

# Volunteerism and Arrest in the Transition to Adulthood\*

CHRISTOPHER UGGEN, *University of Minnesota*

JENNIFER JANIKULA, *University of Minnesota*

---

## *Abstract*

*Tocqueville ([1835] 1956) posited that "by dint of working for one's fellow citizens, the habit and taste for serving them is at length acquired" (197). Informal social control theories similarly suggest that voluntary service gradually draws persons to virtue. Are volunteers less likely to breach the social contract? This article estimates the effects of volunteer experiences on the occurrence and timing of arrest using data from the Youth Development Study, a prospective longitudinal survey of 1,000 adolescents. After statistically controlling for the effects of antisocial propensities, prosocial attitudes and behavior, and commitments to conventional lines of action, we find a robust negative relationship between volunteer work and arrest. We then investigate age dependencies in the nature and effect of volunteer work.*

Volunteer work appears to have many beneficial effects on the volunteer. Among these are increased self-acceptance (King, Walder & Pavey 1970), instrumentality (Logan 1985), and civic identity (Johnson et al. 1998; Serow 1990; Youniss, McLellan & Yates 1997). In addition to these psychological effects, volunteer work also promotes prosocial actions, such as helping behavior (Oesterle, Johnson & Mortimer 1998; Wilson & Musick 1997a) and political participation

*\*This research was supported by grants from the National Institute of Mental Health ("Work Experience and Mental Health: A Panel Study of Youth," MH 42843), the University of Minnesota Graduate School, and the University of Minnesota Life Course Center. We thank Jeylan Mortimer for providing the data and support in many phases of this research and Jessica Huiras, Sabrina Oesterle, Paul Westerberg, Doug Hartman, Barbara McMorris, and Sara Wakefield for helpful comments and other assistance. Direct correspondence to Christopher Uggen, 909 Social Sciences Building, 267 19th Avenue South, Minneapolis, MN 55455. E-mail: uggen@atlas.socsci.umn.edu.*

(Hanks 1981). Social observers since Tocqueville (1835) have posited that volunteerism would also reduce antisocial or criminal behavior. Yet few investigations have assessed the effects of volunteering on crime among a general sample of adolescents and young adults. Prior research has generally been limited to problem behaviors such as teen pregnancy and dropping out of school (Allen et al. 1994; Moore & Allen 1996; Weissberg, Caplan & Harwood 1991), to studies of offender populations (Hanson 1985; Morris 1970; Nirel et al. 1997; Young et al. 1995), or to volunteer services provided *to* (rather than *by*) youth (Frazier 1983; Schondel et al. 1995). This article is the first to test whether volunteer work reduces the likelihood of arrest in early adulthood among a representative community sample of youth.

### Volunteer Work as a Social Phenomenon

Academics from diverse disciplines have lamented the decline of American civil society (Dionne 1991; Elshtian 1995; Gitlin 1995; Putnam 1995) as democratic participation and volunteering appear to have declined in recent years (Independent Sector 1995; Lipset 1996; Putnam 1995).<sup>1</sup> Though authors cite disparate reasons for recent incivility, including crime, racial tensions, and political polarization, all agree that American individualism is not sufficiently tempered by associationalism and reciprocal networks of social obligation.

Although America is among the most philanthropic populations in the world (Curtis, Grabb & Baer 1992), it also ranks among the highest in crime and imprisonment rates per capita (Mauer 1997). Currently over half of the American population is volunteering, while U.S. crime rates are among the highest in the industrialized world (Janeksela 1992). In *American Exceptionalism* (1996), Lipset notes the contradiction between high self-reported volunteer work and high crime rates. Lipset argues against a causal interpretation of the relationship between volunteerism and crime, at least at the societal level of analysis. But this begs an important ecological question: are the *individuals* who volunteer less likely to breach the social contract than those who do not volunteer? More specifically, will changing individuals from a nonvolunteer to a volunteer status induce a change in their likelihood of antisocial conduct?

### Volunteer Work and Antisocial Behavior

The co-occurrence of high rates of philanthropy and high rates of crime in American society, as well as recent policy initiatives such as the 1997 volunteer summit (see, e.g., Cloud 1997), highlights the need for systematic investigation of the effects of volunteer work on crime. Such research is particularly salient

for adolescents and young adults, since this group is responsible for a disproportionate share of criminal behavior (U.S. Department of Justice 1998a). Moreover, high schools and juvenile justice agencies are increasingly imposing community service requirements as conditions of graduation for all students and as conditions of diversion programs for delinquent youth (France 1998; Hamilton 1981; Nolin et al. 1997; Sobus 1996; Starr & Curry 1992; Weissberg, Caplan & Harwood 1991).<sup>2</sup>

The effects of volunteering on antisocial behavior have been observed in criminal justice settings in which volunteer opportunities take the place of formal processing (Frazier 1983; Hanson 1985). In one program (for which evaluation data are not provided), for example, adult misdemeanants served 50 to 200 supervised hours in their community to make restitution for the crime committed (Hanson 1985).<sup>3</sup> An investigation of released offenders (Young et al. 1995) found that religious volunteer programming curbed recidivism, at least among female and lower-risk inmates. In Israel, a 1987 law enabled courts to commute short prison sentences for community service work (Nirel et al. 1997). After adjusting for the nonrandom selection into service work by a propensity score methodology (Rosenbaum & Rubin 1984), Nirel et al. (1997) found the odds of recidivism among prisoners were 1.7 times higher than among service workers, suggesting the considerable potential of service work for convicted offenders.

Among adolescents, volunteering is associated with a number of salutary outcomes. Youniss, Yates, and Su (1997) report that the frequency of volunteer community service participation is negatively associated with marijuana use among a nationally representative sample of high school seniors. Schondel et al. (1995) found that adolescent volunteers were more effective than adult volunteers in answering calls on a teen hotline and that the volunteers themselves appeared to benefit from the experience. Teen Outreach, a combination of adolescent volunteering and guided group discussions, was found to reduce teen pregnancy and dropout rates among volunteers relative to a matched comparison group (Philliber & Allen 1992), particularly if the experience enhanced autonomy and relatedness with peers (Allen et al. 1994).

Apart from its influence on these problem behaviors, little is known about the effects of adolescent volunteer work on *criminal* behavior more generally, in part because longitudinal data on volunteering and crime are rarely collected in the same survey. In the few existing studies that examine this relation, the critical difficulty is sorting processes of selection from processes of causation. In the Teen Outreach evaluation, for example, the authors caution that "unmeasured characteristics may also bias the results" since students self-select into the Teen Outreach program (Allen et al. 1994:636).

### **Selection: Volunteer Work as a Spurious Correlate**

Any significant negative association between volunteer work and antisocial behavior may be the result of self-selection into volunteer status. Persons choose to volunteer for a variety of altruistic and egoistic reasons (Bales 1996; Cnaan & Goldberg-Glen 1991; Murnighan, Kim & Metzger 1993; Piliavin & Charng 1990; Simmons 1991; Zweigenhaft et al. 1996). Janoski and Wilson (1995), for example, suggest that family socialization explains community-oriented volunteer participation and that status transmission explains self-oriented volunteer participation (see also Knoke & Thomson 1977). Many of the apparent motivations for volunteer work are likely to be related to criminal propensity and law violation. For example, those volunteering for altruistic reasons may be socialized to hold normative beliefs favoring helping behavior and citizen participation and opposing law violation. Those volunteering for strategic reasons may be more planful than nonvolunteers and hold higher achievement aspirations that would be jeopardized by criminal participation. In each case, such attitudes would inhibit or deter criminal activity, resulting in a negative association between volunteer work and crime.

