

# THE FRUITS OF GOOD WORK: EARLY WORK EXPERIENCES AND ADOLESCENT DEVIANCE

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*Some theories of crime suggest that "adultlike" work conditions diminish adolescent delinquency, whereas others suggest that precocious entry into adult work roles increases youth problem behaviors. The authors consider the relationship between delinquency and several dimensions of adolescent employment, including learning opportunities, freedom and autonomy, social status, demands and stress, wages, and compatibility between work and school. They find the lowest rates of 12th-grade school deviance, alcohol use, and arrest among adolescents whose jobs supported rather than displaced academic roles and provided opportunities for them to learn new things. In contrast, many qualities of work considered desirable for adults (autonomy, social status, and wages) appear to increase delinquency in adolescence. The authors conclude that work conditions have age-graded effects on delinquency that are contingent on the life course stage of the worker.*

**Keywords:** *adolescent employment; life course*

Criminologists have long considered the relationship between employment and delinquency. In Robert Merton's (1938) structural strain theory, for example, the pay and prestige of employment are important aspects of the legitimate opportunity structure. In age-graded social control theory, work stability and commitment indicate adult social bonds that may reduce offending (Sampson and Laub 1993). Economic theories of choice emphasize wages in contrasting the relative attractiveness of conventional and illegal activities (Becker 1968). Social learning and differential association theories, in contrast, stress the values, attitudes, and behaviors learned in interaction with

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others at work (Sutherland and Cressey 1978). Finally, labeling and criminal embeddedness perspectives suggest that the stigma of early delinquency restricts future access to meaningful employment and exacerbates subsequent criminality (Becker 1963; Hagan 1993; Needels 1996).

Although each of these theories emphasizes a different mechanism linking work and crime, almost all suggest that the presence or conditions of employment may affect criminal behavior. Among adult workers, employment characterized by stability (Sampson and Laub 1993), commitment (Crutchfield 1989), satisfaction (Uggen 1999), or career potential (Huiras, Uggen, and McMorris 2000) appears to reduce criminal and deviant behavior. The relationship between employment and deviance, however, appears to be markedly different for young workers. Although even marginal employment reduces the likelihood of adult crime (Sampson and Laub 1993; Uggen 2000b), working more than 20 hours per week appears to increase delinquency and problem behaviors for adolescents (Greenberger and Steinberg 1986; Ploeger 1997; Wright, Cullen, and Williams 1997). This relationship is not necessarily a selection artifact arising from preexisting propensities of young workers, because some longitudinal evidence shows that the number of hours worked affects delinquency and substance use even when prior delinquency is statistically controlled (Bachman and Schulenberg 1993; McMorris and Uggen 2000; Mihalic and Elliott 1997; Mortimer, Finch, et al. 1996; Steinberg and Dornbusch 1991; Steinberg, Fegley, and Dornbusch 1993).

Despite the robust relationship between work intensity (or the number of hours worked) and delinquency, few researchers have investigated whether work quality has the same salutary effects on adolescent deviance as it has on adult criminality (Uggen 1999). In fact, the whole notion of job quality may have different meanings across the life course; jobs that adolescents perceive as desirable may be considered "dead-end jobs" by adults. We therefore adopt a conception of job quality that allows for change over time, referring to characteristics such as autonomy, wages, and status as work dimensions or conditions rather than assuming that they represent fixed or immutable indicators of the intrinsic worth or quality of employment.

Ethnographic research suggests a strong link between the quality and availability of adolescent work in a neighborhood and its rate of youth crime (Sullivan 1989), yet few individual-level quantitative studies have been undertaken. Wright and Cullen (2000) offered one of the few systematic, quantitative examinations of the effects of several job dimensions on occupational or work-related deviance. They reported no relationship between job skills, work environment, and minor work-related delinquency, though even this excellent study was limited by cross-sectional data, a sample size of fewer than 300 in the final models, and heterogeneous job constructs. One

goal of the present investigation was therefore to disentangle the effects of various job characteristics on other forms of delinquency to help identify the work conditions that make for good jobs in adolescence.

Although criminologists have considered the effects of wages (Allan and Steffensmeier 1989) and the duration of adolescent employment (Mihalic and Elliott 1997) on deviance, the paucity of research on the effects of other work conditions may be due to a perception that youth employment is homogeneous, because most adolescents are employed in lower level retail and service-sector jobs (Committee on the Health and Safety Implications of Child Labor 1998). Although the range of industries or occupations may be limited, the conditions of youth work appear to vary substantially across important dimensions (Mortimer 2003). Moreover, early work experiences have pervasive consequences for adolescent adjustment and mental health, with some studies finding salutary effects on adolescent depressive affect and well-being (Mortimer, Harley, and Staff 2002), occupational value formation (Mortimer, Pimentel, et al. 1996), physical health (Schulenberg and Bachman 1993), and later labor market performance (Stern and Nakata 1989).

A focused analysis of the effects of specific work dimensions on delinquency is therefore suggested by theories of crime as well as empirical research linking the number of hours worked to delinquency and other facets of adolescent development. Our analysis of adolescent work poses three central questions: (1) Do early work experiences affect adolescent crime and deviance net of work intensity and self-selection processes? (2) If so, is adolescent work then harmful or beneficial in reducing adolescent criminality? and (3) Which employment dimensions are the most important for delinquency theory and research?

#### *LINKING ADOLESCENT WORK AND DEVIANCE*

Although most criminological theories predict that the conditions of employment may affect criminal behavior, each identifies different work dimensions and posits a different mechanism linking early work experiences and delinquency. Nevertheless, predictions from these theories may be summarized in two broad competing propositions.

##### *Proposition 1: Adolescent Work Is Beneficial and Reduces Delinquency*

Several criminological theories suggest that more adult-like jobs are beneficial for adolescents. For example, Merton's (1938) structural anomie theory

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argues that criminal innovation results in part from the blocked pursuit of cultural and material success goals typically attained through legitimate work. Although school remains the key institutional pathway to legitimate attainment in adolescence, early work experiences may provide an additional avenue for success in contemporary U.S. society. The workplace opportunity structure may be especially important for adolescents who are unengaged or unsuccessful in school. In terms of Merton's adaptations, adolescents in jobs with relatively high wages may be less likely to retreat (use drugs and alcohol) or innovate (commit crime) in pursuit of economic attainment and social ascent.

Similarly, Cohen (1955) considered adolescent deviance as a delinquent solution to the status problem faced by working-class youth. Delinquency among disadvantaged adolescents therefore results from the status frustration they face in attempting to measure up against a "middle-class measuring rod." Early employment may offer an alternative "corner-boy" solution to this status problem (Whyte 1937), as well as an "escape from school" (Willis 1977:100). In particular, adult-like jobs provide adolescents with legitimate opportunities to achieve social status, especially for working-class youth with limited opportunities for success in the classroom.

