### CORRELATES AND CONSEQUENCES OF FUTURE EXPECTATIONS AT THE TRANSITION TO ADULTHOOD AMONG HIGH-RISK ADOLESCENTS

by

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University of Pittsburgh, 2016

Little is known about how future expectations at the transition to adulthood are formed and whether these beliefs forecast young adult outcomes among high-risk adolescents involved in the juvenile justice system. Using a sample of 989 serious adolescent offenders ( $M_{age} = 15.96$  years, SD = 1.13; 86.7% male), the present study examined (a) if there were distinct, multivariate profiles of future expectations at the transition to adulthood at 18 years (i.e., future expectations for educational attainment, occupational success, and law-abiding behavior), (b) the correlates (i.e., socioeconomic status, demographic, and social factors) of future expectations, and (c) whether future expectations mediated the relation between socioeconomic status and young adult outcomes (i.e., educational attainment, occupational attainment, and law-abiding conduct at age 21 years). There was no support for multivariate profiles of future expectations in this high-risk sample. Analyses that examined each domain of future expectations separately revealed that socioeconomic status was not a robust correlate of young offenders' future expectations in any domain. With respect to demographic correlates, males and ethnic minority youth reported lower expectations for adulthood success in comparison to their female and White counterparts. With respect to social correlates, higher parental expectations and greater bonding to teachers were associated with higher adolescent future expectations, although these relations varied by the domain of expectations. Finally, although there was not robust evidence that future expectations mediated the relation between socioeconomic status and young adult outcomes in any domain, both educational and law-abiding future expectations were associated with prospective outcomes

in the respective domains, with educational expectations associated with educational achievements and law-abiding expectations related to antisocial behavior in early adulthood.

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#### **1.0 INTRODUCTION**

Adolescence is marked by increases in conceptualizing and planning for the future (Erikson, 1968). One set of future cognitions, adolescent expectations for adulthood, are posited to serve as a cognitive blueprint of youth's anticipated adult selves (Nurmi, 1991). These future beliefs are closely linked to prospective educational outcomes, occupational attainment, and law-abiding conduct (Beal & Crockett, 2010; Hogan & Astone, 1986; Iselin et al., 2012; Mello, 2008; Schoon, 2001). Although most youth wish to become productive adult citizens, youth vary in their expectations of how likely it is that they will achieve these adult milestones. Large disparities in expectations for adult success are observed between socioeconomic classes, where disadvantaged youth report lower educational and occupational expectations can act as self-fulfilling prophecies, predicting adult educational and occupational attainment above and beyond cognitive abilities (Ashby & Schoon, 2010; Beal & Crockett, 2010).

Understanding expectations for adulthood may be especially important among adolescents involved in the juvenile justice system, who are particularly at risk for poor adjustment in adulthood. For instance, adolescents with justice system involvement are overrepresented in economically disadvantaged communities (Loeber & Farrington, 1998), and justice system involvement compounded with socioeconomic disadvantage is likely to restrain these high-risk teens' expectations of becoming successful adults, or even surviving into adulthood. However, positive future expectations have distinguished reoffending from nonreoffending antisocial individuals (Benda, 2001), and studies find that future orientation among juvenile offenders increases across adolescence and into early adulthood (Monahan, Steinberg, Cauffman, & Mulvey, 2013), suggesting that there is important variation in future expectations that may influence later development. Taken together, thoughts about one's future promise may be important for understanding adult outcomes of juvenile justice involved youth, especially at the transition to adulthood at age 18 years which seems to be a critical point in transition for psychological considerations of one's future. To develop a more nuanced understanding of future expectations among high-risk adolescents involved in the juvenile justice system, the present study aims to (1) identify latent profiles of juvenile offenders' expectations across educational, occupational, and law-abiding conduct domains at 18 years, (2) elucidate correlates of young offenders' future expectations, specifically demographic and social variables that may moderate the impact of socioeconomic status on expectations, and (3) investigate if future expectations at 18 years mediate the relation between socioeconomic status and early adulthood outcomes (i.e., educational attainment, occupational outcomes, and law-abiding conduct at 21 years).

#### **1.1 THEORETICAL FRAMEWORK**

The present study draws on a resilience framework to examine high-risk adolescent expectations at the transition to adulthood at 18 years as a multidimensional construct, as well as to investigate the correlates and consequences of these future beliefs. *Resilience* is defined as the process of positive adjustment in the context of risk or adversity (Luthar & Cicchetti, 2000; Masten & Powell, 2003). In the current study, I examine psychological markers of resilience to

socioeconomic disadvantage in adolescence (i.e., relatively higher adolescents' future expectations for adulthood at age 18 years) and behavioral indices of resilience (i.e., positive educational, occupational, and law outcomes at age 21 years).

#### **1.2 EXPECTATIONS OF THE FUTURE AT THE TRANSITION TO ADULTHOOD**

According to resilience frameworks, developmental transitions are important times to assess youth functioning, and the transition to adulthood has garnered considerable attention as a time for behavioral and psychological resilience (Burt & Paysnick, 2012; Masten et al., 2004; Masten & Powell, 2003; Yates & Grey, 2012). Researchers have conceptualized the transition to adulthood as the legal age at which individuals are considered adults (i.e., at age 18 years), but developmental psychologists have also considered the transition to adulthood as the time at which individuals achieve a greater variety of adult developmental tasks (i.e., mid-twenties) (Arnett, 2000). Given the study's focus on juvenile offenders, who typically desist in their criminal activity around 18 years of age (see Piquero, 2008 for a review), in part because of their adult legal status (Moffitt, 1993), the present study conceptualizes the transition to adulthood as age 18 years. In other words, it appears that 18 years is a crucial turning point for adolescent offenders, and may be an important time to assess psychological resilience. This transitional period is accompanied by gains in both opportunities and social support to assume adult roles and the cognitive inclinations to take advantage of such chances (Masten, Burt, & Coatsworth, 2006; Masten et al., 2004). As such, even the most troubled youth, such as adolescents involved in the justice system, may begin to exhibit positive development despite previous adjustment problems.

Although studies find that antisocial youth have low future expectations in early- and mid-adolescence (Oyserman & Markus, 1990), increases in youth's future expectations may be observed as youth exit this developmental period. Researchers have theorized that young offenders are able to take greater control over their lives at the entry to adulthood, and thus, youth may increase their hopes for a positive future (Lewis, Ross, & Mirowsky, 1999; Moffitt, 1993). Further, engaging in antisocial behavior problem behavior in adolescence may be a mechanism for attaining "adult" status, and once youth reach adulthood there may be less of a need to establish themselves as mature (Moffitt, 1993). Indeed, longitudinal studies suggest that adolescents generally show positive gains in related psychological constructs during this period. Specifically, both normative populations of adolescents and youthful offenders report higher future orientation (i.e., future consideration and planning), a relevant construct to adolescent future expectations, during the transition to adulthood in comparison to earlier adolescent years (Monahan, Steinberg, Cauffman, et al., 2013; Steinberg et al., 2009). However, although there are increases in future orientation across both typically-developing and high-risk adolescent populations, the predictive validity of young offenders' future expectations at this transition may be quite different. More support for assessing these future cognitions at this transition comes from studies that find future expectations during late adolescence are stronger predictors of adulthood adjustment than those during early teen years (Greene, 1990; Greene, Wheatley, & Aldava, 1992). In sum, the transition to adulthood may be a unique moment in the lives of youthful offenders when they can calibrate their expectations for the future.

Although the majority of studies focus on one domain of adolescent future beliefs, such as expectations to obtain a college degree (Bozick, Alexander, Entwisle, Dauber, & Kerr, 2010; Purtell & McLoyd, 2013), resilience theory suggests that it is important to examine multiple domains of development. Indeed, the odds of adolescents from low-income neighborhoods *and* with juvenile justice involvement attending college are low (Hjalmarsson, 2008; Loeber & Farrington, 1998), but this does not necessarily translate to youth's beliefs in their ability to accomplish other developmental tasks in adulthood. For example, many adolescent offenders desist from criminal activity during the transition to adulthood (Moffitt, Caspi, Harrington, & Milne, 2002; Monahan, Steinberg, Cauffman, & Mulvey, 2009; Monahan, Steinberg, Cauffman, et al., 2013), and many achieve adult milestones beyond the educational realm, such as finding legal outlets of employment (Monahan, Steinberg, & Cauffman, 2013; Sampson & Laub, 1993). Given the importance of examining high-risk youth in a more holistic way, the current study takes both a person-centered approach to identify profiles of youthful offenders' expectations across educational, occupational, and law-abiding conduct domains (Bergman, 2001; Bergman & Andersson, 2010), and also examines each of these future expectation domains individually.

#### **1.3 SOCIOECONOMIC STATUS AND ADOLESCENT FUTURE EXPECTATIONS**

Socioeconomic status is a robust predictor of adolescents' future beliefs, and can facilitate or restrain adolescents' expectations for educational and occupational attainment, depending on where youth fall within the socioeconomic spectrum (Dillard & Perrin, 1980; McLoyd & Jozefowicz, 1996; Mello, 2009). Youth of higher socioeconomic status are hypothesized to have greater access to educational opportunities, financial resources, role models, and social networks relevant for adult educational and occupational success (Schoon & Parsons, 2002; Schulenberg, Vondracek, & Crouter, 1984). As such, these youth often report high, stable expectations for

post-secondary educational attainment (Tynkkynen, Tolvanen, & Salmela-Aro, 2012) and occupational prestige (Rojewski & Yang, 1997).

