
Nagelkerke $R^2$	.26		.29		.34	

<sup>1</sup> $n = 2,061$ ; <sup>2</sup> $n = 3,200$ ; <sup>3</sup> $n = 3,405$  (all  $n$ s are weighted).

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

there was no significant relation between alcohol use and educational attainment for seniors in years 1976–1981, perhaps because during these years drinking was legal for 18-year-olds in many states. There was also no relation between alcohol use and educational attainment when we checked for issues of multicollinearity by running a model without cigarette and marijuana use. On the other hand, those who did not graduate from college used cigarettes and marijuana more frequently than their peers. When additional analyses were performed for only males and only females, the relation between marijuana use and educational attainment was no longer significant. Furthermore, marijuana use was only negatively related to college graduation for high school seniors in the years 1982–1988.

In sum, many of the background characteristics, school- and work-related experiences, and problem behaviors that have previously been related to educational attainment also predict unexpectedly not graduating from college. Since the independent variables had significant predictive value (Nagelkerke  $R^2 = .29$ ) when modeling college graduation, even in a sample who all expected to graduate, these results suggest that there are systematic differences between students who are able to meet their educational attainment expectations and those who have difficulty doing so.

*Unexpected graduates.* The picture looks somewhat different when we consider the predictors of the educational pathways of high school seniors who

**Table 5.** Odds Ratios of Unexpectedly Graduating from College by Age 25/26

	Entire subsample <sup>1</sup>		Males only <sup>2</sup>		Females only <sup>3</sup>	
	OR	95% CI	OR	95% CI	OR	95% CI
<b>Background characteristics</b>						
Parental educational level	1.22***	1.11–1.34	1.20*	1.04–1.38	1.24**	1.08–1.42
No. of parents in the home	.93	.64–1.37	.64	.40–1.02	1.87	.86–4.06
Population density	.83	.63–1.09	.88	.59–1.32	.75	.50–1.11
Female	.44***	.28–.67	—	—	—	—
European/Asian American	.68	.38–1.22	.52	.24–1.15	.91	.36–2.30
Religiosity	1.31**	1.07–1.60	1.38*	1.05–1.80	1.15	.85–1.55
<b>School- or work-related</b>						
Curriculum	5.41***	3.50–8.35	6.02***	3.22–11.26	5.06***	2.71–9.44
Average grade	1.31***	1.16–1.49	1.29**	1.10–1.52	1.34**	1.11–1.63
2-year college aspiration	.56*	.35–.91	0.38*	.16–.88	0.74	.41–1.36
Graduate school aspiration	2.69***	1.73–4.18	1.99*	1.01–3.93	3.80***	2.08–6.97
Hrs/week employed	.94	.86–1.03	.98	.87–1.10	.89	.78–1.02
<b>Problem behaviors</b>						
Days of school skipped	1.27*	1.06–1.53	1.27	.98–1.64	1.29	.98–1.70
Cigarette use	.89	.74–1.07	.85	.65–1.10	.94	.71–1.23
Alcohol use	1.01	.87–1.19	1.00	.81–1.22	1.00	.78–1.28
Marijuana use	.44*	.23–.85	.32*	.13–.82	.64	.25–1.64
Nagelkerke $R^2$	.26		.27		.27	

<sup>1</sup> $n = 3,400$ ; <sup>2</sup> $n = 1,399$ ; <sup>3</sup> $n = 2,001$  (all  $n$ s are weighted).

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

indicated that they definitely *did not* expect to graduate from a 4-year college. As Table 5 shows, only 9 of the 15 independent variables predicted who would enter an unexpected pathway rather than staying on the one they previously expected. Our limited predictive power in this analysis is partially due to the discrepancy in the sample size of youth who did not expect to graduate but then did so by age 25/26 (3%) compared to those who remained on their expected pathway (97%). Despite the relatively small number of “unexpected graduates,” we were able to find significant differences between the groups.

Young adults who unexpectedly graduated from college had higher levels of parental education, attended religious services more frequently, and were more likely to be male than their peers who remained on a noncollege pathway. The protective nature of religiosity was only significant for males when analyses were run separately by gender.

Unexpected graduates were much more likely to be in college preparatory courses than their peers who did not graduate. They also had higher grades during high school, were more likely to aspire to attend graduate or professional school, and were less likely to want to attend a 2-year college, although this last finding was nonsignificant for the females-only analysis.

There was relatively little relation between problem behaviors and college graduation for unexpected graduates. Interestingly, cutting school actually served

as a “protective factor.” Unexpected graduates were more likely to skip days of school. However, this effect was no longer significant when we conducted follow-up analyses on smaller samples of only males and only females. Young adults who graduated from college also used marijuana less frequently during high school than their peers who did not graduate. In follow-up analyses, marijuana was only related to educational attainment for males. When we checked for issues of multicollinearity among the substance use measures, we found that cigarette use was marginally significant by itself ( $OR = .84, p = .05$ ), and there were no other large differences in the effects of problem behaviors.

### Discussion

Although educational expectations are usually stable over time, small but significant groups of youth alter their expected educational pathways during the transition to adulthood. By defining participants’ educational paths as those that they expected for themselves during high school, we were able to compare youth who remain on their personal educational pathway with those who leave their pathway. Our results suggest that unexpected pathways are predictable from young adults’ family and demographic backgrounds, their academic engagement and experiences in high school, problem behaviors, and other activities. Overall, many of these characteristics were positively related to college graduation regardless of participants’ expectations during high school. Higher levels of parental education and religiosity, enrollment in an academic or college preparatory curriculum, high average grades, and aspirations for graduate school were always related to a greater likelihood of graduating from college. Thus, these factors were positively related to unexpected graduation, and negatively related to unexpected nongraduation.