Differential association and social learning theories stress values, attitudes, and behaviors learned in interaction with others (Akers 1998; Sutherland and Cressey 1978). Early work experiences teach work maturity skills and job maintenance techniques and may provide important definitions unfavorable to crime and favorable to conventional work. Unfortunately, most adolescents work in service-sector or entry-level sales positions, which may not be effectively organized against delinquent behavior (Wright and Cullen 2000). Nevertheless, learning theories suggest that work that provides opportunities to learn new skills, engages or challenges young workers, and communicates values and behaviors favorable to conventional employment is likely to inhibit adolescent delinquency. In contrast, work that provides few opportunities or incentives to learn new skills may exacerbate delinquent behaviors by socializing youth into poor work habits with unmotivated and unsupervised coworkers.

Finally, Robert Agnew's (1985, 1992) general strain theory suggests that aversive family, school, and work situations often engender psychological strain, which may lead to "illegal escape attempts or anger-based delinquency" (Agnew 1985:154). Youth who must work in overly stressful or demanding jobs for family or economic reasons may be particularly prone to acting on these frustrations. In contrast, work that allows adolescents to avoid psychologically stressful or straining situations, especially with their school-work, may reduce frustration and anger-based delinquency at school.

Although each of these theories emphasizes different dimensions, they all suggest that employment conditions that are positively valued by adults—high wages and status, learning opportunities, and minimal stress—will reduce deviant behavior among adolescents.

*Proposition 2: Adolescent Work Is  
Harmful and Increases Delinquency*

An alternative view, that adultlike job conditions actually increase delinquency, is suggested by several competing theories of crime. For instance, social control or social bond theories generally assume that age-specific attachments to conventional institutions inhibit crime and delinquency (Sampson and Laub 1993). Travis Hirschi's (1969:188) social control or bonding theory stresses the importance of attachment to school and family, but not employment, for restraining adolescent delinquency. Because the effects of social controls are age graded, bonding theory suggests that adultlike work during adolescence may actually weaken the more developmentally important informal social controls of the school and family and thus increase the likelihood of delinquent behavior.

Precocious development models extend age-graded theories of social control by attributing the robust correlation between work intensity and adolescent deviance to a much broader clustering of behaviors representing a premature or precocious transition to adult roles (Bachman and Schulenberg 1993; Newcomb and Bentler 1988). Precocious development theory argues that youth who enter adult-like working situations too early may adopt adultlike leisure activities and spending patterns, which in turn leads to early dating, alcohol and drug use, and school misconduct. Work involving excessive demands, high status, or "premature affluence" (Bachman 1983) will increase adolescent delinquency, especially status offenses.

Finally, power-control theory posits that parental workplace positions influence family relations, which in turn affect adolescent delinquency (Hagan, Simpson, and Gillis 1987). Most tests of power-control theory consider the employment conditions of parents rather than children, showing how gender differences in workplace authority relations affect the delinquency of sons and daughters. Adolescent workplace authority, however, may constitute an important mechanism linking parental authority relations with delinquency because young workers in supervisory positions have greater opportunity for some forms of delinquency (Gottfredson and Hirschi 1990; Uggen 2000a). Although autonomous work may be beneficial for adults, early decision-making autonomy in the workplace heightens mental distress for male adolescents (Shanahan et al., 1991). By this logic, work that

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gives adolescents excessive freedom and autonomy in the absence of social controls is likely to increase rather than decrease delinquency.

As this brief review suggests, there are two competing propositions concerning the relationship between adolescent work and deviance. Table 1 organizes hypotheses from the harmful and beneficial propositions around the expected effects of work dimensions, including wage, status, learning opportunities, autonomy, stressors, and compatibility with schoolwork. We next assess whether these specific job dimensions exert independent effects on delinquency, net of work intensity, prior deviance, and self-selection processes. To test whether adult-like work conditions are beneficial or harmful for adolescents, longitudinal data with sound measures of early delinquency, refined indicators of work experiences, and a range of deviant outcomes are needed.

### *DATA AND MEASURES*

#### *The Youth Development Study (YDS)*

We analyzed data from the YDS, a longitudinal survey of adolescents and their parents from St. Paul, Minnesota. Beginning in 1988, a randomly selected panel of 1,000 St. Paul high school students completed follow-up surveys each year to assess the effects of adolescent work on mental health, educational attainment, work attitudes, and developmental maladjustment. The panel retention rate for the YDS was 93 percent for the four high school years, with valid data available for 84 percent of cases in our selection-to-work models and valid work dimension and deviance scores available for 652 adolescent workers. Data are missing on work dimensions when respondents were not working, when they were working but did not respond to individual survey items, and when they had been lost to attrition from the sample. We discuss our treatment of missing data and the sensitivity of our results to different specifications in more detail below.

The YDS is well suited for this analysis because it provides a complete job history for each respondent, as well as diverse measures of early work experiences. In addition, the sample accurately reflects the St. Paul community at the initiation of the study (Finch et al. 1991). The median household income for the parents of the adolescent YDS respondents fell within the range of \$30,000 to \$39,000 in 1988, with approximately half of the parents having attended some college and 20 percent having attained college degrees. Approximately 74 percent the adolescent respondents were White, 10 percent were African American, 5 percent were Hispanic, and 4 percent were Asian.

**TABLE 1: Proposed Effects of Adolescent Work Dimensions and Deviance**

<i>Work Dimension</i>	<i>Proposition</i>	
	<i>Beneficial (decrease deviance)</i>	<i>Harmful (increase deviance)</i>
High wages	Increases legitimate opportunities	Signals premature affluence and precocious development
Work-derived peer status	Reduces status frustration	Weakens parental controls
Learning opportunities	Provide definitions unfavorable to delinquency in most work settings	Provide definitions favorable to delinquency in some work settings
Workplace autonomy	Reduces status frustration; alters ratio of control exercised to control experienced	Weakens adult controls
Work stressors	No beneficial effects	Increases negative affect and psychological strain
Work and grades compatibility	Balancing multiple roles reduces psychological strain and helps overcome school failure	No harmful effects

*A Range of Deviant Outcomes*

We considered three indicators of adolescent deviance—school deviance, alcohol use, and arrest—to examine the robustness of the work effects. First, school-related deviance is especially salient to theories suggesting that adult-like work conditions may weaken educational commitment. Our school deviance measure was the natural logarithm of the sum of responses to two questions that asked respondents how often they got into trouble for breaking school rules (e.g., truancy, tardiness) or misbehaving (coded 0 = never to 5 = ten or more times) and how many times they had been sent to the principal’s office or to detention (coded 0 = never to 5 = ten or more times) since the beginning of their senior year of high school (Cronbach’s  $\alpha = .83$ ).

