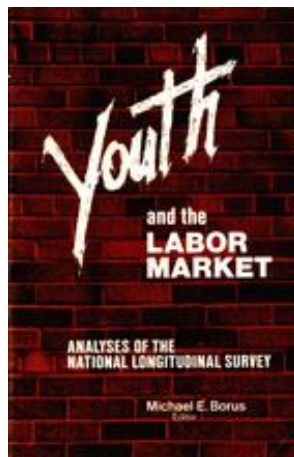

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Delinquency and Employment

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*National Longitudinal Surveys of Labor
Market Experience*



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Chapter 8

Delinquency and Employment

Substitutions or Spurious Associations

Joan E. Crowley

Few would quarrel with the proposition that delinquency and employment are related. After all, if youths can obtain money on the streets, why should they put up with the hassles of the types of entry level jobs available to them? Conversely, why should an employer put up with a difficult adolescent when there are so many law-abiding ones to choose from? Actually measuring the relationship between delinquency and employment, however, is a challenging task. The 1980 National Longitudinal Survey of Youth Labor Market Experience (NLS) included newly developed instruments to gauge both criminal behavior and the extent of involvement of youth with the criminal justice system. The NLS now includes the largest nationally representative sample survey of delinquent behavior available in the published literature.

The first goal of this chapter is to present the picture of crime and delinquency in the youth population which emerges from the distributions of the NLS data. The second goal is to find out whether and to what extent delinquent activity directly reduces labor force participation by providing substitute income and other rewards (e.g., social status)

when factors known to be causally associated with both types of behavior are taken into account.

I. Measuring Delinquency

Traditional criminology has separated crime from delinquency according to the age of the offender: offenses committed by legal minors are delinquency; offenses committed by legal adults are crime. The NLS second wave youth cohort, ranging in age from 15 to 23, crosses these age boundaries. Because 15 appears to be the peak age for delinquent activity (Berger, et al. 1975; Ageton and Elliott 1978), the NLS sample is quite old relative to the subjects of most delinquency studies. This paper will continue to refer to delinquent behavior, but readers must keep in mind that a large proportion of the respondents are legally adults.

It is important to distinguish between participation in delinquent or criminal behavior and the consequence of being caught and officially processed as a delinquent or a criminal. Some criminologists argue that official processing as delinquent or criminal tends to lock people into criminal behavior (Farrington 1977). The criminal justice system itself has been labeled a training ground for criminal behavior, as apprentice thieves learn from more experienced "colleagues." Similarly, being "bad" enough to get oneself thrown out of school could have longer range consequences than would less public versions of misbehavior. Potential employers may ask whether an applicant has a police record and use this information to deny employment to ex-convicts, but criminal behavior which has not led to a conviction would not have such public consequences.

Delinquent Behavior¹

The measurement of delinquent behavior in a nationally representative sample such as that used by the NLS is a

relatively rare phenomenon. Most studies of delinquency have been done on small and specially selected groups, with measures tailored to the specific research focus. A new index had to be developed that would suit the NLS interview setting and that would avoid some of the problems identified in the use of earlier delinquency measures.² The items used in the delinquency scale are shown in table 8.1. The first three items, running away from home, truancy, and drinking alcohol describe status offenses, i.e., behaviors forbidden only to minors, and were asked only for youths under the age of 18.

Because simply asking the precise number of times the respondent had participated in a prohibited activity was not feasible, respondents selected categories to indicate the range of their frequency of participation in various activities. The responses cannot be interpreted as absolute frequencies of activity; they should instead be interpreted as scale scores, with a higher score indicating a higher level of participation in delinquent activity.

The items in the NLS self-reported delinquency instrument were analyzed for empirical typologies, using factor and cluster techniques.³ Excluding the status items, three groups of offenses emerged: property crime, drug use and sale, and assault. Probably because many youths reporting sale of marijuana are selling small quantities to their friends, this item fits in best with drug use. Sales of drugs other than marijuana, however, seem much more profit-oriented and associated with serious property crimes. Robbery fits both into property and assaultive clusters. Table 8.1 shows the items included in each offense classification.

The proportion of youths participating in a particular offense declines as offenses become more serious: use of "soft" drugs, fighting, and petty theft are relatively common, but grand theft, selling hard drugs, and aggravated assault are relatively rare, both in terms of proportion of the

Table 8.1
Self-Reported Delinquency Items and Summary Subscales by Sex

Abbreviated title	Item ^a	Female		Male		Ratio of means Male/Female
		Mean	% zero	Mean	% zero	
1. Runaway ^s	Run away from home? ^b	.20	90	.22	91	1.1
2. Truant ^s	Skipped a full day of school without a real excuse?	3.11	56	4.49	51	1.4
3. Drinking ^s	Drank beer, wine or liquor without your parents' permission?	8.56	37	12.00	31	1.4
4. Fighting ^v	Gotten into a physical fight at school or work? ^c	.30	88	1.67	61	5.6
5. Robbery ^v	Used force or strong arm methods to get money or things from a person?	.08	98	.36	92	4.5
6. Assault ^v	Hit or seriously threatened to hit someone?	1.21	74	2.49	52	2.1
7. Aggravated assault ^v	Attacked someone with the idea of seriously hurting or killing them?	.18	94	.76	86	4.2
8. Using marijuana ^d	Smoked marijuana or hashish (pot, grass, hash)?	9.38	54	13.09	49	1.4
9. Using hard drugs ^d	Used any drugs or chemicals to get high or for kicks, except marijuana?	2.05	80	2.92	77	1.4
10. Selling marijuana ^d	Sold marijuana or hashish?	.62	93	2.05	84	3.3
11. Selling hard drugs ^d	Sold hard drugs such as heroin, LSD, cocaine (total number of all hard drug sales)?	.12	99	.45	97	3.8
12. Vandalism ^p	Purposely damaged or destroyed property that did not belong to you?	.22	90	1.28	71	5.8
13. Shoplifting ^p	Taken something from a store without paying for it?	.85	76	1.46	70	1.7

14. Petty theft ^P	Other than from a store, taken something not belonging to you worth under \$50.00?	.40	86	1.11	73	2.8
15. Grand theft ^P	Other than from a store, taken something not belonging to you worth \$50.00 or more?	.03	99	.43	92	14.3
16. Fraud ^P	Tried to get something by lying to a person about what you would do for him, that is, tried to con someone?	.78	82	1.44	75	1.8
17. Breaking & entering ^D	Broken into a building or vehicle to steal something or just to look around?	.03	98	.50	89	16.7
18. Fencing ^P	Knowingly sold or held stolen goods?	.17	95	.82	82	4.8
19. Auto theft	Taken a vehicle for a ride or drive without the owner's permission?	.16	95	.44	89	2.8
20. Gambling	Helped in a gambling operation, like running numbers or policy or books?	.05	99	.38	96	7.6
SUBSCALES						
Status ^e		11.86	27	16.75	23	1.4
Violence ^f		1.76	68	5.29	40	3.01
Drugs ^f		12.15	53	18.51	47	1.52
Property ^f		2.47	57	7.01	41	2.84

a. Response categories were never, once, twice, 3-5 times, 6-10 times, more than 50.

b. Items 1-3 are status offenses, only illegal for minors. UNIVERSE: Civilians age 15-17 on interview date (N=11,200,000).

c. Items 4-20 were asked of the total sample. UNIVERSE: Civilians age 15-23 on interview date (N=31,600,000).

e. UNIVERSE: Civilians age 15-17 as of the interview date who responded to all items on the questionnaire (N=11,200,000).

f. UNIVERSE: Civilians age 15-23 as of the interview date who responded to all items on the questionnaire (N=30,800,000).

d. Item included in drugs subscale.

p. Item included in property subscale.

s. Item included in status subscale.

v. Item included in violence subscale.

population ever participating in the activity and in the mean levels of involvement. Creating summary scales using simple sums could result in a youth who has committed five armed robberies being counted as less delinquent than a youth who admits to ten petty thefts, clearly a distortion of the desired result. A scaling procedure was used which resulted in all items contributing approximately equally to their appropriate scales, regardless of overall frequency, effectively weighting each item by its seriousness (Crowley 1982).

Table 8.1 shows the distributions of the self-reported delinquency items by sex,⁴ showing both the percent of respondents who denied participation in the activity within the previous year and the mean level of involvement with the activity. The distributions of the involvement scores (not presented here) show that most youths have either never participated in the activity or have participated only a few times. The only exceptions to this pattern are use of marijuana or alcohol: the frequency distributions for use of these drugs show that youths tend to report either very low levels of use, once or twice, suggesting experimentation, or very high levels, suggesting habitual use.

Among minors, truancy and drinking are fairly common occurrences, and almost half of the total sample reported using marijuana or its derivatives. For both males and females, assault was the second most common nonstatus (illegal regardless of perpetrator's age) offense; half the young men and a quarter of the young women reported at least one incident.

Most young people report participation in some sort of delinquent activity; about half of the population under eighteen is estimated to have committed at least one status offense, and a full three-quarters of youth have committed at least one adult offense. Consistent with the mean scores for the individual items, the summary scale means show that drug use tends to have the highest levels of involvement.

Large differences appear between young men and young women in the levels of delinquency (table 8.1, last column). For the status offenses and for less serious offenses, the ratios of involvement between males and females are fairly low, but they are much higher for offenses involving substantial violence or relatively large sums of money. For most offenses, not only are young men more likely to participate in delinquent activities, but they are also more likely to participate more often than do young women.

Because the difference in crime rates between the sexes is a universal pattern in criminology, all the remaining data are presented separately by sex. Other key demographic patterns to be explored include distributions by age (where adults are defined as being 18 and older and minors are younger than 18), ethnicity, poverty status, and enrollment status.

Demographics of Self-Reported Illegal Behavior

Previous studies have indicated that delinquent activity declines after age 15. The NLS data support this pattern, with the exception of items on drug use. Adults (respondents over the age of eighteen) are about a third less involved in nondrug illegal activities than are minors. For drug use, on the other hand, adults actually report higher use levels than their younger counterparts.