Socioeconomically disadvantaged youth's aspirations for adulthood are leveled by their experiences in their school, neighborhood, and family contexts (MacLeod, 1987). Specifically, low-income youth—which characterizes many juvenile justice involved youth—are likely to attend poorly resourced schools, are linked to few role models that have attained occupational success through academic routes, and financial stress may impede parent involvement in their development (Buchmann, 1989; McLoyd & Flanagan, 1990). Not surprisingly, low-income adolescents often report low expectations for educational success (Hanson, 1994; Trusty & Harris, 1999), career aspirations (Conger et al., 1993; McLoyd, 1989; Schulenberg et al., 1984), and some even envision shortened lifespans (Burton, Allison, & Obeidallah, 1995).

## 1.4 MODERATORS OF SOCIOECONOMIC STATUS AND HIGH-RISK ADOLESCENTS' EXPECTATIONS

Although strong links exist between socioeconomic adversity and youth future expectations, resilience theorists are interested in what factors may increase or reduce youth's positive outcomes in the face of financial stress (Fergus & Zimmerman, 2005). The current investigation examines demographic variables (gender and race/ethnicity) and social factors (parental expectations and bonding to teachers) as potential moderators of socioeconomic status and future expectations among adolescents involved in the juvenile justice system.

Very little is known about how socioeconomic adversity may differentially impact highrisk male and female future expectations, but there is reason to believe that there are gender differences. Studies find that females tend to report higher positive expectations across personal, educational, and occupational domains than males (Mello & Swanson, 2007). Further, males are posited to be more sensitive to poor economic conditions than females (Connell & Halpern-Felsher, 1997; Crowder & South, 2003; Entwisle, Alexander, & Olson, 1994), with one explanation being that males may witness and/or experience higher levels of violence within their low-income neighborhoods (Fitzpatrick & Boldizar, 1993). Taken together, it may be that males' future expectations are more susceptible than females' to economically strained contexts.

Despite theory suggesting that males' expectations are more responsive to economic conditions than females', there is mixed evidence if economic disadvantage differentially impacts future expectations by gender. In a sample of urban, Black late adolescents (10<sup>th</sup>-12<sup>th</sup> graders), lower perceived neighborhood quality was associated with reduced educational (e.g., obtaining a college degree) and personal (e.g., be living) expectations for males but not for females (Mello & Swanson, 2007). However, a study of early adolescents (7<sup>th</sup>-8<sup>th</sup> graders) found a positive relation between neighborhood quality and educational values for females, but no relation for males (Ceballo, McLoyd, & Toyokawa, 2004). This discrepancy in findings may be due in part to age differences between the two samples, as males may begin to evidence greater susceptibility to poor neighborhood conditions in later adolescence. Examining male and female young offenders' expectations at the transition to adulthood may serve to clarify this relation.

Race/ethnicity and socioeconomic status have been largely confounded in their impacts on youth development, and the expectations literature has shifted its focus to understanding their unique and interactive effects. Within a low socioeconomic status context, ethnic minority youth face both financial and race-related barriers to achieving adult milestones (Smith, 1983). Thus, it is likely that ethnic minorities' expectations for adult success may be more sensitive to socioeconomic adversity than White youth's. Among adolescent offender samples, there have been initial attempts to understand racial differences in future expectations. Racial differences have been observed among youthful offenders' life expectancies, such that Hispanic youth report the lowest life expectancy, followed by Black, and then White young offenders with the highest (Piquero, 2014). However, one study of incarcerated youth found no racial differences in youth's anticipated future selves, but it is possible that incarceration status may have confounded these results (Clinkinbeard & Zohra, 2012). Researchers have yet to test the interaction between socioeconomic status and race/ethnicity on juvenile offenders' future expectations.

Parental expectations may serve as a general promotive factor for higher youth future expectations, and may also protect against other risk factors, such as low socioeconomic status. Parental expectations are posited to predict greater involvement in their adolescents' educational and occupational development, and, in turn, impact their adolescent's expectations for future success (Eccles, Wigfield, & Schiefele, 1998; Nurmi, 1987). In addition, high parental expectations protect against socioeconomic adversity on adolescent educational achievement (De Civita, Pagani, Vitaro, & Tremblay, 2004; Eccles, Jacobs, & Harold, 1990; Schoon, 2006), and parental encouragement of adolescents' career aspirations may be a factor that can reduce the intergenerational transmission of poverty (Ashby & Schoon, 2012). When examining young offenders' expectations for adult success, an important extension to examining parents' expectations for their youth's educational and occupational success is to examine parents' beliefs of their adolescent's ability to stay out of trouble with the law. Given that high parental educational and occupational expectations are often associated with parental involvement (Eccles et al., 1998), high parental expectations for their youth's law abiding conduct may similarly reflect parents' efforts to assist their adolescents away from crime.

While there is no question that parents are important targets for promoting positive outcomes in antisocial youth, youth involvement in delinquent behavior is often associated with poor parental quality (Odgers et al., 2008; Roisman, Monahan, Campbell, Steinberg, & Cauffman, 2010). Thus, it is important to identify other sources of adult support that promote resilience in high-risk youth (Herrenkohl, Herrenkohl, & Egolf, 1994; Wang, Brinkworth, & Eccles, 2013). Researchers have highlighted the pivotal role teachers can play in promoting or inhibiting positive youth development among high-risk youth (Jussim, Eccles, & Madon, 1996; Madon et al., 1998). Positive teacher-adolescent bonds have been found to be most beneficial among youth at highest risk for school failure (classified by social disadvantage and past academic difficulties), and, in some cases, bonds have been found to reduce risk for high school dropout by about half (Croninger & Lee, 2001). On the other hand, it is posited that when teachers label juvenile justice involved students as "delinquent," youth's positive identification as a student is negatively impacted. In turn, this stigmatization may lead juvenile justice involved youth to affiliate less with prosocial peers and school authorities, and perpetuate their involvement with deviant peer groups (Bernburg, Krohn, & Rivera, 2006; Kaplan & Liu, 1994). Although the benefits of teacher-adolescent relationships are less studied among young offenders, it is likely that these non-familial bonds are important for buffering socioeconomic hardship's impacts on adolescent offenders' future expectations.

# 1.5 EXPECTATIONS AS A MEDIATOR OF SOCIOECONOMIC STATUS AND YOUNG ADULT OUTCOMES

Within community samples, adolescents' expectations of the future are found to be meaningful mechanisms that link socioeconomic status and adulthood outcomes (Haller & Portes, 1973). Similar in strength to the relation between socioeconomic status and adolescent expectations is the link between adolescents' future beliefs and young adult outcomes. There is general consensus that adolescents' educational, occupational, and law future expectations are important predictors of eventual educational outcomes, occupational attainment, and both adolescent and adult law-abiding conduct (Ashby & Schoon, 2012; Beal & Crockett, 2010; Bozick et al., 2010; Iselin, Mulvey, Loughran, Chung, & Schubert, 2012; Piquero, 2014; Schoon, 2001; Skorikov & Vondracek, 2007; Tynkkynen et al., 2012).

Within high-risk juvenile justice samples, there is less agreement if youthful offenders' expectations for the future mediate socioeconomic adversity's impacts on young adult outcomes. Some researchers speculate that youth expectations may operate differently among high-risk samples than they do among typically developing adolescents. Specifically, severely impoverished youth may engage in future planning as an escape from current adversity rather than as a means for action (Bozick et al., 2010; Nuttin, 1985). Moreover, the link between future expectations and adult outcomes may be a weak relation, as many youth involved in the justice system often lack the social, educational, and financial capital for goal actualization (Loeber & Farrington, 1998). However, future expectations have been found to predict young adult milestones even among high-risk samples. Results from a study of minority children from high-poverty neighborhoods found that adolescent educational expectations were associated with educational attainment at age 20 years (Ou & Reynolds, 2008). Furthermore, one prospective

study found that adolescent offenders' expectations for work predicted legal employment status the following year (Iselin et al., 2012). Understanding if juvenile offenders' future perceptions at the verge of adulthood link socioeconomic status and achieving adult milestones will inform whether these are important targets for easing the transition to adult life.

#### 1.6 RESEARCH QUESTIONS AND HYPOTHESES

The present study investigates the profiles, correlates, and consequences of juvenile offenders' expectations for success at the transition to adulthood (i.e., at 18 years of age) across educational, occupational, and law domains. The present study is guided by three aims (see Figure 1). Aims 2 and 3 apply to both person-centered (i.e., latent profile analyses) and variable-centered analyses (i.e., examining each domain of expectations separately).

First, I aimed to identify latent profiles of high-risk adolescents' future expectations across educational, occupational, and law domains. I hypothesized three distinct profiles: (1) youth who exhibit relatively higher expectations across all domains, (2) youth who exhibit relatively lower expectations across all domains, and, given that adolescent offenders are often at risk for school failure, (3) youth who exhibit relatively higher expectations for educational success.