Second, we examined alcohol use in adolescence because it is a status offense signaling a premature initiation of behavior that is legal among adults. Alcohol use was measured as the natural logarithm of the number of times respondents consumed alcohol in the past month of their senior year of high school, ranging from 0 to 40 or more times per month. In addition to school deviance and status offenses, we were concerned with the effects of job conditions on more serious criminal behavior during the high school years. Formal criminal justice contact was measured by whether respondents were arrested at any point during their senior year of high school.<sup>1</sup>

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*Adolescent Work Dimensions:  
Measures and Expectations*

Because our goal was to characterize the typical job held during the high school years, each of our work measures reflected the average or mean observed score over the 10th-, 11th-, and 12th-grade years in which the respondents were employed (see Mortimer et al. 2002). For some respondents, the work dimension measures indicate jobs held over three years; others had paid employment at only one or two of the annual surveys. Twenty-nine percent of the respondents worked all three years, 31 percent worked two years, 22 percent worked only one year, and 18 percent did not report working at all at the time of the 10th-, 11th-, and 12th-grade survey administrations. The study was designed so that students were surveyed during the school year and asked about their current jobs. These data therefore speak to the effects of job characteristics on adolescent deviance while most youth are enrolled in school rather than the effects of summer employment when competing educational demands are less salient.

Although job characteristics are measured in studies of adults along dimensions such as workplace authority and ownership, the range of variation on these characteristics is generally restricted for youth. For example, few adolescents are employed as supervisors or employers who own their own businesses. We therefore considered wages, status, learning opportunities, autonomy, stressors, and the compatibility of work with school as indicators of the nature of adolescent work. Table 1 summarizes the expected effects of each of these work dimensions on adolescent deviance as predicted by the harmful and beneficial propositions. Table 2 provides question wordings and descriptive statistics on these measures as well as the background and delinquency indicators.

*Wages.* Wage rate references the average hourly pay in the respondent's current job. The hypothesized effect of wages on delinquency varies across theoretical perspectives. According to the harmful perspective, high wages signal precocious affluence and weaken the informal social controls of the family and school, increasing delinquency and substance use (Bachman 1983). According to the beneficial perspective, high wages indicate attainment and pecuniary success, inhibiting deviant behavior (Merton 1938).

*Work-derived peer status.* Adolescent work is concentrated in lower level retail and service-sector jobs (Committee on the Health and Safety of Child Labor 1998), providing little variation along traditional scales of socioeconomic status or occupational prestige. Unlike these occupation-based rankings, our status measure indicated whether adolescents gained greater social

**TABLE 2: Means and Standard Deviations for Work Dimensions and Background Variables of Adolescents Employed during 10th, 11th, or 12th Grade (*n* = 652 to 781)**

<i>Variable</i>	M	SD
Work dimensions		
Wage rate		
Current job dollars per hour	4.42	1.00
Work-derived peer status		
Having a job gives me higher status among my friends.	1.84	.82
Learning opportunities		
My job gives me a chance to learn a lot of new things.		
My job uses my skills and abilities.		
Overall, how challenging do you consider your present job?	11.98	3.05
Are the challenges in your job mental, physical, or both?		
Do you think that the things you are learning in your job will be useful to you in your later life?		
Autonomy		
How much control do you have over the way you spend your time at work?	6.21	1.67
Overall, how much freedom do you have to make important decisions about what you do at work and how you do it?		
Work stressors		
How often is there time pressure on your job?		
How often are you exposed to excessive heat, cold, or noise at work?		
How often are you held responsible for things that are really outside your control?	19.70	4.82
My job requires that I work very hard.		
I feel drained of my energy when I get off work.		
I have too much work to do everything well.		
To satisfy some people on my job, I have to upset others.		
Sometimes I am unclear about what I have to do on my job.		
Work and grade compatibility		
Has your job affected your grades?	2.87	.56
Average number of hours worked per week	19.49	8.61
Background variables		
Male (vs. female)	.44	.50
White race (vs. non-White)	.78	.42
Freshman-year grade point average	2.53	.79
Socioeconomic status (z score)	.19	1.59
Prior deviance		
9th-grade school deviance (log)	.86	.70
9th-grade drinking (log)	.73	.93
Proportion arrested prior to age 14	.02	.16
9th-grade smoking (log)	.49	.91
Deviance		
12th-grade school deviance (log)	.52	.59
12th-grade alcohol use (log)	.89	.91
12th-grade proportion arrested	.03	.19

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status with their friends because of their jobs. Again, the predicted effect of work status on delinquency varies across theoretical perspectives. From the harmful perspective, high work-derived status signals a premature adoption of adult roles, weakening the social controls of school (Hirschi 1969), increasing adolescent power (Hagan et al. 1987), and contributing to higher rates of delinquency. From the beneficial perspective, status derived from work may reduce delinquency by counteracting school-based status frustration, particularly among lower class youth (Cohen 1955; Willis 1977).

*Learning opportunities.* Our indicator of opportunities for workplace learning was a composite scale that included the following measures: the opportunity to use skills and abilities on the job, the opportunity to learn “a lot of new things,” the perceived usefulness of what is learned at work for the future, and the mental and physical challenges of the employment (Cronbach’s  $\alpha = .80$ ). Unfortunately, no data are available regarding the delinquency of adolescent coworkers or the opportunity to learn or commit delinquent acts on the job, so we could not test important aspects of differential association theory. Nevertheless, the beneficial hypothesis makes the more general prediction that greater conventional learning opportunities may reduce delinquency by providing definitions favorable to conventional work and unfavorable to crime.

*Workplace autonomy.* Workplace autonomy indicates respondents’ perceived control over time spent at work as well as their freedom to make important work-related decisions, with higher scores indicating greater autonomy (Cronbach’s  $\alpha = .77$ ). According to the harmful view, adolescents in more autonomous positions may commit more delinquency because their jobs confer power but are subject to few external controls (Hagan et al. 1987). Under some conditions, however, highly autonomous jobs could reduce status frustration and delinquency. Although a test of Charles Tittle’s (1995) control balance theory of deviance was beyond the scope of this study, we note that workplace autonomy affects the ratio of control exercised to control experienced, a core concept and predictor in control balance theory.

*Work stressors.* The degree of stress at work was indexed by eight items: time pressure, exposure to noxious work conditions, three work overload indicators (“too much work,” have to “work very hard,” and feeling “drained” after work), a lack of clarity in job responsibilities, being responsible for things beyond one’s control, and whether one must upset some people to satisfy others on the job (Cronbach’s  $\alpha = .72$ ). Although few would argue that highly stressful work benefits young workers, we discuss work stress under the rubric of the beneficial proposition because stress is one aspect of adult-

like job conditions. In keeping with the harmful proposition, Greenberger and Steinberg (1986) found that work stress is associated with more frequent substance use. Stressful adult-like work conditions are thought to induce psychological strain on adolescents that may lead to adultlike coping responses such as alcohol use.