There is a popular image of delinquents as youth from homes impoverished both financially and emotionally. The NLS joins a growing body of work seriously questioning this image.⁵ Table 8.2, which breaks down the delinquency items by race, poverty, school enrollment, and sex, shows a higher involvement of whites in delinquent activity than blacks. Certainly the whites, both male and female, report higher levels of involvement with status offenses than do either blacks or Hispanics. This pattern is largely due to the much higher reports of alcohol use by whites. Indeed, whites

Table 8.2
Mean Response for Delinquency Scales
by Sex, Race, Poverty, and School Enrollment Status

	Female				Male			
	Status ^a	Violence ^b	Drugs ^b	Property ^b	Status ^a	Violence ^b	Drugs ^b	Property ^b
Race								
Black	4.47	2.48	7.87	2.64	8.02	5.10	12.02	6.18
Hispanic	9.72	1.33	6.60	1.91	13.29	4.46	11.60	6.63
White	13.30	1.67	13.45	2.49	18.57	5.38	20.09	7.18
Poverty Status								
Nonpoverty	12.38	1.62	12.34	2.44	17.42	5.29	18.67	7.30
Poverty	8.84	2.56	10.87	2.74	13.60	5.03	15.05	6.15
School Enrollment Status								
High school dropout	18.53	2.37	16.67	2.72	31.50	8.54	30.28	11.65
High school student	11.19	2.35	9.10	2.93	15.26	6.20	11.88	7.73
College student	13.42	.88	12.29	2.02	33.44	2.61	16.65	3.69
Nonenrolled high school graduate	23.80	1.41	13.78	2.17	48.54	4.27	23.47	6.10

a. UNIVERSE: Civilians are 15-17 as of the interview date who responded to all items on the questionnaire.

b. UNIVERSE: Civilians are 15-23 as of the interview date who responded to all items on the questionnaire.

report much higher levels of drug use in general, including hard drugs, than do blacks or Hispanics.

Few major differences appear along ethnic lines when we look at the remaining offenses. Black females tend to be more likely than white or Hispanic females to report personal violence (fighting, assault). Among males, however, whites are more likely to report involvement in fights and assaults. Generally, for both sexes, Hispanics are either intermediate between blacks and whites, or the lowest of all groups in reported level of involvement in offenses.

It is clear, however, notwithstanding some potential for underrepresentation of the ratios of offenses between blacks and whites, that criminal offenses are not limited to any one race group.⁶ The few items on which black males report higher levels of involvement than do white males include three of the most serious offenses: grand theft, robbery, and aggravated assault. However, the data show a fairly high degree of involvement of all race-sex groups in various types of activities that would be punished if they became known.

Despite the popular assumptions about the link between poverty and delinquency, Table 8.2 shows that, generally, when there is a difference among males between the poor and the nonpoor (using the Current Population Survey definition of poverty), it is the nonpoor who are most delinquent. This pattern holds particularly true for the drinking and drug use items, no doubt reflecting the use of discretionary income for recreational chemicals. Males from nonpoor families are also more likely to report vandalism, shoplifting, assault, and fraud.

As usual, the pattern is much different for females. More affluent women, like their male counterparts, are more likely to report alcohol and drug use than are poor women. However, the only other offense reported substantially more frequently by nonpoor women is petty theft. Poor women

report more involvement with offenses involving personal violence—fighting, assault, and aggravated assault.

Poor youths, both male and female, report higher levels of running away and truancy. While any finding based on such simple analysis must be interpreted cautiously, the implication of greater disturbance in family relationships among poor youth may have significance for the perpetuation of poverty. Perhaps the most important observation to be made from this table is the lack of evidence for the assumption that poverty per se breeds crime.⁷

In contrast to the results for poverty, delinquent activity is clearly associated with enrollment status. Among males, dropouts report high levels of delinquent activity relative to students and high school graduates in each offense category. Like minors, they report high levels of violence against people and property. Like adults, they report high levels of drug use and of drug sales. Conversely, college students, youth grouped as the most successful academically, have the lowest levels of delinquent involvement.

Among females, differentiation by enrollment status is much less pronounced. Dropouts report higher levels of delinquent involvement than do students and graduates for 13 of the 20 offenses, which is still a majority but far from the consistent pattern for males. Although the NLS contradicts the popular view that race and poverty are strongly associated with delinquency, the results do support the popular view that those who do less well in school have higher levels of criminal involvement.

The sex difference in the relationship between illegal activities and enrollment status may be due to sex differences in the reasons for dropping out of school. For young women, dropping out is often due to family considerations, such as marriage or pregnancy. For young men, on the other hand, dropping out is more likely to reflect difficulties with school or with the adult authorities who control schools.

Illegal Income

The key link between crime and employment logically lies in the degree to which crime serves as an alternative source of income. Youth who can make a good living "on the street" should spend less time in the labor force and should have a higher reservation wage, *ceteris paribus*, than youth who are less adept at hustling.

It is clearly not reasonable to expect that thieves who have no accountability to the tax collector or anyone else will know with any accuracy how much they earn from their activities over any extensive period of time. However, we attempted to gauge subjectively the degree to which the youth looked to crime as a source of income by asking what fraction of their total support was derived from such activities as those described on the delinquency form. It should be noted in interpreting the results that the same amount of income represents a smaller proportion of support for affluent youth than for poor youth.

Most youth do not report a profit from their activities, but a substantial minority, slightly over 20 percent of the young men and 10 percent of the young women, get at least some of their support from "crime." About 1 male in 20 reports getting one-fourth or more of his support from such sources. The expected race and income difference exist but are fairly small, especially when the base levels of income are taken into account. As with the reports of delinquent behavior, the variables most consistently related to illegal income are sex and enrollment status. One-third of the male high school dropouts and one-fifth of the female dropouts get at least some income from crime. The group with the lowest frequency of illegal income of all categories investigated is, as expected, college students.

Reported Police Contacts

Delinquent activity may or may not lead to involvement with the police and with the courts. Table 8.3 shows the distributions of police and criminal justice involvement broken down by sex, poverty status, and race.⁸ The first row of the table shows the proportions of each group who report any contact with police. The remainder of the table refers to the proportions of those who report any contact and who further report various levels of involvement with the criminal justice system. This method allows comparisons of levels of involvement across groups independent of the proportion of each group who manage to stay completely out of the system.

Over a third of the young men report some police contact; the proportion for young women is closer to one-tenth. Of those who do come in contact with the police, the sex difference is much less pronounced; but even given an initial contact with police, young women are less likely than young men to be charged, convicted, placed on probation, or incarcerated. Females do report referral to counseling programs more often than males.

Some significant patterns emerge when the levels of involvement by poor and nonpoor youths are considered. There is no difference by income in frequency for males in being stopped by police without further processing, and poor females are actually somewhat less likely than more affluent females simply to be stopped by police. However, poor youth are consistently more likely to be formally charged, convicted, and put on probation or incarcerated than are nonpoor youth. In fact, the more serious the level of involvement with the criminal justice system, the more discrepant the rates by income status. Of those who come into contact with the police, about one-fifth of both poor and nonpoor males report being convicted of an offense, but poor males are almost three times as likely as nonpoor youth to report

Table 8.3
Incidence of Being Stopped, Charged or Convicted
by Sex, Poverty Status and Race

Seriousness	Female		Male		Female			Male		
	Non-poverty	Poverty	Non-poverty	Poverty	Black	Hispanic	White	Black	Hispanic	White
Percent of population	42	8	43	7	7	3	40	7	3	40
Stopped, charged or convicted ^a	10	14	33	37	8	13	11	36	36	34
Among those ever stopped, charged or convicted ^b										
Stopped	79	70	82	82	79	78	76	81	83	82
Charged	31	47	41	53	31	35	36	41	49	45
Charged as adult	12	16	19	21	14	12	13	19	20	22
Convicted	15	23	23	32	10	19	18	22	25	26
Convicted as adult	6	8	12	15	*	9	7	12	11	13
Counseling	27	31	20	25	23	24	29	16	19	22
Probation	13	17	23	36	15	11	14	28	26	26
Incarcerated	5	7	7	19	*	*	6	12	13	9
Incarcerated as youth	4	7	4	12	*	*	5	7	7	5
Incarcerated as adult	*	0	4	9	*	0	*	8	7	5

*Percentage is 0.1-0.5.

a. UNIVERSE: Civilians age 15-23 on interview date.

b. UNIVERSE: Civilians age 15-23 on interview date who reported ever being stopped, charged, or convicted.

incarceration. The pattern for females is similar, although less dramatic. These results contrast sharply with the greater involvement with delinquent behavior reported by nonpoor youth.

Table 8.3 also presents criminal justice involvement broken down by race and shows a pattern subtly similar to the one shown for income: while black youth are actually less likely than whites to be charged with offenses or convicted, blacks are more likely to be put on probation or incarcerated. Interpretation of these results must be extremely cautious at this time, since there is no control for the type of offense with which individuals are charged, and type of offense is the single major determinant of sentence severity. Among the young men in the sample, major traffic offenses, vandalism, and possession of marijuana were mentioned more frequently by whites than by blacks, but blacks were more likely to report a conviction for assault or robbery. The direction if not the magnitude of these differences in conviction rates by race are echoed in the frequency of report of the individual offenses on the delinquent behavior measure.

Out-of-school youths, particularly dropouts, have the highest levels of involvement: over half of the male dropouts have come in contact with the police. Of these, two-fifths report a conviction for an offense, and one-quarter report a conviction as an adult. Probation and incarceration are also fairly common among dropouts. Perhaps the most useful group for comparison with the dropouts is nonenrolled high school graduates.⁹ The same sort of increasing differentiation of level of involvement with the criminal justice system appears as was noted for poverty. Among males with police contact, there is a moderate difference between high school dropouts and high school graduates in the percent charged with an offense—two-thirds of the dropouts compared with half of the high school graduates. Dropouts are, however, almost four times as likely to be incarcerated as are high school graduates, and are over seven times more likely to

report being incarcerated in juvenile institutions. The patterns are quite similar for females, allowing for their generally lower level both of initial contact and of serious involvement following contact.

The results for poverty and enrollment status, which are quite consistent with the general image of youths in the criminal justice system, encourage confidence in the validity of the responses to the interview. This very consistency, however, raises questions of inequity in view of the lack of relationship between poverty and delinquent behavior as reported by the youth.

The results for poverty and race support the observation that poor and minority youth face an accumulation of disadvantage when they enter the criminal justice system (McNeeley and Pope 1981). At each stage where discretionary decisions are to be made, there is a tendency for youths from poorer backgrounds to be treated more harshly than youths from white or middle class homes. The differences at each stage are slight, but the cumulative effect is that at the most severe level of punishment—incarceration—blacks, Hispanics, and the poor are concentrated beyond their proportions in reported criminal behavior. To the extent that the general population uses the publicized descriptions of the incarcerated population to form their concepts of the attributes of the minority and poor members of society, this distorted image will affect the perpetuation of disadvantage in society at large.

II. Crime and Work

Traditionally, delinquency has been primarily the province of sociologists. Recently, however, economists have expanded their area of concern to include time allocation to illegal as well as legal sources of income. The next section will attempt to synthesize and distinguish the insights of these two fields in conceptualizing the link between delinquency and employment.