Certain theories of crime also advance the selection argument. According to theories emphasizing the stability of criminal propensity (e.g., Gottfredson & Hirschi 1990), impulsivity or low self-control causes crime throughout the life course and is manifest in adolescence by smoking, alcohol use, and school misconduct. If volunteers are less impulsive than nonvolunteers and impulsivity is positively associated with crime, we would observe a negative bivariate association between volunteering and crime even in the absence of a causal relationship. If volunteer work is determined by self-selection, as Gottfredson and Hirschi (1990) would argue, adolescents exhibiting greater self-control would select into volunteering while those lacking self-control would select out of volunteering. In this case, the association between volunteer work and law violation would be spurious due to a common cause. More concisely, the selection hypothesis expresses the commonsensical view that good kids do good works and would refrain from crime even in the absence of volunteer participation.

### **Causation: Volunteer Work as Informal Social Control**

In contrast to the self-selection explanation, most criminological theories would adopt some variant of Tocqueville's ([1835] 1956) supposition that "by dint of working for one's fellow-citizens, the habit and the taste for serving them is at length acquired" (197). That is, they would interpret all or part of the association between volunteer work and arrest as evidence denoting a causal relationship. Criminologists from several disparate theoretical traditions emphasize the efficacy of informal social controls in inhibiting deviance. The causal argument, that

volunteering reduces crime, is offered by social control theories (Hirschi 1969; Sampson & Laub 1993), differential association and learning theories (Akers et al. 1979; Volkman & Cressey 1963), and reintegrative theories (Braithwaite 1989).

According to social control theories, most teenagers develop a “stake in conformity” (Toby 1957) during the transition to adulthood by adopting age-graded school and work roles. Commitment to conventional lines of action may take the form of educational achievement, postponement of “adult” activities such as substance use, and dedication to long-term academic and occupational goals. In terms of Hirschi’s (1969) social control theory, volunteer work is both a behavioral manifestation of a well-developed bond to society and a factor augmenting that bond by involving youth in prosocial activities and exposing them to informal social controls.

Differential association (Sutherland 1939) and social learning (Akers et al. 1979) theories also stress informal controls, though these theories posit that such controls may promote as well as suppress law violation. If the volunteer setting serves as a locus of association, however, it is likely to impart definitions unfavorable to law violation. Even when the experience leads to direct contact with law violators, as may be the case in police or correctional settings, the volunteer’s most frequent, intimate, and prestigious associations will occur among criminal justice professionals rather than criminals (Sutherland 1974). Thus, differential association theory as well as social control theory would predict a causal relationship between volunteer work and crime.

For youth already exhibiting problem behaviors, volunteering could be a means of social reintegration. Braithwaite’s (1989) theory of reintegrative shaming suggests that volunteer work promotes law-abiding, prosocial behavior by reconnecting youth with reciprocal networks of social obligation. Placing delinquent youth into volunteer opportunities alongside conforming peers fosters these social attachments and thereby reintegrates the individual into mainstream activities. Along with its reintegrative benefits, volunteer work could also impart prosocial attitudes to deviant adolescents. If delinquent youth are in fact modeling the behavior of their delinquent peers, then the prosocial models available in volunteer experiences may temper negative peer influences in adolescence (see Ploeger 1997).

### **Life-Course Contingencies**

The levels of both volunteering and crime change over the life course. A curvilinear relationship between age and volunteerism has been observed in several studies: volunteer participation is low as single persons marry and have children, rises as their children enter school and leave home, and decreases with age and illness (Knoke & Thomson 1977; Sundeen 1990; Wilson & Musick 1997a). In current volunteer service initiatives, “youth are often made a special focus” (Nolin et al.

1997:1) to capitalize on the apparent malleability of attitudes and behaviors during adolescence. Volunteer opportunities during this period are thought to stimulate civic engagement among all youth and serve as a potential turning point for antisocial youth, altering trajectories of deviant behaviors before the transition to adulthood. If volunteer work strengthens social bonds to work, family, and community, it is also likely to modify childhood pathways to crime and conformity (Sampson & Laub 1993).

In addition to age-graded changes in the *levels* of volunteering and crime, however, the magnitude and even the direction of volunteer effects may depend on the life-course stage of volunteers. If volunteerism is analogous to other informal social controls, its effects on deviant behavior are likely to be age-specific. For example, the literature on adolescent employment and antisocial behavior suggests a positive association between employment and crime (Ploeger 1997) and between work intensity and substance use (Bachman & Schulenberg 1993; National Research Council 1998) during the high school years. In early adulthood, however, employment and work intensity are negative predictors of crime, arrest, and substance use (Farrington et al. 1986; Sampson & Laub 1993; Shover 1996). Most observers believe that any type of volunteer work will be beneficial at any age. Studies of work and crime, however, caution that some types of experiences may have stronger effects than other types (Uggen 1999) and that premature entry into volunteer work may be less beneficial than age-appropriate volunteer service (Bachman & Schulenberg 1993). To date, however, little research has been conducted on the age-appropriateness of volunteer work generally or of specific types of volunteer service.

## Data and Measures

### DATA

We analyze data collected during the first eight waves of the Youth Development Study (YDS), a prospective longitudinal investigation of the causes and consequences of adolescent work. The YDS is a community study of 1,139 adolescents in St. Paul, Minnesota, a midwestern U.S. city with a 1990 population of 272,000 in a metropolitan area of 2.5 million (U.S. Bureau of the Census 1997). During the first wave of data collection, youth completed questionnaires in their school classrooms or responded by mail if absent when surveys were administered. In terms of race, family composition, median household income, education, and occupation level, the sample is representative of the general population of students in St. Paul public schools (Finch et al. 1991). The panel was surveyed annually beginning in 1988, when the adolescents were in ninth grade. From 1988 until 1991, the survey was administered in school; the retention rate for this period is

93%. In the spring of 1995, approximately four years after most participants had graduated from high school, an extensive life-event calendar was mailed to respondents. Almost 78% of the original participants were retained through this 1995 survey. Data on adolescent volunteer work and antisocial adolescent behaviors were gathered from respondents in waves 1 through 8 (1988-95, approximately ages 14-22). Arrest data were gathered in wave 8 (1995), using retrospective reports for the period 1991-95, when respondents were 17 to 21 years old.

#### DEPENDENT VARIABLE: SELF-REPORTED ARREST

The arrest measure, taken in the 1995 survey, indicates whether respondents had been arrested and, if so, in which years they had been arrested between 1991 and the first six months of 1995. The principal objection to the use of arrest outcomes to test criminological theories is that these data could reflect police discretion as well as offender behavior. The empirical literature is divided on the role of extralegal factors on arrest decisions, though many argue that police discretion works against males (Visher 1983, but see Krohn, Curry & Nelson-Kilger 1983; Uggen & Kruttschnitt 1998), nonwhites (Dannefer & Schutt 1982; Smith & Visher 1981; but see Wilbanks 1987), and the poor (Wolfgang, Thornberry & Figlio 1987). Nevertheless, self-reported arrest data are suitable for the purposes of this article. Research on police and victim behavior consistently shows crime severity to be the strongest predictor of whether an offense is reported and an arrest made (see Black 1980; Gottfredson & Gottfredson 1988). Though arrestees represent an imperfect subset of all law violators, the former group is likely to be comprised of more frequent or serious young offenders. Moreover, in the analysis to follow, we use covariate adjustment to statistically control for factors such as race, sex, and income that are likely to be related to both arrest and volunteer work (Gillespie & King 1985; McPherson 1981; Trudeau & Devlin 1996).