*Work and grades.* The compatibility between work and grades at school assessed the degree to which respondents believed that their jobs improved or diminished educational performance, with higher scores indicating that work increased grades and lower scores indicating that work decreased grades. Although researchers continue to debate whether employment at fewer than 20 hours per week helps or hinders grade point average (Mortimer, Finch, et al. 1996; Steinberg and Dornbusch 1991; Steinberg et al. 1993), adolescent work appears to reduce high school dropout rates (D'Amico 1984) and increase involvement in school activities (Mihalic and Elliott 1997). Too much work, however, is likely to compromise adolescents' central role as students. Youth who have difficulty balancing their roles as students and workers may engage in more deviance and substance use, from both the stress of unsuccessfully juggling these roles (Agnew 1985) and the diminished salience of school controls (Hirschi 1969).

#### *Background Variables*

Because an association between the number of hours worked, work conditions, and delinquency may be explained by common or correlated background characteristics, our multivariate models included statistical controls for race (White race compared to non-White), freshman-year grade point average, parental socioeconomic status, and sex. Minor deviance in the freshman year of high school, indicated by the natural logarithm of alcohol use, cigarette use, and school misconduct, and an arrest measure prior to age 14 were included as indicators of prior delinquency or preexisting propensities (Gottfredson and Hirschi 1990). The inclusion of lagged indicators for each dependent variable in the analysis strengthened our inferences about the causal significance of work conditions, allowing us to assess job effects on changes in school deviance, alcohol use, and arrest over the high school years.

Table 2 presents means and standard deviations for each of the work and deviance constructs. In this sample of employed adolescents, girls were more prevalent than boys, 78 percent of respondents were White, freshman grade point average ranged from C to B, and working respondents averaged almost 20 hours per week on their jobs. Concerning the deviance indicators, we observed relative stability between the freshman and senior years, with

seniors in the sample having slightly higher rates of alcohol use and lower rates of school-related deviance. Very few of the adolescents (2 percent) were arrested before the age of 14, although slightly more (3 percent) were arrested in their senior year of high school.<sup>2</sup> A complete correlation matrix is shown in Appendix B.

## RESULTS

### *Selection to Adulthood Work and Sample Attrition*

The relationship between early work conditions and crime has been difficult to assess with certainty. In most research settings, social scientists cannot randomly assign employment conditions such as autonomy or stress to gauge their effects on criminal behavior. Therefore, it has been virtually impossible to tell whether such dimensions are causes or correlates of offending. Although longitudinal evidence continues to suggest that long work hours increase the likelihood of deviance and substance use after controlling for these prior behaviors, some argue that the apparent effects of work conditions are really due to preexisting differences that drive people to select into different work settings. For example, the least deviant adolescents may be most likely to self-select more desirable jobs, but they would be less likely than other persons to commit delinquency even in the absence of employment. More generally, characteristics such as intelligence, impulsiveness, ambition, and physical size may affect both the decision to work and the likelihood of deviance, suggesting that work may be a spurious correlate rather than a cause of changes in offending (Gottfredson and Hirschi 1990).

We addressed possible sources of selection bias in our analysis by including statistical controls for factors related to both work and crime, lagged dependent variables and other indicators of prior deviance to control preexisting criminal propensities, and a hazard rate for selection to employment based on a Heckman sample selectivity model (Heckman 1976, 1979). In the first stage of our selection model, we estimated the effects of sex, family income, parents' education, race, grade point average; and arrest, school deviance, drinking, and smoking in the 9th grade on the probability of employment at the 10th-, 11th-, or 12th-grade survey administration. The selection-to-work equation indicated that girls were more likely to be employed than boys, adolescents with higher grade point averages in the 9th grade were more likely to be employed than those with lower grade point averages, and adolescents from families with higher annual incomes were more likely to be employed than adolescents from lower income families, overall  $\chi^2(9) = 34.77, p < .001$  (table not shown, available from the authors).

The results of delinquency models that included selection terms are discussed in the section titled “Alternative Specifications” and displayed in Appendix A.

We also examined whether prior indicators of deviance affected the nature of adolescent employment. Associations between work conditions and deviance may result from a selection process whereby less delinquent adolescents acquire work experiences different from their more delinquent peers (see, e.g., Hagan 1993; Sullivan 1989). Table 3 shows the effects of early deviance on the subsequent work dimensions. The table summarizes the results of 21 separate regression equations in which ninth grade deviance and background characteristics were used to predict the dimensions of employment in high school.<sup>3</sup> Notably, we found that 9th-grade alcohol use, school misconduct, and arrest increased the average number of hours worked in subsequent years of high school. As discussed below, a substantial portion of the association between work intensity and later deviance is therefore likely to be explained by self-selection processes.

The 9th-grade deviance indicators generally failed to predict other job dimensions in 10th through 12th grades, although three of the six job characteristics were associated with prior school misconduct. Early school deviance was linked to higher wages, higher peer status, and also greater work stress in subsequent school years. This pattern may suggest early disengagement from school and interest in more adultlike institutions.<sup>4</sup> Although early arrest was associated with greater work intensity, it was not strongly related to other dimensions of adolescent employment (see also Bushway 1998). Overall, however, prior deviance was a significant predictor of only 3 of the 18 work dimensions in these regression models, although 9th-grade deviance was closely correlated with the number of hours worked in high school. These analyses thus confirm the importance of statistically controlling for prior deviance in estimating the effects of work intensity, wages, status, and stressors on adolescent delinquency.

#### *Effects of Work Dimensions on Adolescent Deviance*

Tables 4 to 6 report the effects of work conditions and the number of hours worked on 12th-grade school-related deviance (Table 4), alcohol use (Table 5), and arrest (Table 6). In each table, the first model estimates the effects of work intensity, background variables, and lagged deviance on each of the delinquent outcomes. The second column isolates the “bivariate” relation between each of the six work constructs (controlling for prior deviance and background) and the subsequent outcome variables, summarizing the results of six separate equations. Estimates from these models are useful for comparison with effects observed in models that included the number of hours

**TABLE 3: Selection into Work Dimensions: Effects of 9th-Grade Deviance on the Number of Hours Worked and Six Work Dimensions (10th to 12th grades)**

<i>Work Dimension (dependent variable)</i>	<i>Early Delinquency Measure (independent variable)</i>		
	<i>9th-Grade School Deviance (log)</i>	<i>9th-Grade Alcohol Use (log)</i>	<i>Arrest before Age 14</i>
Number of hours worked	1.510 (.460)*** <i>667</i>	1.106 (.334) <sup>†</sup> <i>652</i>	3.644 (1.801)** <i>669</i>
Wage rate	.153 (.060)** <i>662</i>	.056 (.044) <i>647</i>	.119 (.235) <i>664</i>
Work-derived peer status	.095 (.047)** <i>673</i>	.003 (.034) <i>657</i>	.312 (.184) <i>675</i>
Learning opportunities	-.247 (.191) <i>664</i>	.021 (.135) <i>647</i>	.681 (.723) <i>666</i>
Work stressors	.640 (.292)** <i>651</i>	.326 (.209) <i>635</i>	1.096 (1.100) <i>653</i>
Autonomy	.033 (.104) <i>673</i>	.013 (.073) <i>656</i>	-.083 (.396) <i>675</i>
Work and grades	.068 (.035) <i>627</i>	.038 (.026) <i>613</i>	.467 (.145) <i>629</i>

NOTE: The coefficients represent the effects of early school misconduct, alcohol use, and arrest on each job characteristic, taken from ordinary least squares regression models that statistically control family socioeconomic status, freshman-year grade point average, race, and gender. Numbers in parentheses indicate standard errors. Numbers in italics represent total cases in each regression equation.