The analysis is presented in the three following sections, based on the design of the NLS research. First, a cross-sectional analysis is offered describing the patterns of delinquent activity reported by NLS respondents and presenting first-order correlations between measures of delinquency and measures of employment. A 2-wave analysis follows, presenting a fairly standard multiple regression approach to estimating the relationship between employment and crime, net of other factors known to be associated with each. Finally, a path analysis is presented using three waves of the NLS. The third analysis attempts both to build on the results of the cross-sectional and 2-wave analyses and to take advantage of the structure of the panel study to untangle the reciprocal effects of employment and crime.

Theories of Delinquency

Economic approaches to crime regard each individual as trying to maximize utilities from legal and illegal activities. The emphasis is on the choice of activities based on rational calculations. The greater the rate of return to illegal activities as compared to the returns from legal activities, the greater the time allocated to crime. Of course, crime involves expected costs, in the form of possible arrests, fines, and convictions, which are not attached to legitimate employment. Some of these costs have been entered into models of criminal behavior, in the form of arrest and conviction rates.¹⁰ The analogous costs of legitimate employment in reduction of leisure time and autonomy are not considered explicitly. The usual human capital indicators, education and work history, are predicted to be related to crime because they determine the returns to employment. Conditions that are expected to lead to higher levels of criminal activity include low expected wages, high rates of unemployment, low probability of arrests and other legal sanctions, and “tastes” for the nonpecuniary rewards of crime—risk taking, for example.

It is assumed in the economic analysis of crime that the more time is allocated to crime, the less is allocated to employment, and vice versa. What is not considered explicitly is the fact that most delinquent or criminal activity involves a very brief time commitment (Hirschi 1969). Time spent in criminal activity may substitute for other leisure activities, rather than for time in the labor force.

The sociological approach presented in the literature on social control also assumes that people are essentially hedonistic and rational. However, the factors considered in evaluating the costs and benefits of a particular course of action are defined in terms of the emotional bonds of individuals to important people in their lives—parents, peers, spouses, children—and to conventionally valued goals—occupational advancement, marriage, respectability. Illegal activities threaten attachment bonds and chances of obtaining conventional goals, and so these bonds and goals help to control hedonistic behavior (c.f., Hirschi 1969; Hindelang 1973; Minor 1977).

Although economic approaches describe rational calculations of utilities and the control approach focuses on the emotional bonds of youths to other people, aspirations, and institutions, closer inspection shows that they make virtually identical predictions about the way that various experiences of youths may affect delinquency. Both, for example, stress the role of education. For economists, education is a major part of human capital accumulation. For sociologists, commitment to educational goals and attachment to the individuals and institutions associated with school are threatened by delinquent behavior. In fact, the relationship between school performance and delinquency is solidly established (Noblit 1976; Gold and Mann 1972).

Employment itself fits into control theory as a source of attachments to co-workers and commitment to job advancement, both of which should reduce the level of criminal ac-

tivity. This factor is independent of the substitution of time allocation that is central to economic formulations. Conversely, control theory can be used as a framework for specifying the predicted costs of criminal activity. Neither economic theory nor control theory, however, is particularly useful for specifying nonpecuniary benefits associated with various types of crime.

Use of three measures of illegal activities allows refining of the hypotheses about the links between employment and crime. The economic model, where returns to illegal activities are balanced against returns to employment, applies conceptually to crimes against property—chiefly the various forms of theft. Therefore, we expect that, for adults at least, property crime will be related to lower levels of weeks worked and longer periods of unemployment and nonparticipation in the labor force.

Violence has been related to labor force participation in two ways. Unemployment has been associated in particular with violence within the family, e.g., wife abuse and child abuse (Monahan and Klassen 1982). Bachman (1978) found that men who were high in violent behavior tended to have poorer work histories in terms of sporadic and low status jobs. These two findings imply different causal directions—unemployment may lead to violence and violent behavior may lead to employment instability.

On the other hand, we expect drugs to be more commonly used by those with reliable sources of income, and thus positively associated with employment. The high frequency of drug use reported in the sample indicates that most of the users are not the junkies of skid row, but rather are people who use drugs as a part of rather ordinary life. The effect of income in facilitating drug purchase should lead to a net positive association between drug use and weeks worked, and a corresponding negative association with unemployment.

Reservation wage, a subjective judgment rather than a behavioral measure subject to constraints outside the control of the individual, may provide some differentiation in the effects of criminal activity on employment. If crime provides income, the marginal value of wages should be reduced, so that a higher wage would be required before the individual will accept a job. There is no clear reason that nonincome producing types of crime would have the same effect, although it could be argued that the expense of maintaining a drug habit would also increase the reservation wage.

Measures of Employment and First Order Relationships

Several employment-related measures are explored, the primary focus resting on the supply of labor. The NLS data base includes measures of the proportion of weeks worked, weeks unemployed, and weeks out of the labor force (OLF), between January 1978 and the 1981 interview. These allow continuous measures of the amount of labor provided by the respondent in the periods before, during, and after the period for which delinquent activity is measured.

The analysis includes reservation wage—the wage at which an unemployed person would accept a job—in part because it is not restricted by external constraints. The logic of the connection between crime and work is similar for reservation wage and weeks unemployed. The higher the income and other returns derived from criminal behavior, the higher the reservation wages.

Table 8.4 shows the first-order correlations between employment and crime for each of two designated universes. The first is restricted to high school youth over the age of 16. The age restriction reflects legal age restrictions on employment. The second universe is nonenrolled youth over the age of 18.¹¹ College students are omitted from the adult group because they are not expected to be primarily oriented towards employment. Dropouts under the age of 18, while

Table 8.4
Correlations Between Delinquency Scales and Employment Indicators^a

Employment variable	Females				Males			
	Violence	Drugs	Property	Illegal income	Violence	Drugs	Property	Illegal income
High school students ^b								
Weeks worked	-.02*	.13**	.04**	.02	.01	.05**	.04*	.01
Weeks unemployed	.02†	.09**	.05*	.09**	.05	.05	.04	.04
Weeks OLF	.02*	-.16**	-.06**	-.04*	-.01	-.07**	-.04†	-.02
Reservation wage	.10*	.09	-.04	.03	.05	-.02	-.00	.02
Nonenrolled adults ^c								
Weeks worked	-.07**	.05	.02	-.07**	-.08*	-.02	-.07*	-.17**
Weeks unemployed	.07*	.04	.04*	.08**	.10*	.03	.05†	.10**
Weeks OLF	.04**	-.04**	-.02*	.06**	.02	.03	.05	.05**
Reservation wage	.01	.03	.04	.01	-.01	.01	.05	.05

a. Coefficients for weighted data. Significance estimated without weights.

b. UNIVERSE: High school students 16 years and older.

c. UNIVERSE: Nonenrolled civilians, 18-22 years old.

†p .10.

*p .05

**p .01.

presenting major problems for law enforcement, are excluded from the analysis to avoid confounding age with school completion. Within each of these major universes, all analyses are run separately by sex.

Predictions are weakly supported, if at all. What is not expected is the greater consistency and magnitude of the correlations for young women than for young men. For three of the four sex-status groups, drugs tend to be positively associated with weeks employed and negatively related to being OLF, which tends to confirm the association between drug use and disposable income. Also as predicted, violent behavior tends to be negatively associated with weeks employed, although the relationship is very weak for young men. As with drugs, youths reporting higher levels of property crime tend to report more weeks employed or unemployed, and correspondingly fewer weeks out of the labor force. Only among adult males are higher levels of property crime associated with fewer weeks worked. Illegal income has the predicted negative association with weeks worked only for adults.

These seemingly contradictory findings make some sense for high school youths in a context of role expectations. Students, particularly girls, who spend more time out of the labor force report less of all types of delinquent activity. The greater time delinquent youth spend in the labor market is consistent with the observations that delinquent youth tend to adopt adult behavior patterns earlier than their more law abiding contemporaries (Hirschi 1969). Among high school students, then, work and delinquent activity may both be ways of moving out of the dependent roles of child and student into more autonomous lives. For those who are past their school years, on the other hand, illegal income acts as would be predicted if crime competes with employment as a source of revenue. The expected negative relationship between violence and weeks worked is also clearer among adults.

Reservation wage, although intuitively appealing as a means of measuring willingness to work given illicit income, seems almost totally unrelated to criminal activity. The signs are inconsistent, and, with the exception of the correlation with violence for high school females, the coefficients are miniscule.¹²

Crime and Work: Regression Analysis

Predictions based on both sociological and economic considerations were used to develop a model of the relationship between employment and delinquency, predicting labor market outcomes as functions of human capital considerations, family background, current family roles and relationships, school experience and performance, and urban residence. Indicators of criminal behavior and of official crime records were then used to see if they contribute any explanatory power to the model once these background functions have been entered. Conversely, the model and the employment indicators were used to predict delinquent behavior. This is an admittedly crude style of analysis, but serves as a first approximation of the relationship between crime and employment net of their known correlates.

Separate models have developed for each of the two universes, students and adults. The estimators of human capital for high school students were age and weeks worked between January 1, 1978 and the initial interview date. Among students, age and educational level are highly collinear, so only one of these variables could be used. For the out of school sample, age and education are not as closely correlated, so both age and dummy variables for less than 12 years of education and more than 12 years were used, with high school graduates the comparison group.

The work history available on the NLS was divided into two sections: weeks worked in the period between January 1978 and the 1979 interview, and weeks worked in the period between the 1979 and 1980 interviews. Since the delinquency

scales covered the calendar year preceding the 1980 interview, the between-interview period provides a good estimate of the supply of labor that was concurrent with the delinquent activity. The first period is used as a measure of work history, and provides an indicator of work attachment that does not have the ambiguous causal relationship which potentially biases the estimated relationship between crime and work when they are measured over the same time span.

The NLS has a number of measures of the family environment in which the youth lived at age 14. Intactness of the family is based on whether the youth lived with both a father and a mother figure or in some other living situation.¹³ For youth under 18, that is, for the high school sample, the attachment to the family of origin was assessed by looking at whether the youth had run away from home in the past year.¹⁴

For the adults, dummy variables for marital status and whether the youth were living with their own children tapped the acquisition of adult family roles. The available evidence on the effect of marital status on crime is inconsistent. In studies of released offenders, those with continuing family ties, including marriages, are somewhat less likely to recidivate than are others (Monahan and Klassen 1982). On the other hand, Farrington (1982) reports little association between getting married and official arrest records or self-reported criminal behavior, although marriage did tend to reduce activities associated with crime, such as drinking and sexual promiscuity.