Second, the present study aimed to examine how socioeconomic status, demographic characteristics, and social factors were related to adolescents' future expectations, and how demographic and social factors interacted with the impacts of socioeconomic status. I predicted that lower socioeconomic status adolescents would report lower expectations for success across all domains. Informed by previous findings, it was expected that males and ethnic minority youth

(Black and Hispanic) would report lower expectations for adulthood in comparison to females and White youth, and be most vulnerable to socioeconomic disadvantage's impacts on expectations for adult success. Finally, higher levels of positive social feedback, specifically high parental expectations and adolescent bonding to teachers, would be positively associated with youth expectations, and would buffer against socioeconomic disadvantage.

The third aim of the current study was to test if future expectations mediated the association between socioeconomic status and young adult outcomes. It was predicted that socioeconomic status, future expectations, and behavioral outcomes in the respective domain (e.g., attending college would be related to educational expectations) would be positively related to one another. Finally, it was hypothesized that future expectations would mediate the relation between socioeconomic status and adulthood outcomes.



Controls: age at baseline, IQ, academic achievement, time spent in the community

Figure 1. Conceptual model

#### **2.0 METHOD**

#### 2.1 PARTICIPANTS

Data of 989 male and female juvenile offenders (86.7% males) was drawn from the Pathways to Desistance study (N = 1.354; 86.4% males), a multi-site, 7-year longitudinal study that followed serious juvenile offenders from adolescence to early adulthood. Adjudicated youth from the juvenile and adult court systems in Phoenix, Arizona (n = 654) and Philadelphia, Pennsylvania (n = 700) were enrolled in the study between November 2000 and January 2003. Inclusion in the study for male youth required that males were between the ages of 14-17 years old during the time of their committing offense, and were adjudicated of a serious offense (i.e., felonies or similarly serious non-felony offenses, such as misdemeanor property offenses, sexual assault, and weapon offenses). To ensure there was not an overrepresentation of male drug offenders, the study capped the sampling of male youth with drug offenses to 15%. Due to the much smaller number of female offenders within the juvenile justice system, all female offenders between the ages of 14-17 years of age who committed an eligible offense were contacted for potential participation (i.e., the drug offense cap was not used for females). In total, 67% of eligible youth agreed to participate. Youth who agreed to participate differed from youth who declined in prior arrests (2.1 vs. 1.5 for nonparticipants), age (13.9 years vs. 14.2 years for nonparticipants), and

were more likely to be White (25% vs. 20% for nonparticipants). Though statistically significant, the magnitudes of these differences were modest.

Baseline interviews were conducted at an average of 36.9 days (SD = 20.6) following the youth's adjudication (for youth in the juvenile justice system) or decertification hearing in Philadelphia, or adult arraignment in Phoenix (for youth in the adult system). Youth were between the ages of 14 and 18 at the baseline interview. Both youth and a collateral informant completed baseline interviews. Collateral informants were primarily parents (73%), although some youth had other very important adults or peers complete this interview. Youth completed 10 follow-up interviews during the subsequent seven years of the study. For the first three years of the study, interviews were conducted biannually; thereafter interviews occurred annually.

To be included in the current investigation, youth needed to have a parent acting as their collateral informant at baseline (73% were parent collaterals; 84% of parent collaterals were mothers). This is because parental expectations (a moderator in the present analyses) have robust associations with youth expectations, and using the expectations of other collaterals (e.g., significant other) would be theoretically different. The analytic sample was reduced to 989 youth. The present investigation was bolstered by the analytic sample's high response rates across the 10 waves of data, with 92.4% of youth completing at least 7/10 follow-up interviews. Youth varied in their time spent in the community versus a secure setting during follow-up periods, which was accounted for in the present analyses.

At baseline, the analytic sample was 15.96 years of age (SD = 1.13) on average (86.7% male). Participants were of lower socioeconomic status (74.1% low, 23.1% middle, 2.8% high), as characterized by the Hollingshead Index of Social Position (Hollingshead & Redlich, 1958). The racial composition of the sample was diverse: 38.1% Black, 34.4% Hispanic American,

23.6% White, and 3.9% other race. Socioeconomic status varied by racial group membership; White youth were of significantly higher socioeconomic status than Black and Hispanic youth, Black youth were significantly higher than Hispanic youth, and Hispanic youth were significantly lower than youth of other racial status. To account for the potentially confounding effect of race, all models were rerun with race included as a covariate.

On average, youth had 3.08 prior arrests (SD = 2.20) before the baseline interview, and the sample's mean age at first prior was 14.92 years (SD = 1.64). The analytic sample's most serious committing offense was as follows: person (40.1%), property (26.1%), weapons (10.0%), drug (15.5%), sex (3.6%), other (3.8%), dismissed (0.3%), and unknown (0.5%). Taken together, youth in the analytic sample had substantial involvement in the juvenile justice system and more than half had violent committing offenses before entering the Pathways study.

Youth included in the analytic sample differed from excluded youth on multiple domains: youth included in the analyses were younger at baseline, t (1352) = -4.49, p < .001, were more likely to be White than non-White  $\chi^2(1) = 25.10$ , p < .001, had fewer prior petitions, t (1352) = -2.09, p < .05, and possessed higher IQs t (1340) = 3.94, p < .001. The two groups did not differ by gender,  $\chi^2(1) = .18$ , p = .67, age at first petition, t (1352) = -.54, p = .59, or by socioeconomic status, t (575.192) = -1.06, p = .29.

#### 2.2 MEASURES

Variables were assessed at a variety of ages. Expectations for adult success were examined at age 18 years, socioeconomic status and all moderators of interest were assessed at the baseline interview, and all young adult outcomes were assessed at 21 years.

#### 2.2.1 Expectations for adult success.

Educational expectations at 18 years of age were assessed using a well-established item for educational expectations (e.g., Cernkovich & Giordano, 1992), in which adolescents were asked, "How far do you think you will go in school?" Answers ranged from "1" (Drop out before high school graduation) to "5" (Go to graduate or professional school). Expectations for occupational success and law-abiding conduct were assessed using self-report items adapted from the work of Menard and Elliott (1996). A mean of three items were used to assess expectations for occupational success ("What do you think your chances are to have a good job or career?;" "What do you think your chances are to earn a good living?;" "What do you think your chances are to provide a good home for your family?"), and had adequate internal consistency,  $\alpha_{\text{baseline}} =$ .84. Expectations for law-abiding conduct was assessed by one item, "What do you think your chances are to stay out of trouble with the law?" Responses for occupational and law-abiding conduct expectations ranged from "1" (poor) to "5" (excellent), with higher scores indicating greater perceived chances of success.

#### 2.2.2 Socioeconomic disadvantage.

Socioeconomic disadvantage was measured using Hollingshead's (1971) Two-Factor Index of Social Position. Parent-reported parental occupation and education were coded using a 7-point scale ranging from "1" (e.g., major professionals; professional degree) to "7" (e.g., unskilled employees; less than 7 years of school), with higher scores indicating *lower* occupational and educational attainment. Youth self-report of parental occupation and education supplemented missing parent-reported data. If information was given only on one variable (e.g., occupation), and not the other (e.g., education), the missing variable was imputed to equate the other known variable. Index of Social Position was calculated based on the formula, (Occupation score x 7) + (Education score x 4), with higher scores indicating more socioeconomic disadvantage. The average of the mother and father's index (if both data were available) was used to generate a parent index of social position. If data were only available for one parent, that parent's index was used to represent both parents' index of social position. 2.7% of youth did not have data regarding their mother's educational nor occupational status, and 25.2% of the sample did not have data regarding their father's educational or occupational status. Because a higher score on this measure indicated a *lower* index of social position, all figures and tables in this report used the term "socioeconomic disadvantage" (as opposed to "socioeconomic status") to represent this construct for ease of interpretation.

#### 2.2.3 Moderators of socioeconomic status on expectations.

Youth self-reported their gender as male or female (male = 1, female = 0).

Youth self-reported their race at baseline. Race was dummy coded into four categories: White, Black, Hispanic, or Other race. White youth served as the reference group.

Parental expectations were assessed at baseline using an adapted version of items from the youth assessment (see expectations for adult success), where parents (84.2% of parents were mothers; there were no mean-level differences in expectations between male and female parents) reported their expectations for their adolescent's success across educational (1 item; "How far do you think X will go in school?"), occupational (3 items; "What do you think X's chances are to have a good job or career?"; "What do you think X's chances are to earn a good living?"; "What do you think X's chances are to provide a good home for X's family?";  $\alpha = .93$ ), and law-abiding

conduct (1 item; "What do you think X's chances are to stay out of trouble with the law?") outcomes. For educational expectations, parents scored their responses from "1" (Drop out of high school before graduation) to "5" (Go to graduate or professional school). For occupational and law-abiding conduct expectations, parents scored their responses on a 5-point Likert from "poor" to excellent."

Bonding to teachers was assessed at baseline using the mean of 3 items from the Cernkovich and Giordano (1992) school bonding scales (e.g., "Most of my teachers treat me fairly"). Participants responded using a 5-point Likert scale ranging from "strongly disagree" to "strongly agree," with higher scores representing greater bonding to teachers ( $\alpha = .65$ ).

#### 2.2.4 Young adult outcomes.

All young adult outcomes were assessed at 21 years of age, which, given the accelerated cohort design of the investigation, was the highest age that all youth reached in the study.

Educational attainment was assessed on the basis of two academic milestones: if youth ever completed high school and ever attended college by the time they reached 21 years (both self-report). All educational outcome variables were binary, coded as "1" if youth had ever achieved that milestone, and "0" if youth did not achieve that milestone.