Though the relative merits of self-report and official data sources have been hotly debated, reverse police record checks suggest that self-reported arrest data are reasonably reliable and valid by most social scientific standards (Hindelang, Hirschi & Weis 1981; Schore, Maynard & Piliavin 1979). Because persons are more likely to underestimate the number of times they had been arrested than to err in reporting whether they had been arrested (Schore, Maynard & Piliavin 1979), analytic techniques measuring participation or prevalence are less likely to be biased by underreporting than those based on frequency or incidence outcomes.<sup>4</sup>

The dichotomous arrest outcome signals the application of formal social control but does not indicate the type or nature of the arrest. Although offense-specific arrest data are unavailable for YDS participants, we present some closely related aggregate information to convey the extent, character, and distribution of arrest

for youth in this cohort. Table 1 shows the arrest distribution among Minnesotans aged 14 in 1988 for the years 1991-95 (Minnesota Department of Public Safety 1986-96), when the corresponding cohort of YDS participants was 17 to 21 years old. Overall, approximately 20% of all arrests among this group were part I index offenses.<sup>5</sup> This category includes the eight major serious offenses reported in the FBI Uniform Crime Reports: murder, rape, robbery, aggravated assault, burglary, larceny-theft, motor vehicle theft, and arson. In this and other cohorts, the majority of arrests for Part I index offenses were for larceny-theft.

The offense mix changes somewhat as the cohort ages. Over time, arrests for larceny-theft decline while arrests for fraud, narcotics, and DUI (driving under the influence) increase. The majority of arrests among 17-year-olds in 1991 were for liquor law infractions (27%), larceny (18%), and status offenses such as curfew violation and running away (6%). In 1995, the last year for which YDS arrest data were collected, 18% of the arrests of 21-year-olds in this Minnesota cohort were for DUI, with assault or aggravated assault contributing an additional 11% and fraud 7%.<sup>6</sup> In summary, if the arrest characteristics of YDS participants were similar to those of the larger Minnesota cohort from which they came, the majority of their arrests would have been for drug- and alcohol-related offenses and larceny-theft.

Figure 1 shows the trend in total arrests for this cohort over the 1988-96 period. The overall arrest rate for the Minnesota cohort peaks in 1993, when most participants were 19 years old and one year removed from high school. Because the YDS data do not indicate whether a person had been arrested prior to 1991, left-censoring (Allison 1995; Yamaguchi 1991) remains a potential problem in these data. Nevertheless, there were likely few arrests for serious offenses that would have permanently removed persons from the risk set. Moreover, from 1988 to 1995 Minnesota had the second-lowest incarceration rate in the nation (U.S. Department of Justice 1998b). Even if YDS participants had been arrested prior to 1991, it is extremely unlikely that they would have been removed from the risk set for more than one year. The vast majority of participants were therefore at risk of arrest for the entire observation period from 1991 to 1995.

For both theoretical and practical reasons, we limit our investigation to the timing of the *first* arrest between 1991 and 1995. Because of the uniqueness of the first arrest, it may be misleading to pool each of the intervals together and estimate a single model. Pooling the intervals would also introduce dependence among the multiple observations, biasing standard errors and test statistics. Nor do we have enough subjects at risk of a second arrest to merit a separate quantitative analysis. First, of the 79 persons who experienced at least one arrest, only 22 experienced a second arrest. Moreover, we know only whether a person was arrested in a given year, rather than the total number of times that a person was arrested or the duration between arrests in a given year. We therefore analyze the time until the first arrest using a one-record-per-person data structure rather than a pooled sample of "person-years." For example, a person arrested in years 2 and 5 would be



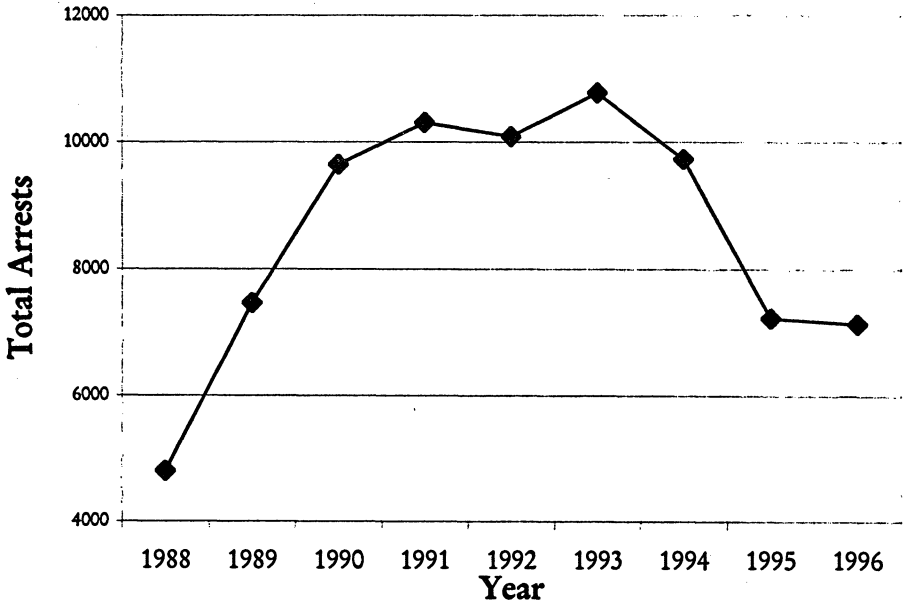
**TABLE 1: Arrest Distribution for Minnesotans Aged 14 in 1988  
(Selected Offenses)<sup>a</sup>**

Offense	1991 (Age 17)	1992 (Age 18)	1993 (Age 19)	1994 (Age 20)	1995 (Age 21)	Total
<b>Part I Arrests</b>						
Aggravated assault	240 (2)	171 (2)	192 (2)	195 (2)	147 (2)	945 (2)
Auto theft	482 (5)	238 (2)	175 (2)	110 (1)	85 (1)	1,090 (2)
Larceny	1,828 (18)	1,306 (13)	1,032 (10)	701 (7)	562 (8)	5,429 (11)
<b>Part II Arrests</b>						
Fraud	104 (1)	302 (3)	559 (5)	436 (4)	535 (7)	1,936 (4)
Narcotics	241 (2)	409 (4)	613 (6)	737 (8)	643 (9)	2,643 (5)
Other assault	545 (5)	510 (5)	614 (6)	568 (6)	650 (9)	2,887 (6)
DUI	299 (3)	576 (6)	787 (7)	849 (9)	1,310 (18)	3,821 (8)
Liquor laws	2,758 (27)	3,295 (33)	3,207 (30)	3,030 (31)	194 (3)	12,484 (26)
Status offenses	595 (6)	—	—	—	—	595 (1)
<b>Part I total</b>	<b>3,080 (30)</b>	<b>2,317 (23)</b>	<b>1,879 (17)</b>	<b>1,333 (14)</b>	<b>1,016 (14)</b>	<b>9,625 (20)</b>
<b>Part II total</b>	<b>7,221 (70)</b>	<b>7,764 (77)</b>	<b>8,892 (83)</b>	<b>8,395 (86)</b>	<b>6,210 (86)</b>	<b>38,482 (80)</b>
<b>Grand total</b>	<b>10,301</b>	<b>10,081</b>	<b>10,771</b>	<b>9,728</b>	<b>7,226</b>	<b>48,107</b>

<sup>a</sup> Percentages appear in parentheses and indicate the number of arrests within each category divided by the arrest grand total, the quantity multiplied by 100.

treated as having experienced the event (with arrest state equal to 1 rather than 0) with the time until arrest equal to the number of years prior to the first arrest (arrest duration equal to 2 years).