\*\* $p < .05$ , two-tailed. \*\*\* $p < .01$ , two-tailed. <sup>†</sup> $p < .001$ , two-tailed.

worked and all of the job characteristics simultaneously. The third model includes each of the work dimensions, hours, lagged deviance, and background variables.

Overall, we found that several of the conditions of adolescent employment significantly affected school deviance, alcohol use, and arrest—even when the effects of the number of hours worked, prior deviance, and other background characteristics were statistically controlled. For example, Table 4 shows that highly autonomous work increased 12th-grade school-related deviance. Not surprisingly, adolescents working in jobs they perceived as compatible with their academic work committed fewer acts of school deviance. A test of significance for the full set of work dimensions, contrasting model 1 with model 3, showed them to be significant as a group ( $F$  statistic between model 3 [work dimensions and hours] and model 1 [number of hours worked only] = 3.84 with six degrees of freedom;  $p < .001$ ).

Table 5 presents a similar picture, showing that highly autonomous work that raised social status was associated with 12th-grade alcohol use. Although the effect of the number of hours worked was statistically

**TABLE 4: Regression Coefficients: The Effects of Adolescent Work Characteristics on 12th-Grade School Deviance (log)**

Predictor	Model 1: Number of Hours Worked	Model(s) 2: Work Dimensions (bivariate with control)	Model 3: Work Dimensions and Hours
	b (SE)	b (SE)	b (SE)
Number of hours worked	.009 (.003)**	—	.008 (.004)**
Work characteristics			
Learning opportunities	—	-.001 (.007)	-.011 (.008)
Autonomy	—	.029 (.014)**	.042 (.015)***
Work and grades	—	-.152 (.043) <sup>†</sup>	-.160 (.044) <sup>†</sup>
Work stressors	—	.005 (.005)	.001 (.006)
Peer-derived work status	—	.058 (.031)*	.054 (.033)*
Wage rate	—	-.004 (.024)	-.009 (.024)
Prior deviance			
9th-grade alcohol use (log)	.003 (.031)	—	.006 (.031)
9th-grade smoking (log)	-.025 (.036)	—	-.022 (.036)
9th-grade deviance (log)	.292 (.040) <sup>†</sup>	—	.303 (.040) <sup>†</sup>
Arrest before age 14	-.562 (.174) <sup>†</sup>	—	-.510 (.171)***
Background variables			
9th-grade GPA	-.070 (.038)*	—	-.069 (.038)*
Male (vs. female)	.263 (.049) <sup>†</sup>	—	.223 (.052) <sup>†</sup>
White race (vs. non-White)	.115 (.060)*	—	.115 (.060)*
Socioeconomic status	.006 (.016)	—	.016 (.016)
Constant	.132 (.143)	—	.405 (.260)
<i>n</i>	530	531	530
<i>R</i> <sup>2</sup>	.219	.210 to .229	.252

NOTE: GPA = grade point average. *F* statistic (model 1 vs. model 3) = 3.84. † \**p* < .10. \*\**p* < .05. \*\*\**p* < .01. †*p* < .001.

significant in both models, the inclusion of the work conditions again significantly improved the model's ability to predict subsequent deviance (*F* statistic between model 3 [work dimensions and hours] and model 1 [number of hours worked only] = 5.66 with six degrees of freedom; *p* < .001). Employment that was compatible with schoolwork reduced drinking as well as school deviance, while work that provided opportunities to learn new skills and challenges also decreased alcohol use in the 12th grade. Although boys drank significantly more than girls in model 1, it is noteworthy that the inclusion of the work dimensions mediated a large portion of the sex effect in model 3.

Concerning the effects of work conditions on official deviance as measured by arrest, Table 6 again shows that compatibility between work and

**TABLE 5: Regression Coefficients: The Effects of Adolescent Work Characteristics on 12th-Grade Alcohol Use (log)**

Predictor	Model 1: Number of Hours Worked	Model(s) 2: Work Dimensions (bivariate with control)	Model 3: Work Dimensions and Hours
	b (SE)	b (SE)	b (SE)
Number of hours worked	.012 (.005)**	—	.012 (.005)**
Work characteristics			
Learning opportunities	—	-.005 (.012)	-.027 (.013)**
Autonomy	—	.060 (.022)***	.076 (.023)†
Work and grades	—	-.227 (.067)†	-.252 (.068)†
Work stressors	—	.001 (.008)	-.005 (.009)
Peer-derived work status	—	.141 (.048)***	.147 (.051)***
Wage rate	—	.013 (.038)	.008 (.038)
Prior deviance			
9th-grade alcohol use (log)	.189 (.048)†	—	.199 (.047)†
9th-grade smoking (log)	.104 (.056)*	—	.100 (.055)*
9th-grade deviance (log)	.125 (.063)**	—	.132 (.062)**
Arrest before age 14	-.262 (.245)	—	-.223 (.239)
Background variables			
9th-grade GPA	-.062 (.059)	—	-.052 (.059)
Male (vs. female)	.171 (.077)**	—	.075 (.080)
White race (vs. non-White)	.289 (.094)***	—	.294 (.092)***
Socioeconomic status	-.002 (.025)	—	.016 (.025)
Constant	.260 (.220)	—	.633 (.394)
<i>n</i>	543	544	543
<i>R</i> <sup>2</sup>	.145	.134 to .153	.196

NOTE: GPA = grade point average. *F* statistic (model 1 vs. model 3) = 5.66. †  
 \**p* < .10. \*\**p* < .05. \*\*\**p* < .01. †*p* < .001.

school reduced the probability of arrest net of the number of hours worked and early deviance. In the final model, autonomous work in adolescence increased the probability of 12th grade arrest. Consistent with each of the previous specifications, the addition of the six work dimensions significantly improved the fit of the arrest model ( $\chi^2$  statistic between model 3 [work conditions and hours] and model 1 [number of hours worked only] = 17.93 with six degrees of freedom; *p* < .01).