To assess time employed, youth reported the number of weeks during the past year that they were legally employed and/or employed "under the table." Youth reporting more number of weeks employed over the past year represented greater time employed.

Antisocial behavior was assessed by both self-report of antisocial behavior in past year, and the number of official sanctions in the past year. Self-reported antisocial behavior was assessed using the 24-item Self-Reported Offending scale (Huizinga, Esbensen, & Weiher, 1991). Youth reported on whether or not they had engaged in each delinquent behavior in the past year (e.g., selling illegal drugs, trying to steal a motor vehicle, assault). Given the relatively low levels of offending, a binary variable was calculated for analyses, such that a "1" indicated that the youth engaged in at least one antisocial act during the past year, and a "0" indicated that the youth engaged in no antisocial activity during the past year. Official *sanctions* were assessed using official FBI record information. A binary outcome variable was calculated for analyses such that a "1" indicated that youth had at least one official arrest during the past year, and a "0" indicated that youth had no official arrests in the past year.

#### 2.2.5 Control variables.

Given that many variables of interest come from the baseline interview, and that youth began the study at different ages, analyses controlled for age at baseline. Youth self-reported their birthdate at baseline, and their age was derived by subtracting their birthdate from the test date, with a range of 14-18 years.

To control for relevant cognitive factors that may contribute to adolescent expectations and young adult outcomes, *intellectual ability* and *academic achievement* were assessed. *Intellectual ability* was assessed at baseline with the brief Wechsler Abbreviated Scale of Intelligence (Wechsler, 1999). Participants' raw scores on the verbal and matrix reasoning subtests were summed to create an IQ score. This intelligence assessment has been normed in samples ranging from 6 to 89 years of age. *Academic achievement* was assessed at 17 years by one self-report item that asked, "What were your grades like in school?" Youth responded on an 8-point scale ranging from "Mostly below D's" to "Mostly A's." To account for youth's time spent in a secure setting (e.g., detention facility) as opposed to being in the community at 18 years (for aims 2 and 3) and 21 years (for aim 3), analyses used a proportion score calculated by the number of days youth spent in a restricted setting (versus the community) divided by the number of days in the recall period. Proportion scores were averaged across two assessments for youth who were 18 or 21 years of age at two time periods (i.e., when the assessments were 6 months apart versus 12 months apart). However, if participants were 18 years at baseline, I did not have information regarding their time spent in a secure setting, and thus I set their time spent in a secure setting to 0 days, which is a method consistent with other work using this sample (e.g., Monahan et al., 2013).

#### 2.3 PLAN OF ANALYSES

#### 2.3.1 Preliminary analyses.

Before carrying out the proposed analytic plan, preliminary analyses were conducted to assist in the interpretation of the full results. First, to examine if expectations for adult success were a stable construct across adolescence and early adulthood, the correlations between youth's expectations were examined within each domain (i.e., educational, occupational, and law expectations) across ages 14 to 21 years. Next, to determine if youth's expectations of themselves were congruent with others' expectations for them, the correlations between youth's and parental expectations were examined within each domain. Finally, given that the majority of the sample was socioeconomically disadvantaged, both linear and quadratic associations between socioeconomic disadvantage and future expectations were assessed.

# 2.3.2 Aim 1. Identify latent profiles of high-risk adolescents' future expectations across educational, occupational, and law domains.

Latent profile analysis using MPlus version 6.0 (Muthén & Muthén, 2011) was used to identify groups of individuals who exhibited similar patterns of future expectations. Missing data, ranging from 0% to 19.8% on any given variable, were addressed using MPlus' full information maximum likelihood estimation method (FIML). Analyses relied on multiple tests to ensure that latent profiles were robust. First, analyses examined if the best loglikelihood value was replicated in the solution to ensure it was trustworthy. Second, the Lo-Mendell-Rubin Adjusted Likelihood Ratio Test (LMR-LRT; Lo, Mendell, & Rubin, 2001), assessed whether the model with k classes provided significantly better fit than the model with k-1 classes. If the LMR-LRT was not significant, the model with k-1 fewer latent classes was given greater consideration. Third, analyses used conventional fit indices, Akaike's Information Criterion (AIC) and Bayesian's Information Criterion (BIC), in which lower values indicated a better class solution than a solution with more or less classes. Finally, model entropy and posterior probabilities of latent class assignment were used as indicators of the degree to which participants were cleanly separable into distinct classes. Values for entropy and posterior probabilities of latent class membership range from 0 to 1, with higher values indicating more accurate classification of individuals. In general, values over .70 are considered acceptable and values over .90 are considered excellent with respect to class separation (Clark & Muthén, 2009).

# **2.3.3** Aim 2. Examine how socioeconomic status, demographic characteristics, and social factors relate to adolescents' future expectations.

Although the initial analytic plan was to examine the second aim using *both* person-centered (i.e., using latent profiles of expectations) and variable-centered analyses (i.e., examining each domain of expectations separately), I did not find an acceptable latent profile solution. As such, aims 2 and 3 were examined using a variable-centered approach only.

To examine the relation between socioeconomic status and expectations, the proposed covariates (i.e., age at baseline, cognitive functioning at baseline, time incarcerated at 18 years) and socioeconomic status were entered to predict each domain of expectations. Then, models examined how the four moderators of interest (i.e., gender, race, parental expectations, bonding to teachers) impacted the relation between socioeconomic status and future expectations, with the main effect of the moderating variable on expectations being examined first. Given that gender and race were categorical, multiple group analysis was used to examine if the impacts of socioeconomic status on expectations varied by these demographic characteristics. For continuous moderators (i.e., parental expectations and bonding to teachers), the main effect and the interaction term between the moderating variable and socioeconomic status was entered.

# 2.3.4 Aim 3. Test if future expectations mediate the association between socioeconomic status and adult outcomes.

Each expectation domain was examined separately (e.g., educational expectations) as a mediator of socioeconomic disadvantage and the respective young adult outcome (e.g., educational attainment). These analyses controlled for age at baseline, cognitive abilities, and time spent in the community at 18 (for the pathway from socioeconomic disadvantage to expectations) and 21 years of age (for the pathway from socioeconomic disadvantage to young adult outcomes). Mediation analyses with binary outcomes (i.e., educational and law) used a robust weighted least squares estimator (WLSMV) and theta parameterization, while analyses with continuous outcomes (i.e., occupational) used a maximum likelihood estimator.

#### 2.3.5 Supplemental analyses for aims 2 and 3.

Preliminary analyses revealed that socioeconomic status varied by race. As such, all moderation and mediation models were rerun with race included as a covariate (i.e., for both aims 2 and 3). Furthermore, because study inclusion criteria differed for males and females, all analyses were rerun with gender as a covariate, and following those analyses, rerun using a matched sample of females and males (n = 258; matched on age at baseline, race, and socioeconomic status). Although males and females were matched on these demographic characteristics, males were still significantly more antisocial than females (e.g., males had an earlier age of first offense, and committed more antisocial acts than females).
### 3.0 **RESULTS**

Descriptive statistics and correlations between key variables are presented in Table 1.

## 3.1 PRELIMINARY ANALYSES RESULTS

As shown in Tables 2-4, expectations for each domain were moderately stable throughout the study, suggesting that youth's expectations for success were moving targets as youth progressed through adolescence to early adulthood. Parental expectations at baseline were low to moderately correlated with youth's expectations at 18 years, indicating these were not highly overlapping constructs: educational occupations: r = .22 (p < .001), occupational expectations: r = .06 (p = .054), law expectations: r = .11 (p = .001). Finally, after controlling for demographic characteristics (e.g., age at baseline, gender, race, cognitive abilities) socioeconomic disadvantage was linearly, not quadratically, associated with expectations in all domains. As such, all analyses used a linear socioeconomic disadvantage term.