The human capital effects of schooling are usually measured as years of school completed. The quality of the school experience, on the other hand, has long been identified as a key factor in delinquent behavior.¹⁵ The NLS includes an assessment of satisfaction with various aspects of the school experience that was included in the analysis of the high school sample. The school discipline scale was coded zero if the respondent had never been suspended or expelled,

1 if the respondent had been suspended only, and 2 if the respondent had been expelled. Youth who had been both suspended and expelled were coded 2, as were any youth who reported expulsion without suspension.

Dummy variables for living in the central city of an SMSA and for living in other portions of an SMSA were introduced as controls. A measure of poverty status was used to indicate the marginal utility of the youth's own wages.

Multivariate Results: Delinquency

Three models were compared. The first, basic model, uses only the family and background variables plus work history. This model provides a baseline for looking at the relationship between current employment and current delinquency. The second model adds the proportion of weeks worked and the proportion of weeks unemployed, and the final model adds school discipline and police contact variables in an attempt to see if relationships between work and crime are mediated by official processing.¹⁶ Table 8.5 and 8.6 present the results for the final model for each of the delinquency indicators.

Overall, little evidence in the multivariate analysis supports the belief that employment reduces delinquent behavior. The control approach to delinquency, however, is upheld somewhat. In general, the variables associated with illegal activities tend to be measures of family or school ties. Ironically, given the general omission of girls and women from studies of crime and delinquency, many of the sociological factors presumed associated with delinquency are significant only for females: e.g., black women are more violent and report more involvement in property crime than those from other races. For both sexes, Hispanics generally report lower levels of involvement in proscribed activity than any other ethnic group.

Consistent with the hypothesis of lower levels of job commitment among students, the significant relationships with any of the three measures of employment (employment, unemployment or work history) tend to be among the adult population. For high school students, even the fairly weak relationships shown in the first-order correlations (table 8.4) do not hold up when background variables are controlled.

Multivariate Results: Labor Force Outcomes

Given the lack of relationship between the employment indexes and delinquency, it is hardly surprising that the delinquency indexes do not predict much variance in proportion of weeks employed or unemployed, using standard OLS for proportion of weeks employed and Tobit analysis to compensate for a relatively large number of cases with no weeks unemployed. The reservation wage analysis showed no significant results for either the simple or the augmented models, and so are not presented here. No cases bearing a significant relationship between self-reported offenses and any of the employment measures and no effects for official delinquency or illegal income for high school students appear.

Official responses to behavior and reliance on illegal income for a substantial portion of self-support do show some signs of association with employment for nonenrolled adults. For men, having been dismissed from school is associated with fewer weeks worked and more weeks unemployed, and this finding is net of the effect of dropping out, per se. Having been convicted is associated with fewer weeks worked for both sexes.¹⁷ Most important, illegal income, the most direct measure of the economic benefits of crime, is significantly associated with higher unemployment for both sexes and with fewer weeks worked for men.

Table 8.5
Analysis of Delinquent Behavior and Illegal Income: High School Students

Predictors	Females				Males			
	Violence	Drugs	Property	Illegal income	Violence	Drugs	Property	Illegal income
Age	-.105 (-0.60)	-.261 (-1.17)	-.099 (-0.55)	-.303 (-1.07)	-.079 (-0.70)	-.055 (-0.30)	.009 (.064)	-.010 (-0.06)
School satisfaction	-.036 (-1.08)	-.145** (-3.58)	-.152** (-4.44)	-.088† (-1.79)	-.014 (-0.61)	-.089 (-0.24)	-.082** (-2.89)	-.052 (-1.58)
Work history	-.003 (-0.76)	.004 (0.85)	-.001 (-0.34)	-.003 (-0.53)	.006* (2.28)	-.001 (-0.26)	.0003 (0.10)	-.005 (-1.22)
Run away from home	1.33** (2.84)	1.90** (3.29)	1.52 (3.05)	1.21† (1.90)	.676† (1.89)	.797 (1.37)	1.22** (2.79)	.105 (0.21)
Broken home	-.557* (2.10)	.565† (1.73)	-.143 (-0.52)	.004 (0.01)	-.032 (-0.18)	.309 (1.06)	-.119 (-0.53)	-.193 (-0.74)
Parent education	.495* (2.03)	.013 (0.04)	-.128 (-0.50)	-.131 (-0.35)	-.022 (-0.13)	-.841** (-2.92)	-5.28* (2.45)	.175 (0.69)
Poverty	-.108 (-0.40)	-.817* (-2.36)	-.145 (-0.51)	.508 (1.27)	-.204 (-1.08)	.190 (0.62)	-.585* (-2.51)	.252 (0.93)
Noncity SMSA	.109 (0.35)	.259 (0.64)	.178 (0.54)	.089 (0.18)	-.196 (-0.92)	-.423 (-1.22)	-.269 (-1.03)	.262 (0.87)
Central city SMSA	.337 (1.41)	.762* (2.56)	.544* (2.20)	.569 (1.58)	-.076 (-0.47)	.058 (0.22)	.039 (0.20)	.298 (1.23)
Black	1.19** (4.32)	-.971** (-2.78)	.499† (1.73)	.559 (1.34)	-.095 (-0.49)	-.172 (-0.55)	.100 (0.42)	.240 (0.87)
Hispanic	-.704* (-2.10)	-1.21** (-3.58)	-.265 (-0.88)	-.819 (-2.58)	-.656** (-2.10)	-.328 (-1.08)	.141 (0.46)	-.579† (-1.79)

School discipline	(-2.16) 1.35** (5.65)	(-3.03) 1.57** (5.14)	(-0.81) .660* (2.56)	(-1.53) 1.30** (3.97)	(-2.85) .819** (5.85)	(-0.88) 1.45** (6.57)	(0.51) .794** (4.71)	(-1.66) .939** (4.98)
Ever convicted	.742 (0.52)	2.63 (1.50)	-.159 (-0.10)	1.09 (0.61)	.704† (1.87)	1.12† (1.95)	.744 (1.63)	.623 (1.28)
Ever charged	.587 (0.48)	-.006 (-0.00)	1.82 (1.36)	-.079 (-0.05)	.380 (1.37)	1.29** (3.05)	.579 (1.71)	1.02** (2.84)
% weeks worked	.003 (0.87)	.007† (1.69)	.004 (1.03)	.012* (2.32)	-.0004 (-0.20)	.004 (1.15)	.003 (0.88)	.002 (0.62)
% weeks unemployed	.004 (0.48)	.009 (0.98)	.004 (0.45)	.008 (0.69)	.001 (0.33)	.002 (0.37)	.005 (1.06)	-.001 (-0.14)
Constant	1.58 (0.52)	7.04 (1.81)	4.80 (1.53)	4.08 (0.84)	2.70 (1.34)	2.60 (0.79)	2.70 (1.10)	.242 (0.08)
N	761	755	753	742	817	804	798	792
L (max)	-997.34	-1013.44	-1039.01	-367.50	-1352.44	-1194.60	-1328.51	-662.58

UNIVERSE: Civilians age 16-23 on interview date who were enrolled in high school.

Table 8.6
Analysis of Delinquent Behavior and Illegal Income: Nonenrolled Adults

Predictors	Females				Males			
	Violence	Drugs	Property	Illegal income	Violence	Drugs	Property	Illegal income
Constant	-.277 (-0.22)	3.06 (2.56)	2.81 (2.36)	-1.27 (-0.76)	4.87** (4.89)	1.11 (0.86)	4.89 (4.26)	2.50 (1.90)
Age	-.065 (-1.00)	-.136* (-2.26)	-.169** (-2.80)	-.064 (-0.75)	-.231** (-4.61)	-.004 (-0.61)	-.216** (-3.75)	-.166* (-2.51)
Dropout	.676** (3.02)	-.007 (-0.35)	.261 (1.22)	.055 (0.79)	-.238 (-1.54)	-.280 (-1.38)	-.439* (-2.42)	.367† (1.84)
More than 12 years education	-.930** (-3.53)	-.104 (-0.46)	-.306 (-1.33)	-.477 (-1.38)	-.132 (-0.61)	.443 (1.62)	.220 (0.91)	-.201 (-0.66)
Work history	.002 (0.80)	.002 (0.87)	.006* (2.11)	-.001 (-0.31)	-.002 (-1.02)	-.0004 (-0.15)	-.003 (-1.34)	-.001 (-0.33)
Broken home	.072 (0.36)	.182 (0.96)	.057 (0.30)	-.450 (-1.68)	-.042 (-0.27)	.127 (0.61)	.060 (0.33)	.064 (0.31)
Parent education	-.147 (-0.80)	-.413* (-2.38)	-.287† (-1.66)	.005 (0.02)	-.009 (-0.06)	-.589** (-3.20)	-.579** (-3.55)	-.103 (-0.56)
Spouse present	-.604** (-2.82)	-.777** (-3.95)	-.667** (-3.37)	-.360 (-1.28)	-.084 (-0.35)	-1.08** (-3.39)	-.496† (-1.77)	-.752* (-2.14)
Children present	.213 (0.94)	.125 (0.59)	-.120 (-0.56)	-.238 (-0.81)	.402 (1.39)	.658† (1.73)	.273 (0.80)	.182 (0.45)
Poverty status	.129 (0.58)	-.679** (-3.18)	-.201 (-0.96)	.170 (0.61)	-.066 (-0.37)	-.160 (-0.68)	-.362† (-1.73)	-.177 (-0.77)
Noncity SMSA	-.301 (-1.20)	.235 (1.00)	.184 (0.79)	.530† (1.67)	.118 (0.61)	.728** (2.90)	-.040 (-0.18)	-.033 (-0.13)
Central city SMSA	-.225 (-1.17)	.291† (1.66)	-.113 (-0.64)	.358 (1.45)	-.054 (-0.38)	.396* (2.13)	.084 (0.51)	-.023 (-0.12)

Black	.551*	-.880**	-.328	.278	.016	-1.01**	-.231	.274
	(2.42)	(-4.01)	(-1.51)	(0.97)	(0.95)	(-4.52)	(-1.18)	(1.26)
Hispanic	-.546	-.732**	-.815**	-.458	-.551**	-.783**	-.117	-.243
	(-2.10)	(-3.11)	(-3.40)	(-1.33)	(-3.02)	(-3.31)	(-0.57)	(-0.98)
School discipline	.895**	1.10**	.834**	.618**	.746**	.855**	0.67**	.611**
	(5.21)	(6.63)	(5.08)	(2.96)	(7.08)	(6.20)	(5.40)	(4.59)
Ever convicted	1.20*	-.556	.058	-.204	.031	.962**	.786**	1.00*
	(2.23)	(-1.03)	(0.11)	(-0.33)	(0.13)	(3.12)	(2.87)	(3.51)
Ever charged	.977**	2.13**	1.59**	1.84**	1.00**	.816**	.968**	.385
	(4.83)	(5.73)	(4.32)	(4.36)	(2.60)	(3.10)	(4.14)	(1.53)
% weeks worked	.002	.004	.008	-.001	.006*	.008*	.005	-.003
	(0.76)	(1.34)	(0.27)	(-0.13)	(2.05)	(2.02)	(1.35)	(-0.88)
% weeks unemployed	.006	.007	.004	.011†	.005	.004	.003	.006
	(1.11)	(1.50)	(0.81)	(1.93)	(1.31)	(0.77)	(0.69)	(1.14)
N	1694	1680	1675	1648	1345	1319	1317	1299
L (max)	-1896.96	-2640.84	-2159.53	-709.35	-2147.01	-2291.37	-2125.71	-1064.09

UNIVERSE: Civilians age 18-23 on interview date who were not enrolled in high school or college.