FIGURE 1: Total Arrests by Year for Minnesota Cohort Aged 14 in 1988



**INDEPENDENT VARIABLES**

Although the Youth Development Study did not randomly assign youth to volunteer experiences, its longitudinal design, repeated measures, and detailed data on both volunteer status and arrest allow us to partially test the selection and causation hypotheses. Because adolescent employment is the focus of the YDS investigation, Mortimer (N.d.) and her colleagues have collected a rich array of volunteer and employment information.

*Adolescent Volunteer Work*

We measure participation in volunteer work during the third and fourth wave of data collection when respondents were in the eleventh and twelfth grade. Volunteer status thus intervenes temporally between the background and control variables measured during the first wave of the survey and the arrest outcome measured during the fifth through the eighth waves. If the respondents were currently doing any volunteer work in either the eleventh or twelfth grade, they are coded "1";

otherwise they are coded "0." The quality of YDS data on volunteer work improved over the first four waves of data collection. Wave 1 data are particularly problematic because respondents were not asked the title of their volunteering organizations. As we discuss below, this omission is important because several youth appeared to consider work in private businesses or within their own household as "volunteer" experiences. We initially measure volunteer work in the junior and senior years of high school (eleventh and twelfth grade) and use any previous volunteer work as a control for prior prosocial behavior in the multivariate analysis. We then allow the effects of volunteerism to vary over the entire observation period by modeling volunteer work as a lagged time-varying covariate.

#### *Demographic Factors That May Bias the Arrest Decision*

Because police discretion in the arrest decision may work against groups with a lesser propensity to volunteer, we adjust the effects of volunteer work on arrest by introducing demographic factors as covariates. In all multivariate models, we include indicators of white (vs. nonwhite) race, sex, and family income, all taken at wave 1, when respondents were in the ninth grade.

#### *Prosocial Attitudes*

According to the selection argument, persons enter volunteer service already holding prosocial beliefs and attitudes and would be less likely to be arrested even in the absence of their volunteer experiences. We therefore wish to estimate the net effect of volunteer status after statistically controlling for prosocial attitudes and behaviors at baseline. Two measures of prosocial attitudes, addressing citizen participation (see, e.g., Serow 1990, 1991) and helping personality (Hobfoll 1980; Omoto & Snyder 1995), were taken in the first wave of data collection. We assess citizen participation by an item asking youth the importance of "participating as a citizen in their communities" as adults. Helping personality is measured by the stated importance of "a chance to be helpful to others or useful to society" in the youth's chosen field of work. Each of these items is measured on a four-point scale ranging from not at all important to extremely important.

#### *Antisocial Propensity*

We use a number of ninth-grade (wave 1) school conduct and substance use items to indicate criminal propensity (Gottfredson & Hirschi 1990). These measures of "analogous imprudent behavior" are both outcomes of low self-control and indicators of low self-control's effects on crime (Evans et al. 1997:475). School misconduct is assessed by the number of times the student has "gotten into trouble for misbehaving or breaking school rules" and the number of visits to the principal's office or detention room for misbehavior. Dichotomous

indicators of early smoking and drinking behavior, taken in ninth grade, when most participants were 14 or 15 years old, measure substance use.

*Commitment to Conventional Lines of Action*

Commitment to conventional activities is likely to affect both volunteering and criminal behavior. Because the school is the most salient conventional institution for most adolescents (Hirschi 1969), we adjust volunteer effects for educational achievement and aspirations. At wave 1, we measure educational achievement by a standard four-point indicator of grade point average and educational aspirations by a six-point ordinal measure ranging from less than high school to Ph.D./professional.<sup>7</sup> In terms of time allocation, volunteering may be viewed as a substitute for either paid employment (Wilson & Musick 1997b) or extracurricular school activities (Hanks & Eckland 1978). We therefore statistically control for these factors. The multivariate models also include a dichotomous early employment measure, indicating whether the youth had ever worked for pay and the number of hours of participation in extracurricular activities. Each of these measures was taken at the first wave of data collection, when respondents were in the ninth grade.

*Time-Varying Status Transitions*

Developmental and life-course research on deviant behavior suggests that the effects of work, family, and school commitments vary with age. A precocious or premature transition to adult work roles, for example, is positively related to deviant behavior among adolescents (Bachman & Schulenberg 1993). Volunteer participation is also responsive to changes in work and family statuses (Knoke & Thomson 1977; Sundeen 1990; Wilson & Musick 1997a). In our time-varying models of volunteer status and arrest, we therefore model the effects of employment, school enrollment, marital status, and childbearing as time-dependent covariates as well.

We follow Allison's (1995) procedure for computing lagged time-dependent covariates and estimate their effects using SAS PROC PHREG. The value of each time-dependent indicator is determined in the period immediately preceding the interval in which the outcome or censoring occurs. For example, the value for "children" for someone arrested in year 4 is determined by whether the respondent reported having children in year 3. Each of the fixed covariates is measured at the time origin, or at the beginning of YDS data collection, when respondents were in ninth grade.

## ESTIMATION: EVENT HISTORY ANALYSIS OF THE TIME TO ARREST

The YDS data contain arrest information on a life-event calendar collected at the eighth wave of data collection, in which respondents were asked whether they had been arrested in 1991, 1992, 1993, 1994, and the first six months of 1995. For these data, event history analysis has several advantages over cross-sectional or panel methods (Allison 1995; Yamaguchi 1991). By considering the timing as well as the occurrence of arrest, event history analysis increases the precision of estimates, aids in determining temporal order, appropriately models censored cases, and allows the effects of volunteer status and other social positions to vary with time. In contrast, a logistic regression approach would ignore the duration until arrest (treating 1992 arrests the same as 1995 arrests), and an ordinary least squares regression of the time to arrest would needlessly discard censored cases (those who were never arrested) or necessitate assigning arbitrary values to such cases.

## THE MODEL TO BE ESTIMATED

To identify sources of variation in the timing of arrest, we estimate Cox's proportional hazard model (Cox 1972). Under this specification, the dependent variable is the natural logarithm of the hazard of arrest — the instantaneous rate of arrest given that no prior arrest has yet occurred. Because we lack information on respondents' arrest statuses prior to 1991, the data may be left-censored for some respondents. Moreover, the data are interval-censored since only the year of arrest (rather than the precise day of arrest) is known. We therefore treat "ties" in the duration to arrest by a method assuming an underlying but unknown ordering for the tied event times (Allison 1995:127). In calculating duration to arrest, we specify the time origin as 1991. The Cox model does not specify a particular distribution for survival times, because the estimation method maximizes a partial likelihood that leaves the baseline hazard unspecified. Cox's model assumes that for any two persons, the ratio of their hazards is a constant that does not vary with time. This implies that covariates raise or lower individual hazard rates by a constant multiple at all time points.

We estimate models of the form

$$\log h_i(t) = \alpha_0(t) + \beta_1 X_{i1} + \beta_2 X_{i2}(t-1) + \dots + \beta_k X_{ik}$$

where  $\alpha_0(t)$  represents the natural logarithm of the unspecified baseline hazard function at time  $t$ ;  $X_1$  represents fixed explanatory variables;  $\beta_1$  represents the effects of these variables;  $X_2$  represents time-varying explanatory variables; and  $\beta_2$  represents the effects of these variables at time  $t-1$ . Each of the time-dependent covariates is thus lagged by one year to reduce ambiguity in the causal ordering of arrest and volunteering, work, school enrollment, marital status, and childbearing.