	M (SD) or																						
	%	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1. HS/GED	56.5%																						
(21 years)	Yes	-	.26	.08	.05	.00	.33	.13	.00	.20	.09	.06	.19	.03	16	12	07	00	.02	30	18	02	04
2. College Attendance	13.2%																						
(21 years)	Attended	-	-	.18	.00	.03	.26	.18	.08	.16	.07	.07	.09	.03	16	05	03	04	.01	22	19	.16	.12
<ol><li>Employment</li></ol>	18.79																						
(21 years)	(19.75)	-	-	-	.08	.13	.15	.15	.16	.04	.09	.18	.03	.03	08	04	06	07	.06	17	02	.51	.23
4. Self-Reported Offending	44.0%																						
(21 years)	Offended	-	-	-	-	.22	.00	.05	.16	.08	.13	.07	.00	.02	.04	.03	.09	.09	.03	07	.01	13	05
<ol><li>Official Sanctions</li></ol>	29.1%																						
(21 years)	Offended	-	-	-	-	-	.02	.06	.03	.03	.12	.02	.04	.05	.05	.05	.11	.01	.05	.06	03	03	04
<ol><li>Educational Expectations</li></ol>	3.13																						
(18 years)	(1.06)	-	-	-	-	-	-	.34	.16	.19	.05	.07	.17	.09	22	12	05	04	03	19	20	.09	.07
7. Occupational Expectations	3.80																						
(18 years)	(0.93)	-	-	-	-	-	-	-	.47	.15	.11	.01	.12	.02	11	06	07	14	.09	09	11	.18	.16
8. Law Expectations	3.87									0.4	20	10	01	07		02		15	00	00	01	20	12
(18 years)	(1.16)	-	-	-	-	-	-	-	-	.04	.20	.10	.01	05	11	02	11	17	.09	00	01	.20	.13
9. Socioeconomic	(11.02)										06	10	25	07	16	12	02	08	02	27	16	07	14
(Baseline)	(11.92)	-	-	-	-	-	-	-	-	-	.00	.10	.55	.07	.10	.12	.05	00	.05	•21	.10	07	14
10 Male (vs. Female)	86 7%																						
	Male	-	-	-	-	-	-	_	-	-	-	.03	.07	.03	.08	.00	.00	.09	.00	.03	.00	26	19
11. Black (vs. Not)	38.1%																						
	Black	-	-	-	-	-	-	-	-	-	-	-	.57	.16	.00	13	07	.04	01	.25	08	09	12
12. Hispanic (vs. Not)	34.4%																						
	Hispanic	-	-	-	-	-	-	-	-	-	-	-	-	.15	.03	.11	.05	06	00	.05	.10	04	04
13. Other (vs. Not)	3.9%																						
	Other	-	-	-	-	-	-	-	-	-	-	-	-	-	04	03	05	.06	03	06	.04	.04	.03
14. Parents' Educational	2.71																						
Expectations	(1.10)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	38	09	02	19	17	.10	.13
(Baseline)	2.20																						
15. Parents Occupational	3.38																50	11	01	00	00	04	07
(Baseline)	(1.00)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	11	.01	09	09	.04	.07
16 Parents' Law	3 21																						
Expectations	(1.17)	-	_	_	_	-	_	-	-	_	_	_	-	_	_	-	_	14	03	08	08	06	06
(Baseline)	(1.17)																	14	05	00	00	.00	.00
17. Bonding to Teachers	3.37																						
(Baseline)	(0.83)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.05	15	.05	.04
18. Age	15.96																						
(Baseline)	(1.13)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	01	.01	05	12
19. IQ	85.37																						
(Baseline)	(13.03)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	03	.13	.17
20. Grades	5.36																						
(17 years)	(2.44)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.07	.11
21. Time Incarcerated	0.31																						
(18 years)	(0.40)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42
22. Time Incarcerated	0.27																						
(21 years)	(0.38)	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
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## Table 1. Descriptive statistics and correlations of model variables

*Note*. HS/GED = High school/GED completion by 21 years. Bolded text indicates a significant correlation, p < .05.

	M(SD)	1	2	3	4	5	6	7	8	
1. Educational Expectations (14 years)	3.38 (1.13)		.54	.45	.44	.42	.30	.33	.23	
<ol> <li>Educational Expectations         <ul> <li>(15 years)</li> </ul> </li> </ol>	3.07 (1.12)			.52	.43	.46	.40	.37	.33	
<ol> <li>Educational Expectations (16 years)</li> </ol>	3.05 (1.08)				.55	.42	.37	.38	.33	
<ol> <li>Educational Expectations (17 years)</li> </ol>	3.07 (1.09)					.55	.49	.41	.38	
5. Educational Expectations (18 years)	3.13 (1.06)						.54	.50	.44	
<ol> <li>Educational Expectations (19 years)</li> </ol>	3.13 (1.06)							.52	.46	
7. Educational Expectations (20 years)	3.12 (1.05)								.58	
<ol> <li>8. Educational Expectations (21 years)</li> </ol>	3.11 (1.05)									

Table 2. Correlations between educational expectations across adolescence and early adulthood

Note. Bolded text indicates a significant correlation.

	M(SD)	l	2	3	4	5	6	7	8
1. Occupational Expectations (14 years)	3.77 (0.80)		.46	.25	.32	.21	.18	.21	.25
<ol> <li>Occupational Expectations (15 years)</li> </ol>	3.58 (0.91)			.51	.39	.36	.32	.30	.23
<ol> <li>Occupational Expectations (16 years)</li> </ol>	3.68 (0.93)				.53	.45	.45	.38	.30
<ol> <li>Occupational Expectations (17 years)</li> </ol>	3.72 (0.95)					.52	.44	.44	.38
5. Occupational Expectations (18 years)	3.80 (0.93)						.51	.49	.43
<ol> <li>Occupational Expectations (19 years)</li> </ol>	3.83 (0.95)							.57	.46
7. Occupational Expectations (20 years)	3.89 (0.95)								.53
<ol> <li>Occupational Expectations (21 years)</li> </ol>	3.91 (0.96)								

Table 3. Correlations between occupational expectations across adolescence and early adulthood

Note. Bolded text indicates a significant correlation.

	M(SD)	1	2	3	4	5	6	7	8
<ol> <li>Law Expectations (14 years)</li> </ol>	3.79 (1.25)		.24	.26	.12	.23	.21	.22	.20
2. Law Expectations (15 years)	3.65 (1.22)			.36	.30	.14	.18	.18	.21
<ol> <li>Law Expectations (16 years)</li> </ol>	3.75 (1.22)				.42	.34	.28	.26	.25
<ol> <li>Law Expectations (17 years)</li> </ol>	3.72 (1.18)					.41	.36	.41	.31
5. Law Expectations (18 years)	3.87 (1.16)						.34	.33	.36
<ol> <li>Law Expectations (19 years)</li> </ol>	3.89 (1.15)							.46	.41
<ol> <li>Law Expectations (20 years)</li> </ol>	3.91 (1.17)								.42
8. Law Expectations (21 years)	3.88 (1.17)								

Table 4. Correlations between law expectations across adolescence and early adulthood

Note. Bolded text indicates a significant correlation.

# 3.2 AIM 1. IDENTIFY LATENT PROFILES OF HIGH-RISK ADOLESCENTS' FUTURE EXPECTATIONS ACROSS EDUCATIONAL, OCCUPATIONAL, AND LAW DOMAINS

Latent profile analysis was used to test if there were different profiles of future expectations (see Figure 2, Tables 5-6 for detailed results). A 4-profile solution was selected initially based on the robustness of the solution to multiple tests, but was subsequently dropped after further evaluation. Specifically, the best log likelihood value of the 5-profile, 6-profile, and 7-profile solution could not be replicated even after increasing the number of random starts to 1 million, which brought the trustworthiness of the 4-profile solution into question. Moreover, there were no mean-level differences across the four profiles in predictors or outcomes. In sum, the profile solution could not be trusted statistically, and the derived profiles were not particularly useful in understanding how expectations operate. As such, the study continued with the variable-centered analyses and interpreted only those results in the final discussion.



Figure 2. Profiles of future expectation at 18 years of age (N = 989). All future expectation variables were

mean-centered.

Model	LMR-LRT	AIC	BIC	Entropy
2-Group	457.17 ( <i>p</i> < .001)	8239.314	8288.281	0.841
3-Group	112.39 ( <i>p</i> < .001)	8130.850	8199.404	0.854
4-Group	124.72 ( $p < .001$ )	8051.009	8139.149	0.798
5-Group	839.77 ( <i>p</i> = .45)	6485.591	6593.318	0.999
6-Group	$2008.40 \ (p = .15)$	5863.429	5990.743	0.999
7-Group	2158.34 (p = .22)	5714.875	5861.776	1.000

**Table 5.** Latent profile analysis results

*Note*. Bolded text indicates that the 4-group solution was selected. BIC = Bayesian's Information

Criterion, AIC = Akaike's Information Criterion, LMR-LRT = Lo-Mendell-Rubin Likelihood

Ratio Test.

Group number	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
2-group solution							
1	0.965	0.035					
2	0.043	0.957					
3-group solution							
1	0.885	0.023	0.092				
2	0.027	0.973	0.000				
3	0.059	0.000	0.941				
4-group solution							
1	0.848	0.011	0.116	0.024			
2	0.009	0.870	0.027	0.094			
3	0.083	0.031	0.885	0.000			
4	0.020	0.063	0.000	0.917			
5-group solution							
1	0.999	0.001	0.000	0.000	0.000		
2	0.001	0.997	0.002	0.000	0.000		
3	0.000	0.002	0.997	0.001	0.000		
4	0.000	0.000	0.001	0.999	0.000		
5	0.000	0.000	0.000	0.012	0.988		
6-group solution							
1	1.000	0.000	0.000	0.000	0.000	0.000	
2	0.000	0.999	0.000	0.000	0.000	0.000	
3	0.000	0.000	1.000	0.000	0.000	0.000	
4	0.000	0.000	0.000	1.000	0.000	0.000	
5	0.000	0.000	0.001	0.000	1.000	0.000	
6	0.000	0.000	0.001	0.000	0.001	0.999	
7-group solution							
1	1.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.000	0.999	0.000	0.000	0.000	0.000	0.000
3	0.001	0.000	1.000	0.000	0.000	0.000	0.000
4	0.000	0.000	0.000	1.000	0.000	0.000	0.000
5	0.000	0.013	0.000	0.000	1.000	0.000	0.000
6	0.000	0.000	0.000	0.000	0.000	0.982	0.005
7	0.000	0.001	0.000	0.000	0.000	0.000	1.000

Table 6. Average latent class probabilities for latent class membership

*Note*. Bolded text indicates posterior probabilities of the selected latent profile solution. Values on the diagonal axes indicate how well individuals were matched to their respective profile, with a value of 1 being a perfect match.