Three-Wave Path Analysis

While the results of the previous analysis indicate very little mutual or independent effects of crime and employment, it is possible that there are long term consequences for employment based on earlier participation in illegal activities that are not captured when crime and employment are measured simultaneously. While crime was measured at a single point, indicators of labor force participation are present before, during, and after the period covered by the crime measure. The multiple observations of individuals in the panel design of the NLS allow use of the recent developments in path analysis to assess the validity of causal hypotheses.

The theoretical perspectives outlined above were used to construct two path models. In the economic model, the effects of human capital variables on crime operate through their effects on current employment and on expected wage, while in the control model, expected wage is deleted and human capital variables operate directly on crime through their association with commitment to employment. The effects of criminal activity in 1980 can affect employment in 1981 both directly and through effects on 1980 employment.

The analysis is restricted to youth who were out of school in 1980, the year the data on illegal activities were collected. The tradeoff between legal employment and crime should be most clear among those who are free to seek full-time employment. The restriction of the sample to youth who are out of school also means that the analysis is largely of adult crime rather than juvenile delinquency. Evidence suggests that while more juveniles are involved in illegal activities than are adults, crimes committed by adults are, on the whole, more serious than crimes committed by youngsters (Wolfgang 1977; Hindelang and McDermott 1979).

The path analysis strategy, while very useful for decomposing direct and indirect causal influences, does not easily

allow inclusion of background variables such as sex, race, and region, which do not fit into the causal structure of the problem, but which may have pervasive effects on the relationships among factors. As before, the model is run separately by sex. Sample size considerations preclude further splitting the sample by race, so the analysis is run for whites only. Other control variables such as region are excluded, since they do not have clearly hypothesized effects on the process to be modeled.

The NLS has no measures of attachment in the sense of direct emotional bonds between respondents and other people. Rather, it provides indicators of social roles, such as marital status and presence of children in the home. These will be termed *commitment* variables, to emphasize that they represent role functions rather than attachments to individuals. Two areas of commitment are defined: commitment to work and commitment to family roles.

There are two indicators of commitment to work. The initial interview of the panel included items on the acceptability of several hypothetical alternatives in the case that the respondent was unable to obtain enough income to support a family. These ranged from obtaining more training in order to find a better job to going on welfare or shoplifting. Responses were combined into an index of commitment to the labor force. While such items have not been directly applied to criminal activity, orientation to alternate sources of income has been found to be associated with labor force participation among low income youth (Goodwin 1979). Another item asked whether the respondent expected to be working in five years. Especially for young women, this variable should tap whether the youth's labor force participation is considered to be temporary or relatively permanent. Commitment to family was proxied by two dichotomous variables indicating whether or not the respondent was living with a spouse or living with offspring.

Standard human capital measures included in the model are prior work experience, measured in weeks, and dummy variables separating youth who were high school dropouts or still students in 1979 from youth who had graduated from high school and not received further education. These human capital indicators were measured as of the 1979 interview.¹⁸

A key construct in the economic model is the inclusion of expected returns to work, measured by the imputed value of hourly rate of pay.¹⁹ It is hypothesized that, to the extent there is a relationship between human capital variables and crime, the relationship should be mediated through pay.

Employment is measured over three time periods in the models estimated. Prior experience was defined as the number of weeks worked up to the interview date in 1979. Percent of weeks worked between the 1979 interview and the 1980 interview represents approximately the period covered by the criminal activity scales. Employment during this period was specified only in terms of weeks worked both to simplify the model and to avoid collinearity problems. The total of weeks worked during the period between interviews and weeks worked before the first interview, of course, add up to the total work experience prior to the final period.²⁰ There is some problem of simultaneous causation in the inclusion of weeks worked and criminal activity measures which cover the same time span, since it is possible that some of the youth were incarcerated for a period of time, necessarily limiting the number of weeks available for work. This figure should be quite small, given the infrequency with which an incarceration was reported by the respondents.

Labor force participation in 1981 was defined in terms of the three major labor force statuses: weeks worked, weeks unemployed, and weeks out of the labor force. Since paths to each of these outcomes were estimated in separate equations, the problems of multicollinearity are avoided.

The analysis technique selected is path analysis (Asher 1976). This procedure involves estimating sequentially the hypothesized relationships in a model, using ordinary least squares for each set of estimators. The technique allows decomposition of direct and indirect effects of predictors on outcomes. For example, prior work experience should have a direct effect on weeks worked in 1980. Prior work experience is also a predictor of expected wage, which in turn affects weeks worked, so that prior work experience affects subsequent work indirectly. The total effect of experience on weeks worked in 1980 is the sum of the direct effect and the indirect effect. Further detail on the interpretation of path coefficients is given in the next section of the paper.

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Path Analysis Results

Table 8.7 shows the means for the variables used in the models, separately by sex. Distinct differences appear in the amount of labor force participation reported by young men and women, with men having more prior work experience and a larger proportion of weeks worked in both 1980 and 1981. There is no increase in the percent of weeks worked from 1980 to 1981. Expected wages for women are approximately \$.20 per hour less than for young men. Interestingly, there is little difference between males and females in work commitment. Over 90 percent of the young women say that they expect to be working in five years, a figure only slightly lower than the 98 percent of the young men reporting such plans.

The large percentage of young women with work plans is more striking in light of the fact that 27 percent were mothers in 1980 and in 1981 this figure had risen to 35 percent. The rates of marriage and parenthood for young men were substantially lower, although almost a third had started families of their own by 1981. The difference in family commitments no doubt reflects the continuing trend for women to marry and start families at an earlier age than do young men.²¹

Table 8.7
Descriptive Statistics for Variables Used in Path Models

	Females		Males	
	mean	std. dev.	mean	std. dev.
Prior work experience - 1979	55.89	52.88	68.55	59.04
High school dropout - 1979	0.19	0.39	0.22	0.42
Still in school - 1979	0.34	0.47	0.37	0.48
Work commitment - 1979	13.08	1.87	13.14	1.88
Intention to be working in 5 years - 1979	0.91	0.29	0.98	0.13
Expected wage - 1980 ^a	5.86	0.32	6.07	0.40
% weeks worked - 1979-1980	62.41	37.37	77.01	29.47
Property crime - 1980 ^a	1.82	0.17	1.94	0.27
Drug use - 1980 ^a	0.95	0.48	1.11	0.61
Violence - 1980 ^a	1.23	0.20	1.39	0.38
Married, spouse present - 1980	0.35	0.48	0.18	0.39
Children present - 1980	0.27	0.44	0.09	0.29
% weeks worked - 1980-1981	63.51	38.77	77.76	30.94
% weeks unemployed - 1980-1981	7.80	18.05	11.77	22.62
% weeks OLF 1980-1981	28.70	37.50	10.47	22.81
Married, spouse present - 1981	0.42	0.49	0.27	0.44
Children present - 1981	0.35	0.48	0.16	0.37
Number of cases	1470		1177	

a. Logarithmic form.

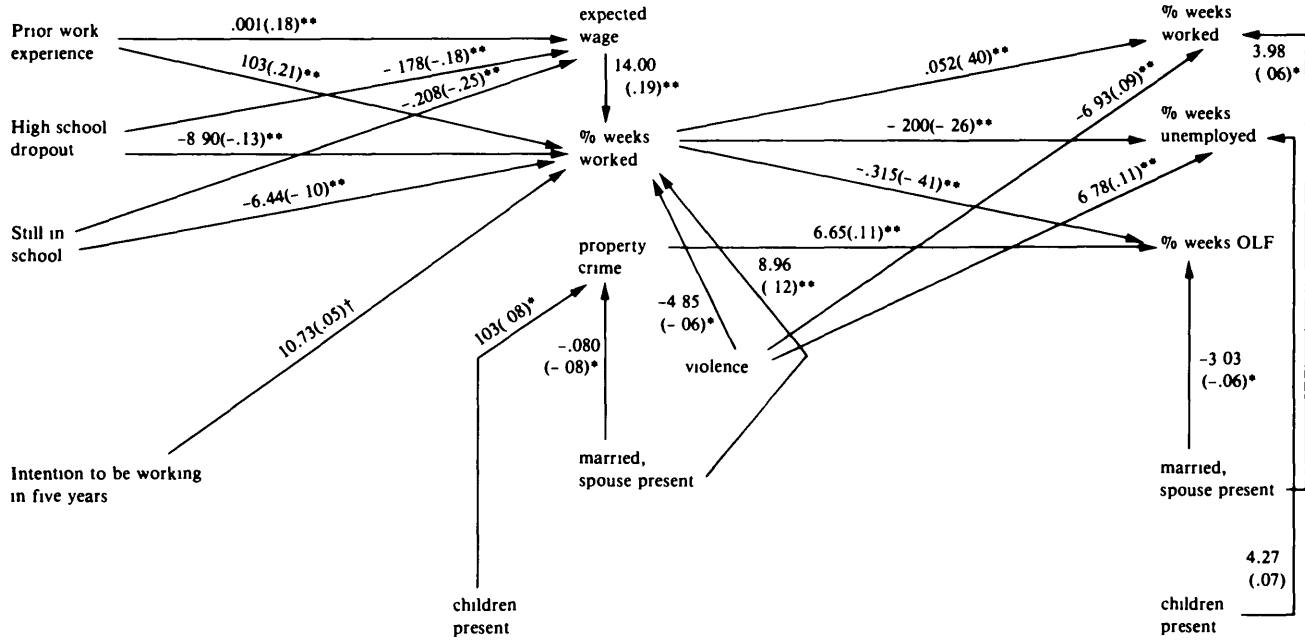
Young men tend to score higher on each crime scale than do young women, but, as with other self-report instruments, the sex difference is much smaller than the sex difference observed in official court records.