## ANALYTIC STRATEGY

We first present descriptive statistics on the independent variables and a nonparametric comparison of volunteers and nonvolunteers on the dependent variables. In our multivariate analysis, we initially estimate the effects of volunteering in the junior or senior year of high school after adjusting for extralegal factors related to arrest: race, sex, and household income. We then use covariate adjustment to control for factors likely to be related to selection into volunteering. In this specification, we add antisocial predispositions, prosocial attitudes, and potential substitutes for volunteering to the baseline model. We then estimate the volunteer effect net of each of the above factors as well as prior prosocial *behavior* in the form of volunteer work in ninth and tenth grade. Finally, we allow the volunteer effect and other time-varying social positions to change over the observation period. In the time-varying models, we estimate the effects of volunteer work in the previous year, the effects of particular types of volunteering, and the cumulative effects of the number of years of volunteer work on arrest.

## Results

### DESCRIPTIVE STATISTICS

Approximately 23% of the YDS respondents reported doing volunteer work in either their junior or senior year of high school.<sup>8</sup> Table 2 shows descriptive characteristics of volunteers and nonvolunteers. The t-tests compare volunteers with nonvolunteers on the characteristics to be statistically controlled in the multivariate analyses that follow: demographic and socioeconomic indicators, prosocial attitudes, antisocial propensity, and commitment to conventional lines of action. There are few statistically significant differences between the volunteer and nonvolunteer respondents, although volunteers were more likely to be white and reported greater family income, less trouble at school, and higher educational performance and aspirations.<sup>9</sup> Volunteers and nonvolunteers are quite similar on characteristics such as sex, substance use, employment history, and extracurricular participation. Somewhat surprisingly, neither the citizen participation nor the helping personality indicator is significantly associated with volunteer behavior, although volunteers score marginally higher on these measures than do nonvolunteers.

Arrest, on the other hand, is strongly correlated with volunteer experience in the bivariate case. Only 3% of the volunteers were arrested in the four years following high school, compared to 11% of the nonvolunteers. The correlates of volunteer work in the YDS are comparable to those obtained for community

TABLE 2: Descriptive Statistics by Volunteer Status in Eleventh or Twelfth Grade<sup>a</sup>

	Nonvolunteers	Volunteers
<b>Factors That May Bias Arrest Decision</b>		
Percent white (vs. nonwhite)*	64.64	72.61
Percent male (vs. female)	48.90	43.16
Family income (\$1,000s)*	32.75 (20.83)	36.86 (22.38)
<b>Prosocial Attitudes</b>		
Citizen participation (ordinal 1-4)	2.77 (.82)	2.80 (.82)
Helping personality (ordinal 1-4)	2.99 (.82)	3.03 (.84)
<b>Antisocial Propensity</b>		
School misconduct*	1.90 (1.74)	1.64 (1.56)
Visits to principal's office***	1.58 (1.80)	1.12 (1.55)
Percent alcohol use	71.38	73.50
Percent smoking	50.29	50.22
<b>Commitment to Conventional Lines of Action</b>		
Grade point average***	2.49 (.85)	2.86 (.73)
Educational aspirations (ordinal 1-6)***	4.44 (1.52)	4.82 (1.34)
Percent ever employed	72.24	79.06
Extracurricular hours	4.33 (6.38)	4.87 (5.12)
<b>Arrest</b>		
Percent arrested***	11.08	3.09
N	863	234

<sup>a</sup> Standard deviations of continuous variables are in parentheses.

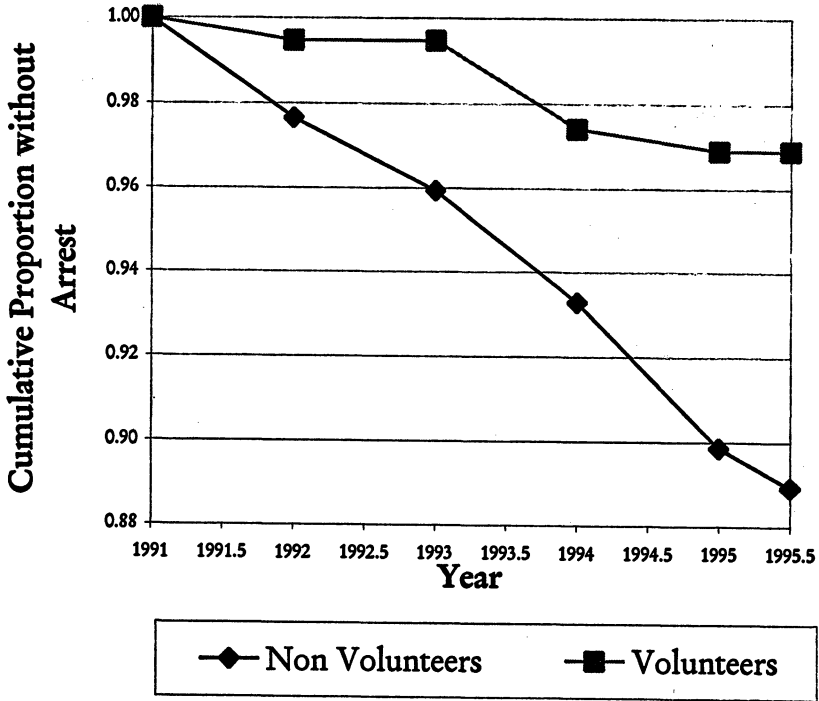
#  $p < .10$  \*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$  (two-tailed tests)

service participation by the National Household Education Survey (Nolin et al. 1997), although race and sex differences of comparable magnitude emerge as statistically significant in the latter, much larger data set.

#### NONPARAMETRIC SURVIVAL ANALYSES

Figure 2 shows the survival distribution of arrest by volunteer status. These curves represent the cumulative proportion of volunteer and nonvolunteer study

FIGURE 2: Survival Time to Arrest by Volunteer Status in Junior or Senior Year of High School



(N = 835)

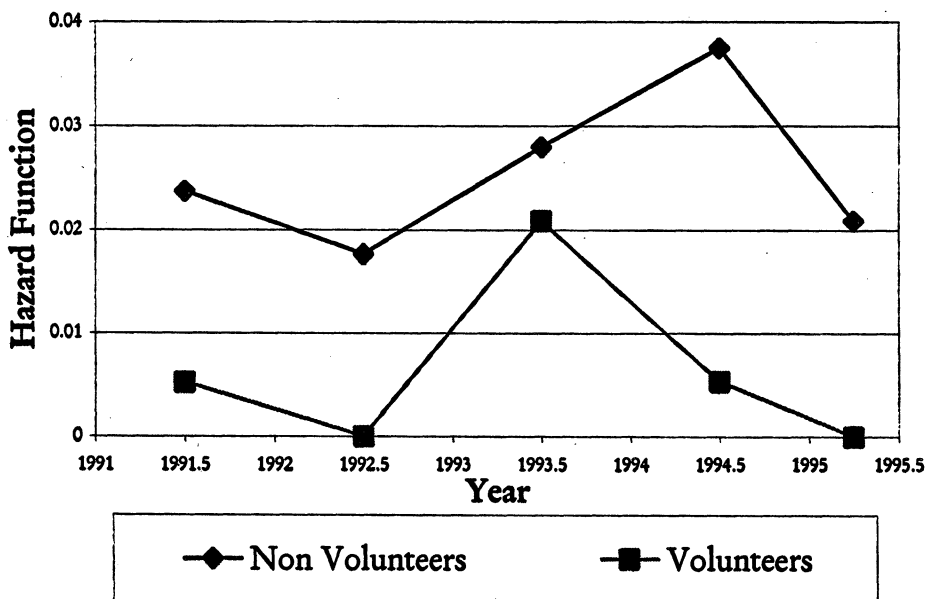
$\chi^2 = 12.9$  ( $p < .001$ )

participants who remained arrest-free during the observation period. The distributions show that nonvolunteers were much more likely to have been arrested than those volunteering in their junior or senior year of high school. By the end of 1993, when the participants were 19 or 20 years old, 99% of the volunteers had not yet been arrested, compared to 96% of the nonvolunteers. This 3% gap widens throughout the observation period to 8% in 1995, when most respondents were 21 or 22. A likelihood ratio test for equality of the volunteer and nonvolunteer curves is easily rejected at  $p < .001$ .