# 3.3 AIM 2. EXAMINE HOW SOCIOECONOMIC STATUS, DEMOGRAPHIC CHARACTERISTIC, AND SOCIAL FACTORS ARE RELATED TO ADOLESCENTS' FUTURE EXPECTATIONS

All variable-centered analyses for aims 2 and 3 were conducted in three stages. First, I used the full analytic sample (N = 989) and included only the proposed covariates. Second, I reran the models with race and gender included as additional covariates. Finally, I reran the models using the matched sample of males and females (N = 258).

#### **3.3.1** Educational expectations.

Figures 3-9 present the relations between socioeconomic disadvantage, educational expectations, and moderating variables of interest among the full analytic sample. Socioeconomic disadvantage was negatively associated with educational expectations (see Figure 3). Gender was not related to educational expectations (see Figure 4), and multiple group analysis showed that males and females were similarly vulnerable to the impacts of socioeconomic disadvantage on educational expectations, as indicated by a non-significant chi-square difference test when the path from socioeconomic disadvantage to educational expectations was allowed to vary across genders (versus set to equality; see Table 7). Only youth of other race status reported significantly different (higher) levels of educational expectations in comparison to White youth (see Figure 5). Although Hispanic youth did not differ significantly from White youth in their level of educational expectations, multiple group analysis revealed that Hispanic youth were more vulnerable to the impacts of socioeconomic disadvantage on educational expectations than all other youth (see Figure 6), as supported by a significant chi-square difference test when the

path from socioeconomic disadvantage to educational expectations was allowed to vary across racial groups (see Table 8).

Parental educational expectations (even when parental educational expectations and socioeconomic disadvantage were allowed to correlate) were positively associated with youth's educational expectations (see Figures 7-8). However, parental educational expectations were not protective against socioeconomic disadvantage. Bonding to teachers was not associated with educational expectations, nor was it protective against socioeconomic disadvantage (see Figure 9). The strength of the relations across all educational expectation analyses remained the same when including gender and race as covariates.

Although the pathway from socioeconomic disadvantage to educational expectations was a significant negative association in the full analytic sample, this path became non-significant in the matched sample. There were no gender differences or racial differences in educational expectations. Furthermore, the path from socioeconomic disadvantage to educational expectations did not vary by gender or race. Like the full analytic sample analyses, parental educational expectations were positively associated with youth educational expectations, but these parental beliefs were not protective against socioeconomic disadvantage. In line with the full analytic sample, there was not a main effect of bonding to teachers on educational expectations, nor a protective effect against socioeconomic disadvantage's impacts on educational expectations.

### **3.3.2** Occupational expectations.

Figures 10-16 present the relations between socioeconomic disadvantage, occupational expectations, and moderating variables of interest. Socioeconomic disadvantage was negatively

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associated with occupational expectations (see Figure 10). Males reported lower occupational expectations than females (see Figure 11). Multiple group analyses showed that males and females did not differ in their vulnerability to the impacts of socioeconomic disadvantage on occupational expectations, as indicated by a non-significant chi-square difference test when this path was allowed to vary across genders (versus set to equality; see Table 9). Hispanic youth reported lower occupational expectations than White youth (see Figure 12). Multiple group analysis showed that Hispanic youth's occupational expectations were more impacted by socioeconomic disadvantage than all other youth (see Figure 13), as supported by a significant chi-square difference test when this path was allowed to vary across racial groups (see Table 10).

Parental occupational expectations were not related to youth occupational expectations or protective against socioeconomic disadvantage (see Figures 14-15). Bonding to teachers was positively associated with occupational expectations, though not protective against socioeconomic disadvantage (see Figure 16). The strength of the relations across all occupational expectation analyses remained the same when including gender and race as covariates.

Socioeconomic disadvantage was no longer associated with occupational expectations in the matched sample. In this reduced sample, male status was associated with lower occupational expectations at a trend level, and neither gender was more susceptible to the impacts of socioeconomic disadvantage on occupational expectations. No mean-level differences in occupational expectations or moderation by race on the association between socioeconomic disadvantage and occupational expectations were found in the matched sample. Similar to the full analytic sample analyses, parental occupational expectations were not related to youth's occupational expectations, nor were they protective against socioeconomic disadvantage. Bonding to teachers remained significantly related to youth's occupational expectations, and was not protective against socioeconomic disadvantage.

### **3.3.3** Law expectations.

Figures 17-22 present the relations between socioeconomic disadvantage, law expectations, and moderating variables of interest. Socioeconomic disadvantage was not associated with law expectations (see Figure 17). Gender was related to educational expectations, such that males reported significantly lower occupational expectations than females (see Figure 18). Multiple group analyses showed the relation between socioeconomic disadvantage and law expectations did not vary by gender, as revealed by a non-significant chi-square difference test when this path was allowed to vary across genders (versus set to equality; see Table 11). Black youth reported lower law expectations in comparison to White youth (see Figure 19). However, multiple group analysis showed there were no race differences in the relation from socioeconomic disadvantage to law expectations as indicated by a non-significant significant chi-square difference test when the path was allowed to vary across racial groups (see Table 12). Parental law expectations (see Figures 20-21) and bonding to teachers (see Figure 22) were positively associated with law expectations, but neither was protective against socioeconomic disadvantage. The strength of the relations across all law expectation analyses remained the same when controlling for gender and race.

Similar to full analytic sample analyses, socioeconomic disadvantage was not associated with law expectations in the matched analytic sample. In the same way, males and Black youth reported significantly lower law expectations in comparison to females and White youth, respectively. Matched sample analyses did not find the path from socioeconomic disadvantage to law expectations to vary across gender nor race. The positive main effects of parental law expectations and bonding to teachers on law expectations held in the matched sample analyses, but there were no protective effects.

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Model	$\chi^2$	Р	df	$\chi^2$ difference test, P
1	243.21	<.001	37	
2	242.73	< .001	36	$\chi^2(1) = 0.48, p = .49$

# Table 7. Multiple group analysis: Gender and educational expectations

Note. Model 1 constrained all pathways to equality. Model 2 allowed the pathway from

socioeconomic status to expectations to be free across genders.

Model	$\chi^2$	Р	df	$\chi^2$ difference test, P
1	519.59	<.001	91	
2	510.14	<.001	88	$\chi^2(3) = 9.45, p = .02$

Table 8. Multiple group analysis: Race and educational expectations

Note. Model 1 constrained all pathways to equality. Model 2 allowed the pathway from

socioeconomic status to expectations to be free across races.

Model	$\chi^2$	Р	df	$\chi^2$ difference test, P
1	249.70	<.001	37	
2	249.50	< .001	36	$\chi^2(1) = 0.20, p = 0.65$

Table 9. Multiple group analysis: Gender and occupational expectations

Note. Model 1 constrained all pathways to equality. Model 2 allowed the pathway from

socioeconomic status to expectations to be free across genders.

Model	$\chi^2$	Р	df	$\chi^2$ difference test, P
1	504.81	<.001	91	
2	496.77	< .001	88	$\chi^2(3) = 8.04, p = .045$

Table 10. Multiple group analysis: Race and occupational expectations

Note. Model 1 constrained all pathways to equality. Model 2 allowed the pathway from

socioeconomic status to expectations to be free across races.

Model	$\chi^2$	Р	df	$\chi^2$ difference test, P
1	291.25	<.001	37	
2	290.49	<.001	36	$\chi^2(1) = .76, p = .38$

Table 11. Multiple group analysis: Gender and law expectations

Note. Model 1 constrained all pathways to equality. Model 2 allowed the pathway from

socioeconomic status to expectations to be free across genders.

Model	$\chi^2$	Р	df	$\chi^2$ difference test, P
1	514.21	<.001	91	
2	510.45	< .001	88	$\chi^2(3) = 3.76, p = .29$

 Table 12. Multiple group analysis: Race and law expectations

Note. Model 1 constrained all pathways to equality. Model 2 allowed the pathway from

socioeconomic status to expectations to be free across races.



Figure 3. Main effect of socioeconomic disadvantage on educational expectations. Exp = educational expectations.



Figure 4. Main effect of male (vs. female) on educational expectations. Exp = educational expectations.



Figure 5. Main effect of race (vs. White) on educational expectations. Exp = educational expectations.



**Figure 6.** Multiple group analysis by race. Model allowed the path from socioeconomic status to educational expectations to be free. Exp = educational expectations; W = White; B = Black; H = Hispanic; O = Other race.



Figure 7. Parental educational expectations as a moderator of socioeconomic disadvantage and educational

expectations. Exp = educational expectations.

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



Figure 8. Parental educational expectations as a moderator of socioeconomic disadvantage and educational

expectations. Parental educational expectations and socioeconomic disadvantage were allowed to correlate. Exp =

educational expectations.



Figure 9. Bonding to teachers as a moderator of socioeconomic disadvantage and educational expectations. Exp =

educational expectations.



Figure 10. Main effect of socioeconomic disadvantage on occupational expectations. Exp = occupational

expectations.



Figure 11. Main effect of male (vs. female) on occupational expectations. Exp = occupational expectations.



Figure 12. Main effect of race (vs. white) on occupational expectations. Exp = occupational expectations.



Figure 13. Multiple group analysis by race. Model allowed the path from socioeconomic status to occupational expectations to be free. Exp = occupational expectations; W = White; B = Black; H = Hispanic; O = Other race.



Figure 14. Parental occupational expectations as a moderator of socioeconomic disadvantage and occupational

expectations. Exp = occupational expectations.