Interestingly, the effect of skipping days of high school on college graduation differed among those who expected to graduate and those who did not. Youth who cut school were more likely to end up in either unexpected pathway: If they expected to graduate and cut school, they had lower odds of graduating, but if they did not expect to graduate and they cut school, they had higher odds of graduating. Follow-up *t* tests on the small group of youth who frequently skipped whole days of school and did not expect to graduate from college ( $n = 39$ ) revealed that those who eventually did graduate (the unexpected graduates) were more likely to be in college preparatory classes,  $M = .57, t(31.89) = -4.82, p < .001$ , than their peers who continued on their educational pathways and did not graduate from college ( $n = 5,693, M = .15$ ). Unexpected graduates also had higher grades,  $M = 6.09, t(4572) = -3.07, p < .01$ , than their peers ( $M = 5.07$ ), but these two groups did not otherwise differ on the variables in this study. Thus, this group was at no higher risk of substance use than their peers, and they had a few protective factors in their favor. It is unclear why these youth were skipping school, and our data do not provide insights into characteristics of their high school environments;

this uncommon group of youth holds promise for meaningful future studies on unexpected pathways.

Among youth who did not expect to graduate from college, females were more likely to remain on a nongraduate path of educational attainment. Although there are gender differences in educational attainment (Peter & Horn, 2005), there were no gender differences in the likelihood of meeting previous expectations to definitely graduate from college. Yet there were gender differences in young adults' odds of unexpectedly not graduating when we examined the findings more closely by cohort. In particular, women's odds of not graduating (if they had previously expected to graduate) followed the opposite trend of their overall rate of college graduation. Thus, when women's odds of unexpectedly not graduating were higher than men's, their overall rate of college graduation was lower than men's; in more recent years, women's college graduation rate has increased, and their odds of unexpectedly not graduating has decreased, relative to men's. This finding highlights the need to take historical changes and trends into account when interpreting empirical results and generating theories.

The strength of this study was that we defined educational pathways as those that adolescents believed they were on. Unfortunately, this definition brought with it measurement error; since we only used one item to measure educational pathways, some adolescents may have been misclassified during high school. Since participants did not provide a second indicator of their graduation plans until 1 or 2 years later, when they might have already altered their educational plans, we were unable to corroborate their pathways. If some students did misreport their expectations, we have no reason to believe that there are systematic differences between them and youth who accurately reported their educational expectations; the main impact of such measurement error is most likely a reduction in the odds estimates. Despite this potential limitation, we were able to demonstrate important differences between youth who stay on their pathway and those who do not.

Studying unexpected pathways rather than focusing solely on normative pathways gives us greater insight into the complexity inherent in the course of educational attainment. Although individuals' expectations are highly predictive of their future educational activities, many young adults attain an unexpected level of education. Therefore, expectations are not sufficient for youth to attain their expected educational attainment. Furthermore, there are relations between demographic characteristics, high school experiences, problem behaviors, and educational pathways that can be addressed by adults who are concerned with adolescents' educational futures.

Young adults who expected to graduate from college but do not do so may have unrealistic expectations, or may be at risk for interference in their educational plans from external circumstances or barriers. Although unfulfilled goals and plans may be detrimental to young adults' well-being (Nurmi & Salmelo-Aro, 2002), unexpected pathways are not necessarily harmful or undesirable. Young adults

who do graduate from college despite not expecting to do so appear to be in a better position than their peers to enroll in college when they do change their educational plans after their senior year of high school. The results of this study suggest that making transitions between different educational pathways easy is perhaps the best way for parents and teachers to help their children and students in the future. For all adolescents, despite their educational expectations, this can be achieved by strong academic preparation during high school. Enrolling in advanced coursework and achieving high grade point averages appear to help adolescents be ready to complete college, and are also behaviors that parents, teachers, and other concerned adults can encourage. In addition, adults should be aware of potential disadvantages in the school experiences of minorities and students of low SES and work with their children or students to ensure that they can be resilient in the face of barriers to their educational plans.

Ensuring that unexpected pathways do not harm young adults' well-being also requires preparing students who expect to graduate from college for the potential that they will need to seek full-time employment without a college degree. Increased attention to career planning within the standard curriculum, including teaching students how to seek information and providing detailed information about typical experiences in college classrooms and the workplace, might serve these ends. Many career-guidance programs include valuable elements, but these programs are not necessarily widely available to students.

By taking a person-centered approach, we illustrated that some predictors were more beneficial (or less harmful) for one group of young adults than for another. For instance, family composition, population density, and race did account for differences in college graduation rates among high school seniors who expected to graduate, but they were unrelated (after controlling for other factors) to college graduation among students who did not expect to graduate. Furthermore, high school curriculum and aspirations to attend graduate or professional school appeared to be stronger predictors of college graduation among seniors who did not expect to graduate than among those who did.

Theories of educational achievement should strive to explicitly recognize that effects on students' attainment do differ from person to person. This reality is rarely denied by educational theories, but empirical studies rarely address students at the extremes of observable phenomena and those who exhibit discontinuity in realms for which continuous development is normative. The results of this study illustrate that our theories do not describe all students, or all cohorts, equally well. Influences that promote educational attainment and those that act as barriers or dissuade educational pursuits act together, effecting each other as well as educational attainment outcomes, in a dynamic system that changes over time (Feinstein & Peck, 2008).

Even though we were able to account for part of the variance between individuals who are in unexpected versus expected pathways, a substantial amount of

the variance was left unexplained. Considering that the timing of these educational inconsistencies occurs during the transition to adulthood, some youth may be experiencing turning points that interfere with their paths or lead them to decide that another path is more appropriate. Future research might investigate events that occur during the transition to adulthood and serve as turning points for some youth, sending them into an unexpected educational pathway.

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