Figure 3 shows the hazard distributions for arrest, illustrating the risk of arrest for volunteers and nonvolunteers in each of the time intervals. The arrest hazard for both groups rises initially and peaks when most participants were 19 or 20 years old — in 1993 for volunteers and in 1994 for nonvolunteers. In event history analysis, unobserved heterogeneity may suggest a declining hazard even if the



**FIGURE 3: Hazard Time to Arrest by Volunteer Status in Junior or Senior Year of High School**



true hazard is not declining for any individual (see Allison 1995:234; Heckman & Singer 1985). Nevertheless, the duration structure of YDS arrest data is consistent with the aggregate cohort information illustrated in Figure 1, which also shows a 1993 peak in total arrests and a subsequent decline.

#### MULTIVARIATE MODELS

In Table 3, we present a series of nested proportional hazards models designed to test whether the volunteer effect observed in the survival and hazard distributions is a likely cause of arrest or simply a spurious negative correlate. In Model 1, we estimate the effect of volunteer work after adjusting for extralegal factors that may affect arrest. The exponentials of the parameter estimates in Cox models may be interpreted as relative risks, so that the  $-1.26$  coefficient for volunteer experience indicates that the hazard of arrest for volunteers is about 28% of the hazard of arrest for nonvolunteers ( $e^{-1.26} = .28$ ). Similarly, the hazard of arrest for males is about 374% ( $e^{1.32} = 3.74$ ) of the hazard for females, net of race, family income, and volunteer experience.<sup>10</sup>

TABLE 3: Proportional Hazards Models of Time to Arrest

	1	2	3
<b>Volunteer Work</b>			
Volunteer work (11th or 12th grade)	-1.26** (.43)	-1.07* (.43)	-1.17** (.44)
Prior volunteer work (9th or 10th grade)			.51# (.27)
<b>Factors That May Bias Arrest Decision</b>			
White (vs. nonwhite)	-.02 (.27)	-.47# (.28)	-.46# (.28)
Male (vs. female)	1.32*** (.26)	1.44*** (.27)	1.46*** (.27)
Family income (\$100s)	-.00 (.01)	-.00 (.01)	-.00 (.01)
<b>Prosocial Attitudes</b>			
Citizen participation		.29# (.16)	.30# (.16)
Helping personality		.13 (.17)	.12 (.16)
<b>Antisocial Propensity</b>			
School misconduct		.15 (.11)	.16 (.11)
Visits to principal's office		.18* (.09)	.17# (.10)
Alcohol use		.63# (.38)	.66# (.39)
Smoking		.11 (.23)	.07 (.23)
<b>Commitment to Conventional Lines of Action</b>			
Grade point average		-.18 (.16)	-.23 (.15)
Educational aspirations (1-6)		.07 (.08)	.08 (.08)
Employment dummy		.70* (.32)	.80* (.33)
Extracurricular hours		.01 (.02)	.01 (.02)
Number of observations	835	835	835
-2 log likelihood	680.0***	626.4***	616.8***
Generalized R <sup>2</sup>	.053	.117	.117
# p < .10 * p < .05 ** p < .01 *** p < .001 (two-tailed tests)			

Model 2 of Table 3 introduces a number of correlates of volunteering and arrest to determine whether the effect observed in Model 1 is an artifact of the selection process into volunteer status. We therefore estimate the impact of volunteering net of prosocial attitudes (citizen participation and helping personality), antisocial propensities (school misconduct and substance use), and commitment to conventional lines of action. Preexisting prosocial attitudes are not strong predictors of arrest in models that include behavioral indicators of volunteer work, although citizen participation has a marginally significant *positive* effect on arrest. The antisocial propensity indicators in Model 2 behave more consistently with theoretical expectations. Each visit to the principal's office, for example, increases the hazard of arrest by about 20% ( $100[e^{.18} - 1] = 19.7$ ). Alcohol use and early employment are also positive predictors of arrest in this model. Nevertheless, the inclusion of such measures fails to significantly diminish the effects of volunteer experience. In Model 2, the rate of arrest for volunteers is only about 34% of the rate of arrest among nonvolunteers, once these attitudes, predispositions, and other characteristics are statistically controlled.

Finally, in Model 3, we estimate the volunteer effect net of prosocial *behavior* (early volunteering) as well as each of the factors in Model 2. Net of early volunteering, the rate of arrest for eleventh- and twelfth-grade volunteers is again about 31% of the rate of arrest for nonvolunteers, and the remaining effects are largely unchanged. Again, females were less likely to be arrested than males and early alcohol use and school misconduct are marginally significant predictors.

The *positive* effect of prior volunteering in Model 3 is puzzling, even in an equation that includes later volunteer work and prosocial attitudes. Why do the arrest-reductive effects of volunteering emerge only in the late teen years? There are several reasons for the apparent age-graded effect of volunteer work on arrest. First, the later-volunteering indicator is based on more refined data regarding the organization and duties of the volunteer than is the earlier (ninth- and tenth-grade) indicator. Second, the eleventh- and twelfth-grade measure is temporally closer to the arrest-eligible years than is the earlier indicator. Finally, the volunteer effect may vary with the age of the volunteer.

The positive effect of early volunteering is not robust under alternative model specifications. When late volunteering is excluded from Model 3, the effect of early volunteer work remains positive, although it is no longer even marginally statistically significant.<sup>11</sup> To further explore this issue, we fit an interactive model with three dummy variables (representing volunteering at waves 1 and 2 only, volunteering at waves 3 and 4 only, and volunteering at both periods) to test whether those volunteering at *both* periods were particularly likely to avoid arrest. The additional term was not statistically significant, and the simple additive model provides the best fit to the data (analysis not shown). Nevertheless, since the results in Table 3 suggest a possible age-by-volunteer-status interaction, we sought

further information about changes in the nature or quality of the volunteer experience as adolescents enter the early adult transition period (Levinson 1986).