Figure 15. Parental occupational expectations as a moderator of socioeconomic disadvantage and occupational

expectations. Parental occupational expectations and socioeconomic disadvantage were allowed to correlate. Exp =

occupational expectations.



Figure 16. Bonding to teachers as a moderator of socioeconomic disadvantage and occupational expectations. Exp =

occupational expectations.







Figure 18. Main effect of male (vs. female) on law expectations. Exp = law expectations.



Figure 19. Main effect of race (vs. white) on law expectations. Exp = law expectations.


Figure 20. Parental law expectations as a moderator of socioeconomic disadvantage and law expectations. Exp =

law expectations.



Figure 21. Parental law expectations as a moderator of socioeconomic disadvantage and law expectations. Parental

law expectations and socioeconomic disadvantage were allowed to correlate. Exp = law expectations.



Figure 22. Bonding to teachers as a moderator of socioeconomic disadvantage and law expectations. Exp = law

expectations.

# 3.4 AIM 3. TEST IF FUTURE EXPECTATIONS MEDIATE THE ASSOCIATION BETWEEN SOCIOECONOMIC STATUS AND ADULT OUTCOMES

### **3.4.1** Educational expectations.

Figures 3, 23, and 24 depict analyses that examined educational expectations as a mediator of socioeconomic disadvantage and young adult educational attainment. Recall from previous analyses that socioeconomic disadvantage was negatively associated with educational expectations (see Figure 3). Similarly, socioeconomic disadvantage was negatively associated with high school/GED completion and college attendance, and educational expectations were positively associated with both educational outcomes (see Figure 23). As depicted in Figure 24, educational expectations partially mediated the association between socioeconomic disadvantage and high school/GED completion (total standardized indirect effects = -.06, p < .001), as well as the relation between socioeconomic disadvantage and college attendance (total standardized indirect effects = -.06, p < .001). These indirect effects remained significant after controlling for gender and race.

Youth educational expectations were predictive of young adult educational outcomes, but socioeconomic status was not predictive of expectations or outcomes. As such, there was no evidence for mediation in the matched analytic sample.

# **3.4.2** Occupational expectations.

Figures 10, 25, and 26 depict analyses that examined occupational expectations as a mediator of socioeconomic disadvantage and employment in young adulthood. Remember that previous analyses established a negative association between socioeconomic disadvantage and occupational expectations in the full analytic sample (see Figure 10). Conversely, socioeconomic disadvantage and occupational expectations were not predictive of employment in young adulthood (see Figure 25). Not surprisingly, the total standardized indirect effect of the pathway from socioeconomic status to young adult employment was non-significant: .02, p = .63 (see Figure 26). These non-significant findings were replicated when gender and race were included as covariates.

Socioeconomic disadvantage was not related to occupational expectations or employment in young adulthood. As such, there was no evidence that youth's occupational expectations mediated the relation between socioeconomic disadvantage and young adult employment.

#### 3.4.3 Law expectations.

Figures 17, 27, and 28 depict analyses that examined law expectations as a mediator of socioeconomic disadvantage and self- and official-report of offending in young adulthood. Recall that socioeconomic disadvantage was not associated with youth's expectations for staying out of trouble with the law (see Figure 17). Conversely, socioeconomic disadvantage was associated with self-, but not official-report of offending, such that greater socioeconomic disadvantage was associated with lower rates of offending in young adulthood (see Figure 27). Expectations for staying out of trouble with the law were associated with self-reported, but not official records of offending, such that higher expectations were associated with a lower

likelihood of offending in young adulthood. Law expectations remained a significant predictor of self-reported offending when gender and race were controlled for. Intuitively, the total standardized indirect effects of socioeconomic status to offending outcomes were non-significant for self-report of offending: .01, p = .24, nor official-report of offending: .002, p = .47 (see Figure 28). These non-significant indirect effects were replicated when included gender and race as covariates.

The only path that remained significant in the matched analytic sample was the path from law expectations to self-reported offending. All other paths were non-significant, and thus there was no evidence for law expectations as a mediator of socioeconomic disadvantage and offending behavior.



Figure 23. Main effect of socioeconomic disadvantage on high school/GED completion and college attendance. HS

= high school/GED completion; Col = college attendance.



**Figure 24.** Educational expectations as a mediator of socioeconomic disadvantage and high school completion and college attendance. Exp = educational expectations; HS = high school/GED completion; Col = college attendance.



Figure 25. Main effect of socioeconomic disadvantage on employment. Emp = employment.



Figure 26. Occupational expectations as a mediator of socioeconomic disadvantage and employment. Exp =

occupational expectations; Emp = employment.



Figure 27. Main effect of socioeconomic disadvantage on self-reported offending and official sanctions. SRO =

self-reported offending; Off = official sanctions.

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



Figure 28. Law expectations as a mediator of socioeconomic disadvantage and self-reported offending and official

sanctions. Exp = law expectations; SRO = self-reported offending; Off = official sanctions.

#### 4.0 DISCUSSION

Although substantial progress has been made in understanding how adolescent expectations for adulthood operate among typically developing youth, less is known about how these future beliefs are shaped and function among high-risk youth, such as adolescents involved in the juvenile justice system. The present study reveals important information about young offenders' future expectations at the transition to adulthood. First, socioeconomic disadvantage does not appear to be a robust predictor of adolescent future expectations. Second, males and ethnic minority youth are at greater risk for having low expectations for adult success, which maps onto previous studies that identify these demographic characteristics, especially in disadvantaged contexts, as risk factors for poor adjustment (Mello & Swanson, 2007; Smith, 1983). Third, parental expectations and bonding to teachers are positively associated with young offenders' future expectations, although these relations vary by the domain of expectations. Finally, adolescents' future expectations at this transitory period are meaningful psychological markers of prospective young adult functioning in the domains of education and law. Taken cumulatively, as suggested by resilience frameworks that highlight the importance of developmental transitions, future expectations at the transition to adulthood are important psychological markers for prospective resilience, and bolstering parents' expectations and teacher-adolescent relationships may be fruitful for facilitating positive transitions to adulthood.

# 4.1 PREDICTORS OF YOUNG OFFENDERS' EXPECTATIONS FOR ADULTHOOD

#### 4.1.1 Socioeconomic status.

The present analyses find weak evidence for the relation between socioeconomic status and expectations. In particular, greater disadvantage is related to lower educational and occupational expectations in the full sample (N = 989), but these effects become non-significant in the matched sample (N = 258). It is likely that this non-significant finding may be due to lower variability in socioeconomic status in the reduced, more homogeneous sample. To probe this explanation, I examined the mean and standard deviation of socioeconomic status in each sample and used a Levene's test to examine if the variances were significantly different. Indeed, there was a marginally significant difference in the variance in socioeconomic status between the two samples (full sample: M = 51.18 (SD = 11.92), matched sample: M = 50.40 (SD = 10.79)), F (1, 1246) = 3.56, p = .059. Additionally, it is also important to consider that the distributions of socioeconomic status in *both* samples are relatively narrow. The means for both samples fall within the range of low socioeconomic status (low socioeconomic status = 44-77; Hollingshead & Redlich, 1958), and even a socioeconomic status score that is a standard deviation below each mean promotes youth to only the tail end of middle socioeconomic status.

Although it is possible that socioeconomic factors may be associated with educational and occupational expectations in more heterogeneous samples, results in the law domain give reason to believe that law expectations may be less impacted by economic factors among highrisk adolescents. In particular, even in the full analytic sample, socioeconomic status was not associated with youth's expectations for staying out of trouble with the law, nor was it associated with parents' law expectations for their adolescents (recall that socioeconomic status *was* related to parents' educational and occupational expectations in the full analytic sample). One potential reason for this non-finding may be that because these youth have extensive involvement in the juvenile justice system, other factors, such as prior arrests, may be more salient in shaping both youths' and parents' expectations for future law-abiding conduct. Indeed, the number of arrests prior to the baseline interview was significantly associated with both youth's law expectations (r= -.07, p = .05) and parents' law expectations (r = -.16, p < .001). Past antisocial behavior and juvenile justice involvement, rather than socioeconomic status, may hold the most weight in shaping future expectations for law-abiding conduct.

# 4.1.2 Gender.

While it was expected that males would be more susceptible to the detrimental impacts of low socioeconomic status, the present analyses find a main effect of gender that is robust to both the full and matched analytic sample for only law expectations. Given that males were a qualitatively different sample than females (males committed more severe crimes than females, even in the matched sample), it is intuitive that males would have lower expectations for staying out of trouble with the law. However, it is interesting to note the gender differences in future expectations that did *not* appear. Specifically, there was not robust evidence that males and female offenders differed in occupational expectations (a difference only emerged in the full, but not the matched analytic sample) and no evidence that males and female offenders differed in educational expectations (no differences in either samples). A potential reason that there were no

differences in these expectation domains may be because males and females who are involved in the justice system (albeit at differing levels of severity in this sample) possess more similar risk factors for poor educational and occupational success than males and females more generally. Indeed, in the matched sample, males and females did not differ significantly in IQ or grades at baseline. Given that these variables are tightly linked to educational and occupational success in normative populations (e.g., Caspi et al., 1998), it makes sense that young offenders similar in these characteristics would report comparable expectations for educational and occupational attainment. However, future investigations should examine if this finding holds in a sample of male and female offenders with more comparable offense characteristics.