Results for young men. Figures 8.1 and 8.2 show the results for young men. The unstandardized coefficients are shown, with standardized coefficients in parentheses. The standardized scores can be used to assess the relative influence on predictors within any one model, while the unstandardized coefficients are more useful in making comparisons across groups.²² Nonsignificant paths are not shown, in order to make the figures easier to read. The figures allow both direct and indirect effects of predictors to be traced through the model. The information in the figures for the male sample is summarized in table 8.8. The hypothesis that delinquency and work are linked through expected returns to employment is not supported. There is no significant path from expected wage to any of the measures of illegal behavior. However, if the economic model is not supported, neither is the control model, at least in terms of measures of commitment to the labor market. Work commitment and intention to be working in five years are not related to any of the crime scales.

Marital status and the presence of children in the home are related to property crime. As expected, married men are less likely to participate in property offenses. However, the positive association between having a child in the home and property crime is contrary to the commitment hypothesis.

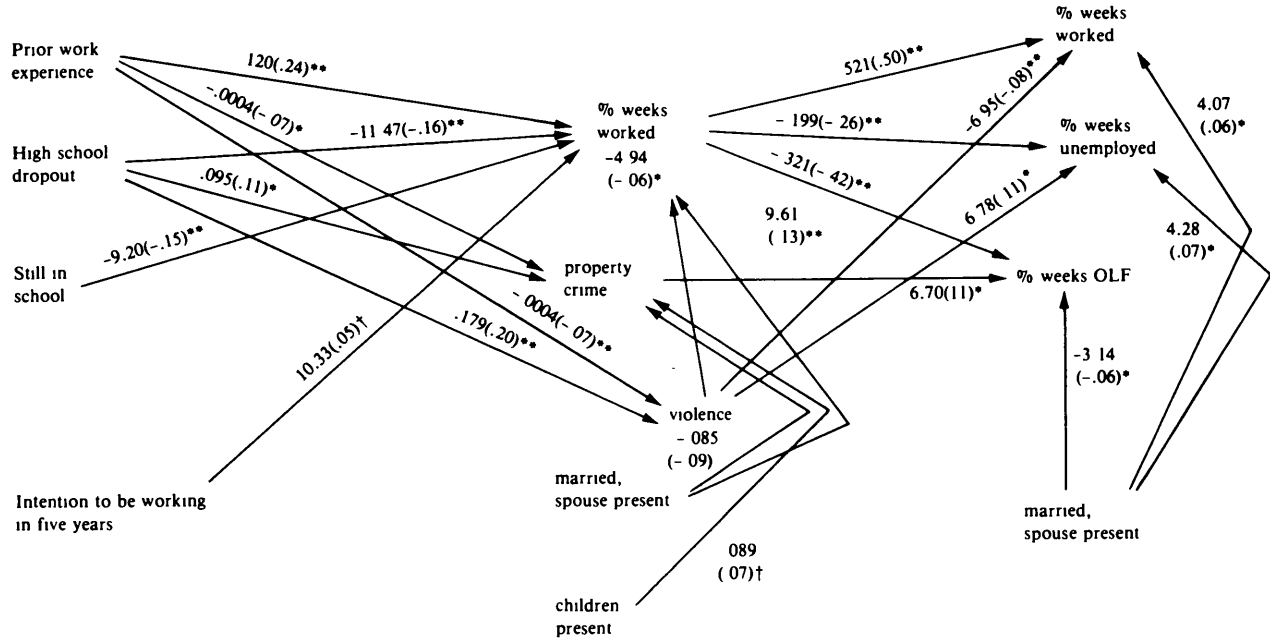
Violent activity is the only one of the crime indexes associated with significantly fewer weeks worked during the period over which the illegal activities were measured. However, both violence and property crimes were significantly associated with labor force participation measured in the following year. That is, young men who report more involvement in violent activities in 1980 tend to report fewer weeks worked and more weeks unemployed in

Figure 8.1
Path Analysis of Economic Model for White Males



UNIVERSE: Nonenrolled civilians age 18-23 on interview date. N = 1177

Figure 8.2
Path Analysis of Social Control Model for White Males



UNIVERSE: Nonenrolled civilians age 18-23 on interview date. N=1177

the following year than do their more peaceable counterparts, while youths with higher reported levels of property crime spend a larger percentage of their time out of the labor force relative to other young men. There is an additional, indirect effect of violence on labor force participation, since violent men tended to work less in 1980. The lower level of prior experience is associated with fewer weeks worked, more unemployment, and more time out of the labor market in 1981. Since there was no significant relationship between property crime and weeks worked in 1980, there is no significant indirect link between property crime and labor force participation in the following period.

For young men, the magnitude of employment effects of human capital, commitment, and delinquency are further described in table 8.8, which shows the direct, indirect, and total effects of each variable used to predict the labor market outcomes of the model.²³ In the control model, prior experience and school status are linked to employment through the violence scale, but these indirect effects are small. Using the economic model, it appears that a substantial proportion of the effect of the school variables on weeks worked is through their effect on expected wage.

About one-quarter of the total effect of violent behavior on subsequent weeks worked is due to the reduction in weeks worked in 1980. The indirect effects of violence on time unemployed or out of the labor force are relatively small. Since property crime is apparently unrelated to weeks employed, there is no significant indirect effect of property violations on subsequent labor force activities.

Marital status has the predicted effects on employment, reducing time out of the labor force and increasing weeks worked. The presence of children, however, is associated with more time unemployed.

Table 8.8
Direct and Indirect Effects of Predictor Variables
on Labor Force Participation, White Males

	Type of effect					
	Direct		Indirect		Total	
	B	Beta	B	Beta	B	Beta
I. Economic Model						
Percent weeks worked, 1980						
Prior experience	.103	.21	.014	.03	.117	.24
School status						
Dropout	8.90	-.13	-2.49	-.04	-11.39	-.17
Student	-6.44	-.10	-2.91	-.05	-9.35	-.15
Graduate	-	-	-	-	-	-
Work commitment						
Intention to work	10.73	.05	ns	ns	10.73	.05
Expected wages	14.00	.19	-	-	14.00	.19
Criminal activity						
Property	ns	ns	-	-	ns	ns
Drugs	ns	ns	-	-	ns	ns
Violence	-4.85	-.06	-	-	-4.85	-0.06
Married, 1980	8.96	.12	ns	ns	8.96	.12
Parent, 1980	ns	ns	ns	ns	ns	ns
Percent weeks worked, 1981						
Expected wages	ns	ns	.728	.09	.728	.09
Percent weeks worked, 1980	.052	.40	-	-	.052	.40

Illegal activities						
Property	ns	ns	ns	ns	ns	ns
Drugs	ns	ns	ns	ns	ns	ns
Violence	-6.93	-.09	-.252	-.03	-7.18	-.12
Married, 1981	3.98	.06	-	-	3.98	.06
Parent, 1981	ns	ns	ns	ns	ns	ns
Percent weeks unemployed, 1981						
Expected wages	ns	ns	-2.80	-.05	-2.80	-.05
Percent weeks worked, 1980	-.200	-.26	-	-	-.200	-.26
Illegal activities						
Property	ns	ns	ns	ns	ns	ns
Drugs	ns	ns	ns	ns	ns	ns
Violence	6.78	.11	.97	.02	7.75	.13
Married, 1981	ns	ns	-	-	ns	ns
Parent, 1981	4.27	.07	-	-	4.27	.07
Percent weeks out of labor force, 1981						
Expected wages	ns	ns	-4.41	-.07	-4.41	-.07
Percent weeks worked, 1980	-.315	-.41	-	-	-.315	-.41
Illegal activities						
Property	6.65	.11	ns	ns	6.65	.11
Drugs	ns	ns	ns	ns	ns	ns
Violence	ns	ns	1.52	.02	1.52	.02
Married, 1981	-3.03	-.06	-	-	-3.03	-.06
Parent, 1981	ns	ns	ns	ns	ns	ns

(continued)

Table 8.8 (continued)

	Type of effect					
	Direct		Indirect		Total	
	B	Beta	B	Beta	B	Beta
II. Commitment Model						
Percent weeks worked, 1980						
Prior experience	.120	.24	.002	.00	.122	.24
School status						
Dropout	-11.47	-.16	-.884	-.01	-12.35	-.17
Student	-9.20	-.15	ns	ns	-9.20	-.15
Graduate	-	-	-	-	-	-
Work commitment	ns	ns	ns	ns	ns	ns
Intentions to work	10.33	.05	ns	ns	10.33	.05
Illegal activity						
Property	ns	ns	-	-	ns	ns
Drugs	ns	ns	-	-	ns	ns
Violence	-4.94	-.06	-	-	-4.94	-.06
Married, 1980	9.61	.13	ns	ns	9.61	.13
Parent, 1980	ns	ns	ns	ns	ns	ns

Percent weeks worked, 1981						
Weeks worked, 1980	.521	.50	-	-	.521	.50
Illegal activities						
Property	ns	ns	ns	ns	ns	ns
Drugs	ns	ns	ns	ns	ns	ns
Violence	-6.95	-.08	-2.57	-.03	-9.52	-.11
Married, 1981	4.07	.06	-	-	4.07	.06
Parent, 1981	ns	ns	-	-	ns	ns
Percent weeks unemployed, 1981						
Percent weeks worked, 1980	-.199	-.26	-	-	-.199	-.26
Illegal activities						
Property	ns	ns	ns	ns	ns	ns
Drugs	ns	ns	ns	ns	ns	ns
Violence	6.78	.11	.983	.02	7.76	.13
Married, 1981	ns	ns	-	-	ns	ns
Parent, 1981	4.28	.07	-	-	4.28	.07
Percent weeks, OLF, 1981						
Percent weeks worked, 1980	-.321	-.42	-	-	-.321	-.42
Illegal activities						
Property	6.70	.11	ns	ns	6.70	.11
Drugs	ns	ns	ns	ns	ns	ns
Violence	ns	ns	1.59	.03	1.59	.03
Married, 1981	-3.14	-.06	-	-	-3.14	-.06
Parent, 1981	ns	ns	ns	ns	ns	ns

UNIVERSE: White male civilians, not enrolled in school 1981, 18 years old or older, N=1177.

-: coefficient not calculated as part of model.

ns: coefficient not significant at .10 level.

While expected wage in 1980 has a substantial indirect effect upon subsequent labor force participation, leaving this variable out of the model, as done in the commitment analysis, makes no substantial change in any of the estimated coefficients, so that the second panel of table 8.8, the commitment model, tells essentially the same story as the first panel, the economic model.