#### *Alternative Specifications*

Although these results generally paint a consistent picture of work effects on adolescent deviance, it is possible that the observed patterns were due to

**TABLE 6: Probit Coefficients: The Effects of Adolescent Work Characteristics on 12th-Grade Arrest**

Predictor	Model 1: Number of Hours Worked	Model(s) 2: Work Dimensions (bivariate with control)	Model 3: Work Dimensions and Hours
	b (SE)	b (SE)	b (SE)
Number of hours worked	.004 (.016)	—	-.004 (.019)
Work characteristics			
Learning opportunities	—	.055 (.040)	.025 (.048)
Autonomy	—	.204 (.082)**	.220 (.093)**
Work and grades	—	-.474 (.208)**	-.538 (.225)**
Work stressors	—	.009 (.025)	-.001 (.031)
Peer-derived work status	—	.186 (.146)	.108 (.166)
Wage rate	—	.279 (.125)**	.217 (.130)*
Prior deviance			
9th-grade alcohol use (log)	-.120 (.154)	—	-.137 (.170)
9th-grade smoking (log)	.226 (.156)	—	.255 (.171)
9th-grade deviance (log)	.276 (.201)	—	.348 (.224)
Arrest before age 14	-.175 (.634)	—	-.263 (.735)
Background variables			
9th-grade GPA	-.187 (.185)	—	-.252 (.212)
Male (vs. female)	.594 (.247)**	—	.433 (.293)
White race (vs. non-White)	-.071 (.286)	—	.008 (.314)
Socioeconomic status	-.140 (.094)	—	-.144 (.103)
Constant	-1.926 (.688)***	—	-3.123 (1.34)**
<i>n</i>	481	482	481
$\chi^2$	22.69***	22.34*** to 28.94†	40.62†

NOTE: GPA = grade point average.  $\chi^2$  (model 1 vs. model 3) = 17.93.\*\*\*  
 \* $p < .10$ . \*\* $p < .05$ . \*\*\* $p < .01$ . † $p < .001$ .

our measuring work dimensions as “average” effects over the high school years or to unmeasured individual characteristics that predisposed some adolescents to work and others to avoid employment during this period. In addition to our main analysis of these pooled work dimensions, we also specified contemporaneous models (limiting the analysis to 12th-grade work effects) and lagged models in which 10th- and 11th-grade work characteristics predicted 12th-grade deviance. We found few differences in the effects of these various work dimensions on 12th-grade alcohol use, school-related deviance, and arrest with these alternative specifications (tables not shown, available from the authors).

We also estimated sample selectivity models that included a selection-to-work hazard for each of the deviant outcomes. Although no statistical

procedure can completely overcome potential biases related to sample selection and attrition, our analytic strategy helped minimize these sources of error. Including lagged versions of our dependent variables in the regression models above helped distinguish work effects from preexisting deviant propensities that may have predicted selection into work. We more explicitly modeled the selection process in the analyses reported in Appendix A, estimating two-stage Heckman models for the continuous outcomes and a bivariate probit model with a sample selectivity correction for the dichotomous arrest outcome.<sup>5</sup> These included up to 92 percent of the original sample in the selection equation and then adjusted estimates in the substantive deviance equations with a selectivity correction term.

Although the estimates obtained from the selection models in Appendix A were less stable than those obtained from the ordinary least squares regression and probit procedures reported above, we found no evidence that the decision to work biased the effects of specific job conditions on adolescent school deviance and alcohol use. Although background characteristics such as gender, grade point average, and family income clearly influenced the decision to work during high school, the inclusion of the selection-to-work  $\lambda$  did not appreciably change the direction or magnitude of the work predictors.<sup>6</sup> That is, the propensity to work in high school was associated with various background characteristics, but there was little evidence that this nonrandom selection process biased the effects of work conditions on delinquency. Although the combination of covariance adjustment with lagged dependent variables and a sample selection model offered a reasonable test of the effects of employment on delinquency, it is important to caution that these procedures cannot provide the sort of definitive evidence of causal relationships that a randomized experiment could supply (Winship and Mare 1992).<sup>7</sup>

In addition to examining the sensitivity of our estimates of work effects to different lag structures and selection approaches, we also considered possible interactions between each of the work dimensions and the average hours of employment (table not shown, available from the authors). Of the 18 possible interactions—six work characteristics across three deviant outcomes—three were statistically significant (at  $p < .05$ ). First, we found that certain dimensions of adolescent employment appeared to exacerbate the “harmful” effects of long hours of work on adolescent delinquency. In particular, stressful working conditions interacted with the number of hours worked to increase school-related deviance. Second, work-derived status interacted with work hours in predicting alcohol use, such that adolescents who worked fewer hours per week in jobs that conferred status among their friends exhibited the highest rates of drinking.

Perhaps more importantly, in light of the well-known finding that work of more than 20 hours per week may be harmful for adolescents, the interaction



**Figure 1: Interaction of Number of Hours Worked and Compatibility of Work with School on 12th-Grade Alcohol Use**

models suggested that certain work dimensions may remain “beneficial,” even at high levels of work intensity. Figure 1 displays the relationship between the number of hours worked and the compatibility of work with school on 12th-grade alcohol use. As shown in Figure 1, high hours of work actually decreased alcohol use if work reinforced rather than displaced school roles. Nevertheless, when adolescents were unable to balance these multiple roles and their grades suffered as a result of their jobs, their drinking increased dramatically when they worked long hours.

*TAKING STOCK OF ADOLESCENT  
WORK EXPERIENCES AND DEVIANCE*

The relationship between work and deviance is particularly important for adolescents and young adults because they are at the greatest risk for both crime and labor market problems (Allan and Steffensmeier 1989:110). This research took up three central questions in examining whether certain work dimensions or qualities of employment are linked to delinquency. We found support for the first question, whether the nature of employment affects adolescent deviance net of the number of hours worked, prior deviance, and self-selection processes. Adding the set of work characteristics to our basic model

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significantly increased its explanatory power in predicting school deviance, alcohol use, and arrest. These results do not appear to be artifacts of a self-selection process, because prior deviance affects few of the subsequent work dimensions in high school. In contrast, early deviance is a strong and consistent predictor of the amount or number of hours worked in the 10th through 12th grades.

It is important to note that our models explained approximately 20 percent of the variation in alcohol use and about 25 percent of the variation in school deviance. Therefore, it is possible that some portion of the observed work effects may be explained by factors not considered in our equations. Nevertheless, relative to extant research on adolescent work and delinquency, this research has imposed some of the most stringent controls for prior deviance and selectivity processes. Moreover, our findings reveal a consistent pattern of small but clear effects of adolescent job characteristics across a range of deviant outcomes and specifications, providing some reassurance that these results are not due to chance variation.

Concerning the second general question, whether adult-like work conditions are harmful or beneficial for adolescents, the weight of the evidence suggests that many precocious work experiences increase adolescent deviance. Not surprisingly, prior deviance indicators are the strongest determinants of later alcohol use, school deviance, and arrest. Nevertheless, job conditions affect deviance net of these lagged measures. Adolescents in jobs with great autonomy, social status, and relatively high wages—conditions that are positively valued in adult work—are more deviant in their senior year of high school than adolescents in jobs that are more closely supervised, provide less status with friends, and pay relatively low wages. In contrast, the intrinsic rewards of more age-appropriate jobs, such as learning opportunities that reinforce the connection between work and school, may engender a reduction in some forms of adolescent deviance.