#### THE TYPE AND TIMING OF VOLUNTEER EXPERIENCE

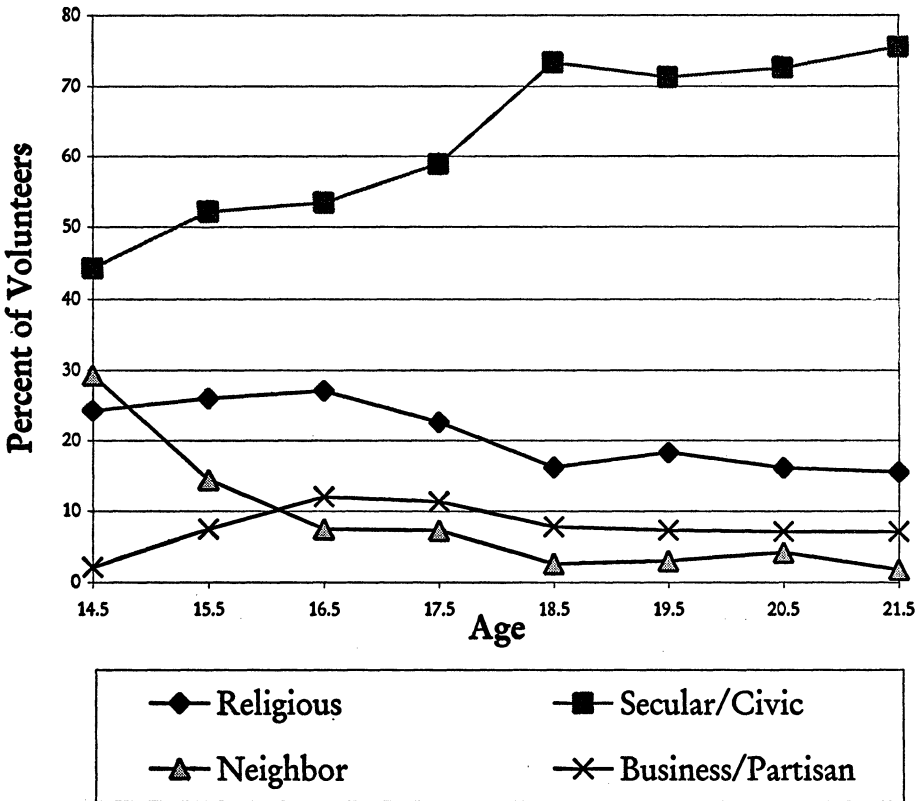
Figure 4 shows the evolution of volunteer experience from ages 14.5 to 21.5, corresponding to the first eight waves of data collection. We categorized these experiences into five general areas representing different modes of civic participation: religious (Wilson & Janoski 1995), secular-civic (Putnam 1995), informal neighboring (see Wilson & Musick 1997a), private business, and partisan-political. Our primary goals in the coding scheme were to track changes in volunteer experiences over time and to isolate the sorts of volunteer experiences targeted by recent policy initiatives. Because few volunteers reported private business or partisan-political experiences, the latter two categories are collapsed in Figure 4.

With few exceptions, we took the respondents at their word in defining whether an experience should qualify as volunteer work.<sup>12</sup> Our *religious* category includes such volunteer experiences as being a Sunday school teacher or child-care provider during church services. *Secular-civic* activities occur outside a religious, partisan, or private business setting and are exemplified by persons stocking food shelves or visiting elderly persons at a hospital. *Informal neighboring* includes helping activities without a formal organizational affiliation such as raking leaves, shoveling sidewalks, or walking neighbors' dogs. We classified as *private business* volunteering all unpaid activities at a for-profit enterprise, such as answering the telephone at a pizzeria. Finally, *partisan-political* volunteering represents respondents who wrote letters for Amnesty International, served on a Gulf War crisis hotline, or undertook similar activities.

The preponderance of volunteers in the YDS sample can be classified as secular-civic. Although it is difficult to disentangle age and period effects with these data, Figure 4 suggests an increasing proportion of secular-civic volunteers over the entire period and a steep decline in informal neighboring between the ninth and eleventh grade. The latter decline may be at least partially due to the lack of detailed data on the volunteer settings in the ninth grade — for this year our categorization is based on the duties alone, rather than on both the duties and the setting. We also note a moderate decline in religious volunteering and comparatively low levels of partisan political and private business volunteering throughout the period.

The relative stability from the ages of 14 to 21 in the prevalence of volunteerism is shown in Figure 5. During the early adult transition, school enrollment declines and employment, marriage, and childbearing rise significantly. In contrast, the overall level of volunteerism shows little fluctuation, with the

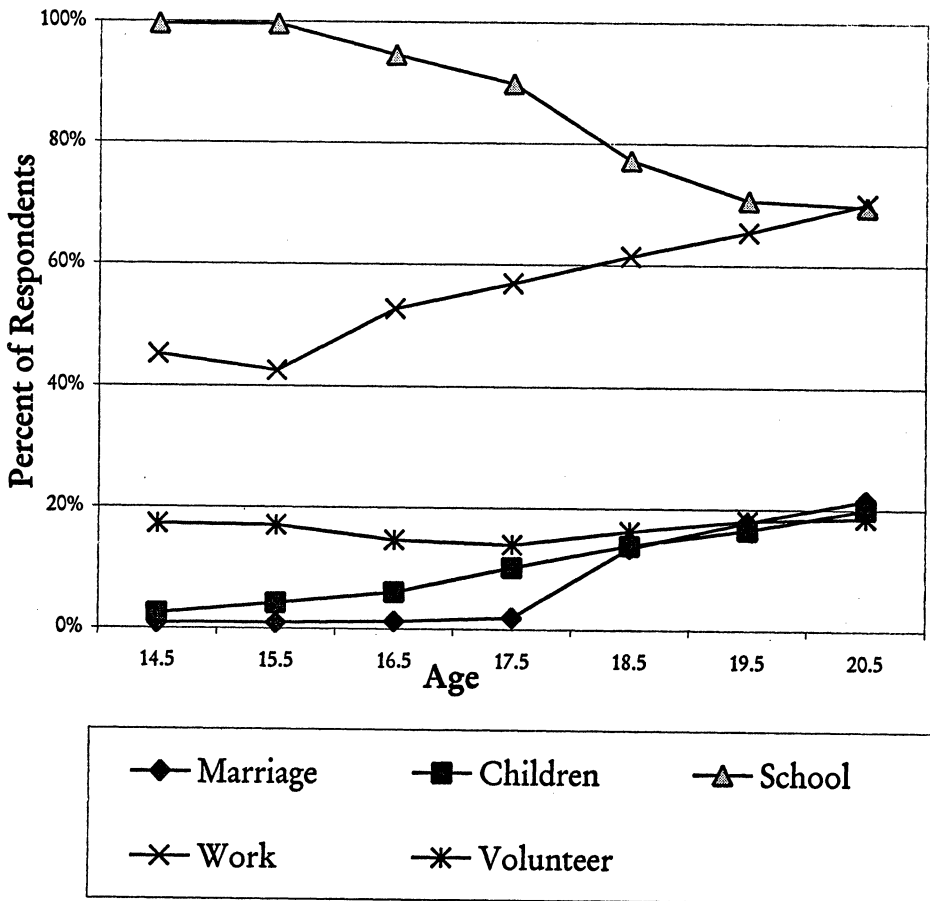
FIGURE 4: Distribution of Volunteer Experiences by Age



proportion of volunteers rising from a low of about 14% at age 16-17 to a peak at about 21% at age 20.5.

Table 4 presents estimates for proportional hazards models of the time to arrest with volunteer work, employment, school enrollment, marriage, and childbearing as lagged time-varying independent variables. In Model 1, the effects of school attendance and volunteer work are both significant negative predictors of the time to arrest. Model 2 includes each of the time-varying covariates as well as each of the significant or marginally significant fixed covariates from the models in Table 3. Since the inclusion of earlier background, attitudinal, and behavioral indicators in Model 2 dramatically reduces the estimate for school enrollment (and renders

FIGURE 5: Percentage Volunteering, Working, Attending School, Married, and Having Children by Age



it nonsignificant), the association between school enrollment and arrest can therefore be explained in large part by preexisting characteristics of students and nonstudents. The volunteer effect, in contrast, remains a strong and significant negative predictor of arrest. The estimate for volunteer work is  $-1.06$  in this equation, indicating that the hazard of arrest for those who had volunteered in the previous year is about 35% of the hazard of arrest for those who had not volunteered in the previous year. As Model 3 shows, the time-varying effect of volunteer work between the ages of 16 and 20 also holds after adjusting for the effects of early volunteer experience at ages 14 and 15.