Results for young women. For young women, the crime scales are neither predicted by variables in the model nor predictive of other outcomes. Ironically, it is among young women that the commitment variables explain employment, although there are no significant relationships with any of the crime scales. Children exert a very strong dampening effect on employment in both 1980 and 1981, while marriage is significant only in the latter year. The magnitudes of the coefficients linking the human capital variables to employment are somewhat smaller for the young women than for the young men, but all estimates are of the same general order of magnitude.

III. Conclusions

Despite the sensitivity of the subject material, one conclusion from this analysis is an assurance that the measures of delinquent behavior and police involvement seemed to produce reasonable and consistent results both with respect to each other and with respect to previous findings. By any measure, criminal or disruptive behavior is widespread. Marijuana and its derivatives have been used at least once by almost half of the total sample, and use is particularly prevalent among young adults. Fewer than half of the respondents report never having been involved in any of the criminal activities on the index. One-third of the males report some form of police contact.

Sex and enrollment status had strong and consistent relationships with all measures. Enrollment status, which to a large extent reflects self-selection, has a much more consistent relationship with both delinquent behavior and with involvement with social control systems than do unselected demographic categories like race and poverty. The weak and inconsistent relationships of race and poverty with self-reported delinquent behavior, while counter to the popular stereotypes of delinquents or adult criminals, are in line with findings from previous studies using self-report measures (Hirschi 1969; Ageton and Elliott 1978). Middle income and white youth are not much different in their reports of delinquent behavior from poor and minority youth.

The discrepancies between delinquency patterns from self-report and from police contact data have generated much debate in the criminological literature.²⁴ Gradually, these discrepancies have been reduced. Recent work indicates that the association between social class and official records is weaker than had previously been assumed. Race remains the area of the most serious inconsistencies, with self-reports indicating much lower race ratios than police records. NLS data also show this discrepancy: we find no evidence that the poor or the minority youth engage in more criminal activity, but these groups are progressively more likely to be found at more serious levels of involvement with the criminal justice system, probation and incarceration.

Other processes than bias in the criminal justice system have been advanced to account for the observed patterns. Ageton and Elliott's work suggests that, while similar proportions of whites and blacks report some level of delinquent activity, black youth are more likely than whites to be found among those who commit crimes very frequently. Such highly delinquent youth are properly the focus of more intensive police and judicial attention than are the more casually delinquent.

The results for the analysis of illegal income are consistent with the notion that, while whites may participate in illegal activities as much or more than blacks, blacks are more likely to rely on crime for financial support. This implied difference in motivation for illegal actions, if observed by the courts, could conceivably justify different dispositions. That is, judges may consider that crimes committed as part of a regular pattern of income acquisition are more serious than crimes committed as part of a turbulent adolescence. Also, in determining which youths are to be dealt with by diversion, probation, or incarceration, courts may take into account the resources available to the child's family. Middle class families are more able to afford private counseling, for example, than are the poor.

Thus, when a criminal justice system does not deliberately treat youths from poor or minority homes more harshly than youth from the white middle class, socially disadvantaged youth may be more likely to end up in the correctional system. To the extent that the popular image of delinquent youth continues to exaggerate the relationship between social status and criminal behavior, the associated stigma makes it more difficult for disadvantaged youth to avoid the appearance of being a possible threat to others. The lack of direct relationship between employment and crime does not mean that classes of individuals are not disadvantaged because of social stereotypes. Clearly the social labeling process has the potential for imposing yet another barrier to employment on the poor and on blacks.

The regression results indicate that the economic model of the relationship of crime to employment is at best appropriate only for youths who have left school. For high school students, the important variables tend to be those which measure the quality of the youth's relationships with their families and their schools. If anything, delinquency among high school students is positively associated with par-

ticipation in the paid labor market. The results for students are consistent if both illegal activity and employment characterize youths who are moving away from dependency on parents, and so least likely to be controlled by their ties to adults.

Role relationships, especially marriage, are also important for adults, with much weaker effects for variables relating to the family of origin. While employment measures tend not to reach traditional levels of significance for the adult population, the signs of the parameters are in the directions consistent with a substitution of illegal for legal earnings. The analysis of illegal income suggests that it may be possible to identify people who use crime as a regular source of earnings, based more on the lucrateness of crimes committed than on the sheer frequency of offenses. Official responses to behavior, in the form of school dismissals or convictions, also seem to have an independent effect on employment.

It is somewhat ironic that factors such as living in central cities and coming from minority ethnic groups are more likely to be related to deviant activity among young women than among young men. Indeed, demographic characteristics seem generally to explain less of the behaviors under investigation than do measures of individual links with the major sources of social definitions in their lives, namely, schools and families.

The path analysis supplements the regression analysis, showing that there are weak, complex links between crime and employment. Neither the economic nor the control models are supported in detail, although each shows some significant links, at least for males. For females, crime remains largely unexplained by any of the constructs used.

The lack of relationship between the predictor variables and crime among young women may be due to the relative infrequency of illegal activities among females, or to a real

sex difference in the etiology of crime, such that traditional theories based on male samples are simply invalid for females. In any case, there is no hint in the data about the causes of crime among women. The data simply replicate the known deterrent effects of young children on maternal employment.

The relationship for young men between crime and employment appears to vary both by type of offense and by the measure of labor market participation. The pattern seems to imply less a substitution of income than a matter of lifestyle.

The interpretation of these patterns may hinge on the relationships between the types of choices involved in defining labor force status. The distinction between being in and out of the labor force is basically one of self-definition: an individual decides to seek work or to pursue other activities. Once having decided to look for work, the individual may or may not find an acceptable job, and may or may not be able to hold a job once one has been found. Presumably, then, the distinction between employed and unemployed is determined both by individual choice and by the availability of jobs in the local labor market. Of course, these distinctions are more heuristic than real. In particular, the lack of suitable job opportunities for youth may lead to giving up on job search, so that the OLF status is not entirely optional.

Violent crime is not associated with weeks OLF, implying that there is no link with the decision to enter the labor market. Apparently, however, violence is associated with difficulty in getting or holding a job, resulting in more time unemployed and less time working. It seems likely that men who are prone to involvement in fights and assaults would not limit their aggressive behavior to off-work times, making them less desirable as employees. If, as has been suggested (Berkowitz 1980), violent behavior is largely impulsive,

violent men may also be more likely to quit jobs in response to frustrations than are more controlled, less violent men.

The effect of property crime on being out of the labor force in 1981 demonstrates substitution of crime for employment. No association appears with either time employed or time unemployed, suggesting that the crucial factor is the decision not to participate in the conventional labor market, not merely the lack of a paying job. Since having less work experience and being a high school dropout in 1979 were significant predictors of property crime, there is some encouragement for further exploration.

The presence of children in the home was, as expected, a strong deterrent to employment for young women. However, the effects of parenthood on young men were quite unexpected. Having a child seems to be associated with higher levels of property crime and greater time unemployed and, indirectly, greater time out of the labor force. Currently, there is nothing in either the data or in standard theories of crime to explain this pattern. Relatively few young men have started families at this early age, and it may be that there are general lifestyle differences captured by the parenthood variable for young men which are associated with higher levels of property crime and unemployment.

It is tempting to interpret the overall findings as evidence that the employment-crime link is, for young men, a matter more of lifestyle than of economic rationality. Employment and unemployment among young people are in part due to forces external to the youth—economic conditions, layoffs, inability to find a job. However, being out of the labor force as opposed to in the labor force is more a matter of choice. Men with a tendency to engage in violent behavior do not seem more or less likely than others to choose to be OLF, but they may have difficulty in keeping a job, whether their leaving is through quitting or being fired. Young men who

engage in property crimes, however, may be involved in a different lifestyle, characterized by early fertility (presumably indicating early sexual activity) and time spent out of the conventional labor force. These interpretations are highly speculative, but seem to be consistent with the emerging evidence on the etiology of crime.

NOTES

1. I would like to express my appreciation to Dr. Delbert Elliott for his generosity in providing both data and substantive consultation in the development of this instrument. Also freely providing the benefit of their extensive experience in this field were Drs. Lloyd Johnston, Gerald Bachman, and Martin Gold.
2. Details of this development and analysis of the validity of the self-report measures are included in Crowley (1982).
3. The factors emerged clearly only for older males and for the total sample. Possibly because the general level of participation in delinquent activities among females is so low, solutions failed to converge for either female adults, minors, or the full sample of young women.
4. Scores on the delinquency items were calculated by assigning the midpoint of the selected response category, that is, zero, one, two, four, eight, thirty-five, and a score of fifty to those who responded in the "50 or more" category.
5. See: Hirschi (1969); Williams and Gold (1972); Ageton and Elliott (1978); Hindelang, Hirschi, and Weis (1979).
6. The lack of association between race and self-reported delinquency, a fairly consistent result in self-report studies, has led to questions being raised as to the possibility of differential validity of the self-report measure. The single most comprehensive study of validity of survey measures of criminal activity does show that, for black urban males, there may be substantial underreporting, while reporting among females and among white males seems accurate within quite reasonable limits (Hinderlang, Hirschi, and Weis 1981). Thus the apparent lack of dif-

ferentiation by race may be to some extent artifactual. However, the same study indicates that the face to face interview, essentially the technique used in the NLS, produced the lowest level of underreporting of offenses. The reasons for the apparent differences in the way that black males respond to self-report instruments as compared to the responses of other groups cannot be addressed with the available information.

7. Indeed, an entire session of the 1981 annual meeting of the American Society of Criminology was devoted to the link between social class and crime, and concluded that the link was weak at best in any of the data sets investigated.

8. Since the police contact items asked for incidents over the respondent's entire life span, there is an artificial correlation between age and frequency of reported contact. Older youths have had more time to come to the attention of the police than have their younger siblings. For this reason, age will not be used as a descriptor of police contacts.

9. The comparisons of high school dropouts with other enrollment groups is complicated by the difference in age distributions. High school students are, on average, younger than dropouts, while college students and high school graduates are somewhat older. Both high school graduates and dropouts, however, are out of regular school, and presumably face similar problems in entry into adult roles. The relative age of the enrollment groups makes the comparison a conservative one, since the age difference would give the graduates more opportunity to have come in contact with the law.

10. See Brier and Feinberg (1980) for a discussion and critique of some of the econometric approaches to crime. Erlich (1981) provides an elaborate presentation of the economic approach to criminal deterrence.

11. The relationship of youth to the labor market is vastly different depending on the degree to which they have accepted adult roles. Youths still in school are expected to look for much less in terms of long term employment possibilities in their jobs, while youths who have completed their education should have a commitment to the labor market both more immediate and long range. Therefore, the analysis of the link between crime and work is run separately for in-school and out-of-school youth.

12. The lack of relationship may be in part due to the relatively small number of cases. Reservation wage was asked only of those not working as of interview date.