With regard to our third question, concerning the most important dimensions of early work in explaining adolescent delinquency, we identified several consistent predictors across the three outcomes that bear on theories of delinquent behavior. Overall, we found little support for the proposition that work providing high pay and status is beneficial and reduces delinquency. With regard to structural strain theory, work offering high wages and social status did not reduce but rather increased adolescent delinquency. Of course, Merton's (1938) structural strain theory is not a life course model and was perhaps not intended to apply to the "dependent" teenagers of the late twentieth century. We found modest support for social learning and differential association theories, which suggest that the workplace learning environment may be organized against delinquency. Jobs providing greater conventional

learning opportunities significantly reduced 12th-grade alcohol use, perhaps by providing definitions unfavorable to status offenses such as substance use.

Concerning general strain theory, work stress is generally unrelated to deviance net of the other factors considered in our models, although the inability of adolescents to balance the multiple roles of student and worker may serve as a source of psychological strain leading to delinquency. Adolescents working in jobs that diminish school performance were more likely to be arrested and showed higher rates of school-related deviance and greater alcohol use in their senior year of high school. In particular, higher rates of drinking resulted when young workers could not balance work and school as the number of hours worked intensified.

We found support for several aspects of the harmful proposition, that adult-like work conditions increase adolescent delinquency. Precocious development and social control theories were especially well supported. Adolescents in more adult-like work settings, with higher social status, wages, and autonomy, exhibited higher rates of school deviance, alcohol use, and arrest, net of the hours the adolescent actually worked. In contrast, work that was more age appropriate and allowed adolescents to balance their work and school roles reduced alcohol use, even when the number of hours worked intensified. Finally, these results are also consistent with hypotheses drawn from power-control theory, showing that autonomous work increases delinquency by expanding adolescents' freedoms and diminishing the social controls to which they are subject.

#### *The Ideal Adolescent Job?*

Returning to the discussion of "job quality" that motivated our study, we believe that job conditions are likely to exert very different effects in adolescence and adulthood. To reduce delinquency, "good jobs" in adolescence must support rather than displace academic roles and offer genuine opportunities to learn something useful. Such jobs should also provide extensive controls, with circumscribed levels of autonomy, wages, and status among peers. Which specific job titles best exemplify these characteristics? In attempting to identify harmful work experiences, we found the highest wages, autonomy, and work-derived status in jobs such as sales associates and guitar teachers.

In identifying beneficial work experiences, we found the greatest compatibility between work and school roles and the best opportunities to learn new skills in jobs such as office clerks and museum ushers. Such work environments are likely to be organized against delinquent activity and are unlikely to place youth in association with delinquent coworkers (Wright and Cullen

2000). Jobs offering learning opportunities and support for school are “high-quality jobs” in another, perhaps more important, sense of the word. These jobs may also provide “forward movement on the vocational trajectory” (Mortimer and Shanahan 1994:379) that could yield high wages, status, and authority positions in adulthood.

Of course, adolescents who become guitar teachers may have already been more delinquent than those who select themselves into positions as museum ushers. Moreover, the museum ushers’ friends may be more favorably impressed by academic excellence than by occupational standing, so the museum jobs (or any jobs for that matter) will have comparatively small effects on peer status. Nevertheless, our analysis is important because it shows that job attributes increase or decrease future delinquency even after statistically controlling for prior delinquency, the number of hours worked, and self-selection processes. The longitudinal design of this study and the controls for prior delinquent behaviors provide important advantages over cross-sectional designs (Schulenberg and Bachman 1993; Wright and Cullen 2000) for drawing inferences about the relationship between work conditions and deviance. Furthermore, estimating the effects of job characteristics on a range of deviant outcomes, as well as exploring self-selection processes, provides some evidence for the robustness of the adolescent work effects.

In sum, we find that many work experiences that are expected to decrease arrest, recidivism, and substance use in adults (such as high job autonomy, wages, and social status) actually increase delinquency in adolescence. When adolescent employment is assessed by adult conceptions of job quality, the fruits of good work thus appear to be bitter. Yet a good job in adolescence is much different than a good job in adulthood, and this research points to several work qualities that reduce delinquency. We find that work providing more age-appropriate benefits to adolescents, such as learning opportunities and compatibility with educational roles, reduces adolescent school problems, drinking, and arrest. This pattern of results implies that the effects of specific work dimensions on crime and delinquency are conditional on the life course stage of the worker, particularly when viewed against the backdrop of extant research on adults (Sampson and Laub 1993; Uggen 1999). It also suggests that correctional efforts designed to reduce crime among young offenders should match employment opportunities to the ages of the workers. We therefore propose that future investigations identify the particular life

course stage when the effects of wages, status, and autonomy reverse course and begin to reduce rather than increase crime and deviance.

**APPENDIX A**  
**Alternative Specifications: Work Effects with Sample Selection**

<i>Predictor</i>	<i>12th-Grade School Deviance (log)</i>	<i>12th-Grade Alcohol Use (log)</i>	<i>Arrest (12th grade and one year after)</i>
	b (SE)	b (SE)	b (SE)
Number of hours worked	.008 (.004)**	.010 (.007)	.009 (.018)
Work dimensions (grades 10 to 12)			
Learning opportunities	-.011 (.008)	-.026 (.017)	.005 (.047)
Autonomy	.041 (.015)***	.076 (.032)**	.117 (.079)
Work and grades	-.161 (.044)†	-.264 (.091)***	-.477 (.240)**
Work stressors	.000 (.006)	-.006 (.012)	-.006 (.029)
Peer-derived work status	.054 (.032)*	.143 (.068)**	.062 (.185)
Wage rate	-.008 (.024)	.004 (.049)	.224 (.127)*
Prior deviance			
9th-grade alcohol use (log)	.004 (.033)	.219 (.095)**	-.087 (.155)
9th-grade smoking (log)	-.015 (.039)	.123 (.113)	.201 (.166)
9th-grade deviance (log)	.312 (.044)†	.201 (.129)	.561 (.211)***
Arrest before age 14	-.546 (.186)***	-.446 (.500)	-.660 (.857)
Background variables			
9th-grade GPA	-.097 (.056)*	-.229 (.163)	-.098 (.218)
Male (vs. female)	.267 (.080)†	.340 (.230)	.590 (.270)**
White race (vs. non-White)	.101 (.066)	.200 (.196)	-.384 (.291)
Socioeconomic status	.012 (.018)	-.012 (.052)	-.132 (.116)
λ (selection to work)	-.286 (.428)	1.910 (1.261)	
ρ (selection to work)			-.019 (11.795)
Constant	.614 (.387)	-1.950 (1.016)*	-2.443 (1.334)
<i>n</i>	526	538	470
<i>R</i> <sup>2</sup>		.251	.212
Log likelihood			-106.04

NOTE: GPA = grade point average.  
 \**p* < .10. \*\**p* < .05. \*\*\**p* < .01. †*p* < .001.