### 4.1.3 Race.

A particularly striking finding in the full analytic sample is that Hispanic youth appear to be especially sensitive to the impacts of socioeconomic disadvantage on both educational and occupational expectations. A set of barriers to successful adult adjustment that may be unique to Hispanic offenders could stem from their immigrant status. Studies have found that immigrant Hispanic youth are less likely than their White peers to pursue higher education (National Center for Education Statistics, 2009), with potential barriers being a lack of financial resources (Salinas & Llanes, 2003) and limited English proficiency (Guglielmi, 2008). Furthermore, economists suggest that immigrants' success in the labor market varies as a function of their proficiency to speak the native language (e.g., McManus, Gould, & Welch, 1983). Although the finding that Hispanic youth were more vulnerable to socioeconomic hardship became non-significant in the matched sample, it is important to note that the number of non-native Hispanic youth went from

58 youth in the full analytic sample to 12 youth in the matched sample, and this may have limited the power to detect this effect.

Although it was expected that all ethnic minority status youth would be at greater risk than their White peers for a poor future outlook, this was the case for Black youth only in the domain of law expectations. In particular, Black youth reported lower expectations for staying out of trouble with the law in comparison to White youth. I examined if Black youth were more antisocial than White youth, and follow-up analyses revealed that Black youth were *less* antisocial than White youth six months prior to the baseline interview t (420.48) = 2.71, p < .01, and *less* antisocial at 21 years of age, t (379.74) = 2.54, p < .05. These findings complement a long history of literature that finds that being a minority, above and beyond an individual's level of offending, is a risk factor for juvenile justice involvement (e.g., Huizinga, Knight, & Lovegrove, 2007), with poverty and urbanization exacerbating ethnic minority youth's chances of contact (Frazier, Bishop & Henretta, 1992). Taken together, Black youth's lower expectations for staying out of the trouble with the law may be less closely linked to the level of their antisocial behavior, but more strongly associated with other socio-contextual risk factors.

# 4.1.4 Parent expectations.

In normative samples, parents' expectations for their adolescents are typically associated with all domains of youth's expectations (i.e., educational and occupational), but the current analyses only find a link between parents' and youths' educational and law expectations, not occupational expectations. It is possible that parents are more aware of and/or more closely involved in their adolescents' academic achievement and juvenile justice commitment than in youths' occupational development. For instance, given that it is likely both parents and youths receive

academic progress reports, both may agree on their expectations for how far the youth is capable of going in school. Similarly, in the realm of law expectations, it is likely that parents' involvement in the adjudication process can partially explain why parents' and youths' law expectations map on to each other. Although it is less clear why parents' and youths' occupational expectations do not converge, to the extent that expectations for occupational success may be more subjective than education or law, youth and parents may differ in their optimism. As a whole, parents' and youths' educational and law expectations appear to be more congruent than occupational expectations, and parental involvement in these two former domains may explain this finding.

# 4.1.5 Bonding to teachers.

Although it was expected that young offenders' bonding to teachers would be most important for educational expectations, adolescent-teacher bonding was linked to youth's law and occupational expectations but not educational expectations. Given the comorbidity of learning difficulties and juvenile justice involvement (e.g., Grigorenko et al., 2015), positive adolescent-teacher relationships may improve socio-emotional outcomes rather than academic outcomes. In other words, youthful offenders' may have substantial deficits in their cognitive abilities, and bonding to teachers may only be sufficient for promoting healthy psychosocial development. While cognitive abilities are no doubt important for occupational attainment, recall the items that makeup the occupational expectations construct: "What do you think your chances are to have a good job or career?"; "What do you think your chances are to earn a good living?"; "What do you think your chances are to provide a good home for your family?". Not only are these items more subjective than educational attainment (e.g., "good" is according to the participant), there is

also a relational component to them (i.e., providing a good home for his/her family). For young offenders, warm relationships with teachers may foster a sense of self-efficacy to achieve these self-defined goals and to establish future positive relationships. In a similar way, research finds that strong relationships with non-familial adults are important for positive behavioral outcomes (Greenberger, Chen, & Beam, 1998), and having a strong bond to teachers may act as a protective factor for reducing young offenders' problem behavior. In brief, while bonding to teachers may not facilitate youth's educational aspirations, these social bonds may be important for general socio-emotional health expectancies.

# 4.1.6 Moderators of socioeconomic disadvantage and expectations.

As a whole, there was not strong evidence that social or demographic variables impact the association between socioeconomic disadvantage and high-risk youth's expectations (with the exception of Hispanic race/ethnicity). Socioeconomic disadvantage may have a universal pathway in its impacts on educational and occupational expectations within a high-risk sample. An important future direction will be to identify what protective factors may successfully attenuate this association.

#### 4.1.7 Expectations as a mediator of socioeconomic status and young adult outcomes.

As a whole, youth's expectations did not act as a mediator of socioeconomic status and young adult adjustment, which was mostly due to the weak to non-significant association between socioeconomic disadvantage and expectations. Although there was not impressive evidence for a pathway from socioeconomic disadvantage to expectations, the pathway from expectations to young adult outcomes was notable. Specifically, across all analyses, both higher expectations for educational attainment and law-abiding success were associated with greater self-reported educational attainment and lower self-reported offending, respectively. This supports the notion that future orientations among high-risk youth, who may lack the financial resources among others to put their future plans into action, are still meaningful insights into adult adjustment (e.g., Ou & Reynolds, 2008). However, the association between occupational expectations and employment was not significant, and this may be because the assessment of employment weeks employed—may not be affected by occupational expectations, while other occupational outcomes (such as the type of job) may be impacted by these future beliefs.

Although the adolescent expectations to young adult outcome analyses yielded generally promising results, especially for self-reported law-abiding conduct, it is important to note the limitations of these findings in regards to educational attainment. First, educational expectations were assessed at 18 years of age, and it is possible that some youth may have already graduated high school, or were about to graduate. Thus, the relation between educational expectations and high school/GED completion may be due to a relatively short window between expectations and the outcome, or may be because the event had already taken place. With respect to educational expectations predicting college attendance, only 13.2% of the sample attended college (and did not necessarily complete college), and thus, although future expectations may map onto future academic outcomes, the accuracy of educational expectations may come largely in part because the majority of expectations and educational attainment are relatively low.

# 4.2 STRENGTHS AND LIMITATIONS

Among the strengths of this study were its unique sample of juvenile offenders, its prospective nature, the ability to control for cognitive abilities (both domain-general and academic) when examining the impacts of future expectations on young adult outcomes, and its multi-informant design. However, there were also important limitations. First, the female subgroup of the sample made the interpretation of the findings more challenging, given that there were fewer females than males, and females were qualitatively different that the male offenders. To address this issue, however, analyses were rerun with gender included as a covariate, as well as a matched sample of males and females. Still, this matched sample was imperfect (males were still significantly more antisocial), and thus future studies interested in gender differences would benefit from a better-matched sample. Second, the present sample did not include a reference group, which limits the analyses to examine only within-group differences of juvenile offenders. It is possible that certain relations that were non-significant, such as the relation between socioeconomic disadvantage and expectations, would be found in a more heterogeneous sample. Third, race was confounded with site (i.e., if adolescents were recruited from Philadelphia or Phoenix), such that the majority of Black youth came from the Philadelphia site, and the majority of Hispanic youth came from the Phoenix site. Indeed, it is possible that these findings may be due in part to region-specific regulations and prejudices.

Fourth, preliminary analyses revealed that expectations of future adult success are moving targets, and thus this study is limited by examining expectations at only one time point. However, the transition from adolescence to adulthood has been shown to be an important time to assess psychological markers of resilience (Greene, 1990). Relatedly, the social factors of interest, parental expectations and bonding to teachers, were only measured at one time point, and it is likely that the relations between these social factors on young offenders' expectations are bidirectional in nature. Furthermore, it is important to consider that the assessment of bonding to teachers was a relatively blunt instrument (i.e., three general items about perceptions of teachers). However, it is notable that this imperfect assessment of adolescent-teacher relationships was able to detect the contributions that teachers make to adolescents' future beliefs. Finally, although the study was bolstered by its multi-informant design, significant associations between youth expectations and young adult outcomes were only found when using self-report measures. This may be due in part to shared method variance, and future studies would benefit from including self-, official-, and informant-reports of young adult outcomes to gain more accurate estimates of these associations.

# 4.3 CONCLUSIONS

Adolescent future expectations are meaningful psychological markers of prospective behavior in early adulthood among high-risk youth involved in the juvenile justice system. This set of findings suggests that, in addition to normative populations of adolescents, theories of expectations and achievement can be applied to high-risk adolescents. However, given that highrisk youth often lack the resources to actualize their expectations, it will important for resilience researchers to consider if the mechanisms that mediate adolescent expectations and young adult outcomes differ for high-risk and typically developing youth (e.g., what sources and level of support are necessary for high-risk youth to achieve their goals for the future?).

The present study's findings can also be applied practically. The current study identifies demographic variables that may put certain youth at greater risk for reduced expectations—male

and ethnic minority status—but also finds important contextual factors that may boost adolescent offenders' future outlooks—relatively higher parental expectations and bonding to teachers. Taken cumulatively, intervention efforts would be most effective when targeting multiple levels of adolescent offenders' contexts (e.g., home and school), and this would be particularly important for male, ethnic minority young offenders.

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