13. The vast majority of other family structures are female headed households. Broken homes have long been a favorite explanation for delinquency, as in Bowlby's classic paper on juvenile thieves (1946). The link has been called into question in more recent work (Wilkinson 1974). Other measures of family social background, notably presence of reading materials in the home and the employment of the mother when the youth was aged 14 were tried in the initial analysis and deleted because they produce negligible coefficients.

14. Much previous research finds that running away is a symptom of disturbed family relationships. See Blood and D'Angelo (1974).

15. Elliott and Voss (1974) actually found that dropping out reduced delinquent activity for individuals who were thereby freed from the pressures of school. Other work supporting this position include Noblit (1976), Mann (1980), and Gold and Mann (1972).

16. A truncation problem appears in the distributions for weeks unemployed and for all the delinquency indexes when used as dependent variables. Responses are constrained to be zero or greater, and there are a large number of cases with zero values—youths who report no weeks unemployed or no offenses. For these dependent variables, Tobit analysis was used as the appropriate analogue to OLS. For reservation wage and for proportion of weeks employed, truncation was not such a problem, so standard OLS techniques were applied. Due to program limitations, multivariate analyses were run on unweighted data.

17. Conceivably, some of the relationship between proportion of weeks worked and convictions could be simply a function of time during which the respondent was not available for work due to incarceration. A more refined test would eliminate convictions between interviews, but this cannot be done reliably from the level of detail available. In any case, relatively few of those convicted are incarcerated, so this factor should not be a serious bias.

18. Indicators of participation in training programs outside of regular school were included in earlier analyses and dropped due to lack of significance.

19. Hourly rate of pay was estimated using one of three figures. For youth who worked at some time in 1979 or 1980, the actual wage at the current or last job was used. If 1979 wage was used, the amount was adjusted to 1980 dollars. If a youth had not worked in either 1979 or 1980, it was assumed that the expected wage was equal to the minimum wage,

or \$3.10 per hour. This assumption was made by reasoning that this sample has relatively few youth with advanced education, and that respondents who had not held a job in the past few years would expect to start in minimum or near-minimum wage positions.

Returns to employment include not only pay, but also such intangibles as job satisfaction and on-the-job companionship. However, none of these can be estimated for youth not currently employed. Job satisfaction is a function of the specific job rather than the type of worker, so that estimations based on such factors as race, education, and experience are invalid as instruments (Hills and Crowley 1983).

20. There were other considerations in limiting measurement of labor force participation in 1980 to weeks worked. In predicting the next stage of the model, labor force participation in 1981, the multicollinearity of the various labor force statuses creates problems in estimating effects. Also, an already complicated analysis becomes even more complex, and it was decided to eliminate the measures of weeks unemployed and out of the labor force between the 1979 and 1980 interviews in part to simplify the problem.

21. Note that parenthood and marriage are measured independently, since a number of youth have children prior to marriage. All combinations of the two variables occur with some frequency in the data.

22. Unstandardized coefficients are highly sensitive to the scale of measurement of the variables. Thus, a dichotomous variable such as school status will tend to have a large coefficient, while a continuous variable such as prior work experience will have a very small one. Standardized coefficients put all of the predictors on a scale based on the variance of the sample. Using standardized coefficients, it can be seen, for example, that prior work experience is very strongly linked to weeks worked, despite the small unstandardized coefficient. Since the variance of each predictor is likely to be different across groups, the unstandardized coefficients provide a better comparison across groups of the magnitude of the links between predictors and outcomes.

23. To calculate indirect effects of a variable, first identify the paths from that variable to the outcome of interest through the other variables in the model. For example, prior work experience has a direct effect on weeks worked, as shown by the significant coefficient on the arrow between the two. The indirect effect of prior work experience on weeks worked is described by the path found by following the path from prior experience to expected wage, then following the path from expected wage

to weeks worked. The magnitude of the indirect effect is calculated by multiplying the coefficients on the adjacent paths. Thus, for young white men the indirect effect of prior experience on weeks worked in 1980 is:

$$.001 * 14.00 = .014$$

The total effect is simply the sum of the direct effect and all of the indirect effects linking the predictor variable with the outcome. Roughly speaking, the interpretation of the indirect path goes like this: An increase of ten weeks in the number of prior weeks of experience increases the expected wage by one cent ($.001 * 10 = .01$). An increase of one cent in the young men's expected wage increases the percent of weeks worked by .14 ($.01 * 14.00 = .14$). Thus, by increasing the expected wage, increased work experience increases subsequent weeks worked. The analogous calculation could be made using standardized coefficients, in which case the real-world units (dollars and weeks) would be converted into points on the standardized scales.

24. For a comprehensive discussion of the history of measures of individual criminal activity and the controversies mentioned, see Hindelang, Hirschi, and Weis (1981).

REFERENCES

- Ageton, S.S. and D.S. Elliott. 1978. "The Incidence of Delinquent Behavior in a National Probability Sample of Adolescents. (Project Report No. 3) *The Dynamics of Delinquent Behavior: A National Survey* MM 27552. Boulder, CO: Behavioral Research Institute.
- Asher, H.B. 1976. *Causal Modeling*. Beverly Hills: Sage Publications.
- Bachman, J.G. 1978. "Delinquent Behavior Linked to Educational Attainment and Post-High School Experiences." Paper presented to Law Enforcement Assistance Administration Conference on the Correlates of Crime and the Determinants of Criminal Behavior, Rosslyn, Virginia.
- Bachman, J.G., P.M. O'Malley and J. Johnston. 1978. "Adolescence to Adulthood-Change and Stability in the Lives of Young Men." *Youth in Transition*, Volume VI. Ann Arbor: Institute for Social Research, University of Michigan.
- Berger, R.J., J.E. Crowley, M. Gold and J. Gray. 1975. *Experiment in a Juvenile Court: A Study of a Program of Volunteers Working with Juvenile Probationers*. ISR-4055. Ann Arbor: Institute for Social Research, University of Michigan.
- Berkowitz, L. 1980. "Is Criminal Violence Normative Behavior?—Hostile and Instrumental Aggression in Violent Incidents." In E. Bittner and S.L. Messinger, eds., *Criminology Review Yearbook*, Vol. 2. Beverly Hills: Sage Publications.
- Blood, L. and R. D'Angelo. 1974. "A Progress Report on Value Issues in Conflict Between Runaways and Their Parents." *Journal of Marriage and the Family* 36: 486-490.
- Bowlby, J. 1946. *Forty-four Juvenile Thieves: Their Characters and Home Life*. London, England: Bailliere, Tindall, and Cox.
- Brier, S.S. and S.E. Feinberg. 1980. "Recent Econometric Modeling of Crime and Punishment: Support for the Deterrence Hypothesis?" *Evaluation Review* 4: 147-191.
- Crowley, J.E. 1982. "Delinquency and Employment: Substitutions or Spurious Association." Paper presented at the Annual meetings of the American Society of Criminology, November 1981, Washington, DC.

- _____. 1982. "Delinquency and Employment: Substitution or Spurious Association." In Michael E. Borus, ed., *Pathways to the Future, Vol. II*. Columbus: Center for Human Resource Research, Ohio State University.
- Elliott, D.S. and H.L. Voss. 1974. *Delinquency and Dropout*. Lexington, MA: Lexington Books.
- Erlich, I. 1981. "On the Usefulness of Controlling Individuals: An Economic Analysis of Rehabilitation, Incarceration, and Deterrence." *American Economic Review* 71: 307-322.
- Farrington, D.P. 1977. "The Effects of Public Labelling." *British Journal of Criminology* 17: 112-125.
- _____. 1982. "Longitudinal Analyses of Criminal Violence." In Marvin E. Wolfgang and Neil A. Weiner, eds., *Criminal Violence*. Beverly Hills: Sage Publications.
- Gold, M. and D. Mann. 1972. "Delinquency as Defense." *American Journal of Orthopsychiatry* 42: 463-479.
- Goodwin, L. 1979. "The Social Psychology of Poor Youth as Related to Employment." Paper submitted to Vice-President Walter Mondale's Task Force on Youth Employment.
- Hills, S. and J.E. Crowley. 1983. "The Quality of Youth Employment." In M.E. Borus, ed., *Pathways to the Future, Vol. III*. Columbus: Center for Human Resource Research, Ohio State University.
- Hindelang, M.J. 1973. "Causes of Delinquency: A Partial Replication and Extension." *Social Problems* 20: 471-487.
- Hindelang, M.J., T. Hirschi and J.G. Weis. 1981. *Measuring Delinquency*. Beverly Hills: Sage Publications.
- Hindelang, M.J., T. Hirschi and J.G. Weis. 1979. "Correlates of Delinquency: The Illusion of Discrepancy Between Self-Report and Official Measures." *American Sociological Review* 44: 995-1014.
- Hindelang, M.J. and M.J. McDermott. 1979. *Juvenile Criminal Behavior: An Analysis of Rates and Victim Characteristics*. Analysis of National Crime Victimization Survey Data to Study Serious Delinquent Behavior, Monograph 2, Washington, DC: Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice.
- Hirschi, T. 1979. *Causes of Delinquency*. Berkeley: University of California Press.

- Mann, D.W. 1980. "Disruptive Students or Provocative Schools? School Differences and Student Behavior." Paper presented at the Annual Convention of the American Psychological Association, 1980, Montreal, Quebec.
- McNeeley, R.L. and Carl E. Pope. 1981. "Socioeconomic and Racial Issues in the Measurement of Criminal Involvement." *Race, Crime, and Criminal Justice*. Beverly Hills: Sage Publications.
- Minor, W.W. 1977. "A Deterrence-Control Theory of Crime." In Robert F. Meier, ed., *Theory in Criminology: Contemporary Views*. Beverly Hills: Sage Publications.
- Monahan, J. and D. Klassen. 1982. "Situational Approaches to Understanding and Predicting Individual Violent Behavior." In Marvin E. Wolfgang and Neil A. Weiner, eds., *Criminal Violence*. Beverly Hills: Sage Publications.
- Noblit, G.W. 1976. "The Adolescent Experience and Delinquency: School Versus Subcultural Effects." *Youth and Society* 8: 27-44.
- Wilkinson, K. 1974. "The Broken Family and Juvenile Delinquency: Scientific Explanation or Ideology?" *Social Problems* 21: 726-739.
- Williams, J.R. and M. Gold. 1972. "From Delinquent Behavior to Official Delinquency." *Social Problems* 20: 209-228.
- Wolfgang, M.E. 1977. "From Boy to Man—From Delinquency to Crime." Paper presented to the National Symposium on the serious offender, September 1977, at Department of Corrections, Minneapolis, Minnesota.