**APPENDIX B**  
**Intercorrelation of Deviance, Work Dimensions, and Other Characteristics**

	<i>12th-Grade Deviance</i>			<i>Work Dimensions</i>						<i>Other Characteristics</i>				<i>9th-Grade Deviance</i>					
	<i>School</i>	<i>Arrest</i>	<i>Drink</i>	<i>Wage</i>	<i>Learn</i>	<i>Grade</i>	<i>Status</i>	<i>Stress</i>	<i>Auto</i>	<i>Hour</i>	<i>Race</i>	<i>Male</i>	<i>GPA</i>	<i>SES</i>	<i>School</i>	<i>Drink</i>	<i>Smoke</i>	<i>Arrest</i>	
12th-grade school deviance	1.000																		
12th-grade arrest	<b>.094</b>	1.000																	
12th-grade alcohol use	<b>.290</b>	<b>.163</b>	1.000																
Wage rate	<b>.078</b>	<b>.093</b>	.042	1.000															
Work/learning	-.013	.041	-.021	<b>.085</b>	1.000														
Work/grades	<b>-.105</b>	<b>-.100</b>	<b>-.093</b>	-.020	.100	1.000													
Work/status	<b>.205</b>	<b>.089</b>	<b>.173</b>	<b>.171</b>	<b>.225</b>	.008	1.000												
Work stress	<b>.167</b>	.023	<b>.094</b>	<b>.123</b>	<b>.124</b>	<b>-.201</b>	<b>.236</b>	1.000											
Work autonomy	<b>.078</b>	<b>.090</b>	.073	.012	<b>.292</b>	<b>.108</b>	<b>.106</b>	<b>-.153</b>	1.000										
Number of hours worked	<b>.208</b>	<b>.080</b>	<b>.183</b>	<b>.098</b>	<b>.107</b>	-.048	<b>.233</b>	<b>.303</b>	-.023	1.000									
White race	.027	-.026	<b>.130</b>	-.045	-.050	.053	-.074	-.040	.005	-.062	1.000								
Male	<b>.254</b>	<b>.102</b>	<b>.118</b>	<b>.201</b>	<b>-.090</b>	<b>-.102</b>	<b>.254</b>	<b>.247</b>	-.013	<b>.178</b>	.001	1.000							
GPA	<b>-.247</b>	<b>-.144</b>	<b>-.189</b>	-.012	-.056	-.037	<b>-.208</b>	<b>-.146</b>	-.048	<b>-.307</b>	<b>.069</b>	<b>-.085</b>	1.000						
SES	<b>-.079</b>	<b>-.084</b>	-.030	-.010	-.020	.011	<b>-.196</b>	<b>-.140</b>	<b>-.099</b>	<b>-.316</b>	<b>.208</b>	-.036	<b>.317</b>	1.000					
9th-grade school deviance	<b>.360</b>	<b>.167</b>	<b>.245</b>	<b>.110</b>	-.034	.057	<b>.172</b>	<b>.155</b>	.031	<b>.265</b>	-.040	<b>.077</b>	<b>-.446</b>	<b>-.195</b>	1.000				
9th-grade alcohol use	<b>.142</b>	.041	<b>.285</b>	.052	.013	.061	.021	.070	-.004	<b>.138</b>	<b>.108</b>	-.016	<b>-.194</b>	.016	<b>.326</b>	1.000			
9th-grade smoking	<b>.074</b>	<b>.073</b>	<b>.243</b>	.003	.020	.072	.037	<b>.082</b>	.037	<b>.174</b>	<b>.115</b>	<b>-.087</b>	<b>-.347</b>	-.052	<b>.337</b>	<b>.493</b>	1.000		
9th-grade arrest	<b>-.074</b>	<b>.143</b>	<b>.087</b>	.037	.036	.010	<b>.108</b>	<b>.083</b>	.001	<b>.130</b>	.034	<b>.089</b>	<b>-.156</b>	<b>-.059</b>	<b>.169</b>	<b>.139</b>	<b>.112</b>	1.000	

NOTE: GPA = grade point average. SES = socioeconomic status. Correlations are in boldface type ( $p < .05$ ).

### NOTES

1. Unlike the alcohol use and school deviance indicators, arrest measures were taken from a life events calendar completed in 1995. Approximately 50 cases were lost to attrition in our arrest models compared to the alcohol and school deviance models. Because of potential difficulties in recalling the timing of events such as arrests, we modeled arrest in several different ways to ensure the robustness of work effects. In addition to the analysis of 12th-grade arrest, we also considered arrests during 12th grade and the following year (in Appendix A), as well as a dichotomous indicator for any arrest prior to age 27 (not shown, available from the authors). Regardless of the specification of the arrest outcome, the effects of work dimensions on arrest were substantively similar to those reported in Table 6. Unfortunately, no other contemporaneous delinquency measures were available during the high school period.

2. The small proportion of early arrestees and the dichotomous arrest outcome suggest that a lagged dependent variable model based solely on arrests is unlikely to capture preexisting deviant propensities. We nevertheless retained arrest in the analysis as an important indicator of official delinquency. As a test of the robustness of the results, we also considered models that pooled arrests over two- and eight-year periods, increasing the proportion of arrestees substantially. We also include lagged versions for all three of the outcomes (school deviance, alcohol use, arrest, and smoking) in each of the multivariate models.

3. The sample sizes in these equations varied from 613 to 675 cases. When respondents reported working but did not complete the work information section of the survey, they were interviewed by telephone to determine their current job titles, pay, and number of hours worked. Unfortunately, respondents were not asked during the phone follow-up interviews to describe work dimensions such as autonomy, status, learning opportunities, stressors, and compatibility with school if they did not enter this information on the written survey. Therefore, we have somewhat more information on the hours and pay of the adolescents' jobs and somewhat less on other work conditions. About 3 percent of the cases were missing data on school variables because the adolescents were working but not attending school at the time of the survey administration.

4. The effect of early school deviance on work-derived peer status is particularly intriguing, perhaps signaling a bifurcation of the sample into a proschool group that derives status from academic attainment and an antischool group that derives status from employment (we thank an anonymous reviewer for this interpretation).

5. We extended the arrest outcome to encompass 12th grade and the year immediately following because there were too few 12th-grade arrests to obtain stable estimates for this procedure.

6. The results of the bivariate probit procedure suggested that autonomy was no longer a significant predictor of arrest, although the effects of work-school compatibility and wages were similar to those observed in the unadjusted models. However, we place greater confidence in the uncorrected probit results than in the bivariate probit model with selectivity correction. Although the work quality effects were robust under the latter specification, we were unable to obtain stable estimates in models that include ninth grade deviance and race in the selection equation.

7. Selection models are predicated on accurately characterizing the process of selection into work. Our selection-to-work equation included gender, race, grade point average, ninth grade deviance items (arrest, school deviance, drinking, and smoking), family income, and parents' education (tables available from the authors). Unfortunately, we lacked precise measures of impulsivity, attention deficit, physical size, athletic ability, and family stability, all of which may affect both the decision to work and delinquency. Although the selectivity models offered support for the robustness of observed work effects, they therefore could not provide definitive evidence of causality.

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