TABLE 4: Time to Arrest with Time-Varying Covariates

	1	2	3	4	5
<b>Volunteer work</b>					
TVC: Volunteer work ( $t-1$ )	-1.37** (.52)	-1.06* (.52)	-1.14* (.52)		
TVC: Secular-civic volunteer ( $t-1$ )				-1.23# (.72)	
TVC: Cumulative volunteer work					-1.87** (.72)
Prior volunteer work (9th or 10th grade)			.39 (.27)		.50# (.27)
Prior secular-civic (9th or 10th grade)				.41 (.33)	
<b>Commitment to conventional lines of Action</b>					
TVC: School attendance ( $t-1$ )	-.74** (.26)	-.31 (.27)	-.31 (.27)	-.28 (.27)	-.31 (.27)
TVC: Employment ( $t-1$ )	.16 (.25)	.14 (.26)	.15 (.26)	.17 (.26)	.14 (.26)
TVC: Marriage ( $t-1$ )	-.47 (.43)	-.44 (.45)	-.43 (.46)	-.41 (.46)	-.38 (.46)
TVC: Children ( $t-1$ )	-.18 (.41)	.13 (.44)	.12 (.44)	.13 (.44)	.11 (.44)
Grade point average		-.18 (.15)	-.22 (.15)	-.23 (.15)	-.21 (.15)
Early employment dummy		.63* (.32)	.72* (.32)	.70* (.32)	.74* (.32)
<b>Factors that may bias arrest decision</b>					
White (vs. nonwhite)		-.57* (.26)	-.57* (.26)	-.58* (.26)	-.58* (.26)
Male (vs. female)		1.39*** (.27)	1.41*** (.27)	1.39*** (.27)	1.42*** (.27)
<b>Prosocial attitudes</b>					
Citizen participation		.28* (.14)	.30* (.15)	.30* (.15)	.31* (.15)
<b>Antisocial propensity</b>					
Visits to principal's office		.27*** (.07)	.26*** (.07)	.26*** (.07)	.25*** (.07)
Alcohol use		.60# (.36)	.61# (.36)	.61# (.36)	.64# (.36)
Number of observations	843	842	842	842	842
-2 log likelihood	713***	638***	629***	632***	625***
Generalized R <sup>2</sup>	.023	.112	.122	.119	.126

#  $p < .10$  \*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$  (two-tailed tests)

The number of persons volunteering in each category is too small to permit separate analyses for each category of volunteer work (see also Wilson & Musick 1997a:710). Since only about 20% of the sample was volunteering at any time and since so few of the volunteers were arrested, we do not present a multivariate analysis with indicator variables for each of the volunteer categories. Instead, Model 4 of Table 4 shows the effect of secular-civic volunteer work versus other types of volunteer work and the absence of volunteer work. The effects of this category are most salient to policy debates, since secular-civic volunteer work is more amenable to state action and social intervention than religious, partisan, or business volunteering. In this model, the effect of secular-civic volunteer work is slightly larger than the overall volunteer effect in Model 2, though its estimated standard error is considerably larger (owing to the smaller proportion of secular-civic volunteers). These results suggest that secular-civic volunteer experiences have arrest-reductive effects that are at least comparable to the effects of other types of volunteer work.<sup>13</sup>

Finally, Model 5 of Table 4 tests for a gradient between the number of years of volunteer service and the rate of arrest. The time-dependent covariate for cumulative volunteer work is calculated as the cumulative proportion of years volunteering from the junior year of high school (age 16-17) until one year prior to arrest or censoring. This cumulative effect is strong and significant in models with and without controls for early volunteer work at ages 14 and 15. Nevertheless, the marginally significant positive effect of early volunteering suggests that a simple cumulation of *all* possible years would ignore an important age dependency in the effects of volunteer experiences on arrest.

## Discussion

Our interest in the relation between volunteering and arrest in young adulthood derives from both policy and scientific concerns. In each case, the critical question is whether changing a person's status from nonvolunteer to volunteer would induce a change in that person's rate of criminal behavior. Is the volunteer experience transformative in itself? Or are both phenomena simply surface manifestations of preexisting attitudes and predispositions?

The most vexing methodological obstacle to answering this question has been the self-selection process that necessarily guides entry into volunteer work. Researchers cannot control this selection mechanism by randomly assigning persons to volunteer and nonvolunteer status without simultaneously altering the volunteer treatment condition itself. Although community service requirements are becoming increasingly prevalent in American high schools, for example, the compulsory nature of such requirements may fundamentally alter the character of the volunteer experience (Nirel et al. 1997; Sobus 1996; see also Cloud 1997).



Thus, these natural experiments are unlikely to provide definitive causal evidence about the effects of volunteer work.

This article has attempted to account for selection by statistically controlling for extralegal factors that may affect arrest, antisocial propensities, prosocial attitudes, commitment to conventional lines of action, and previous prosocial behavior. Our analysis suggests that high school juniors and seniors who participate in volunteer work have a lower rate of arrest in young adulthood. We find no evidence that this negative association between volunteer work and arrest is due to self-selection. Of course, the selection process has not been rendered "strongly ignorable" (Holland 1986) by this or any other observational study, and omitted variable bias remains a threat to estimates of volunteer effects on arrest. Nevertheless, the models in Tables 3 and 4 include those factors most likely to be related to both processes and thus appear to be properly specified. A second important caveat to these findings concerns possible biases in the arrest outcome. Future research could assess the robustness of our results by examining volunteer effects on self-reported law violation.

What is it about the volunteer experience that inhibits antisocial behavior? We suggest that the informal social controls emphasized in social bond (Hirschi 1969; Sampson & Laub 1990), social learning (Akers et al. 1979; Sutherland 1939; Volkman & Cressey 1963), and reintegrative theories (Braithwaite 1989) are the mechanism linking volunteer work and antisocial behavior. Informal social controls are consonant with Tocquevillian conceptions of "self-interest, rightly understood," in which volunteers are gradually socialized or "disciplined by habit rather than will" ([1835] 1994:123). Nevertheless, a critical test that arbitrates between these theories must await subsequent investigations.

Further specification of life-course contingencies in the relation between volunteer work and crime must also await future research. Perhaps volunteering between the ages of 16 and 21 is especially advantageous, as both academics and policymakers point to the formative character of this period (National Research Council 1998). By entering and committing to prosocial volunteer service, young adults may alter lifelong trajectories of deviant behavior, political participation, and civic engagement. Volunteering in the freshman and sophomore years of high school, however, does *not* appear to induce the same arrest-reductive effect as later volunteer work. In light of prior research on youth work intensity and deviance (Bachman & Schulenberg 1993; National Research Council 1998), we might speculate that early volunteerism signals a similarly precocious, and perhaps untimely, transition to adult roles.

This article suggests that volunteer work in the early adult transition period engenders a sizable reduction in the hazard of arrest. Ultimately, however, the study of volunteer participation and antisocial behavior must proceed at aggregate and historical levels of analysis. Would changes in rates of voluntary civic engagement similarly alter the deviant trajectories of nations or communities? To

the extent that volunteer work produces a public good, it benefits nonparticipants and participants alike (Coleman 1990). The crime-reductive potential of volunteer work is therefore even greater in the aggregate than in the sum of the individual effects revealed in this investigation.

## Notes

1. Since our investigation concerns the individual-level effects of volunteer experiences rather than macrohistorical trends in the prevalence of volunteerism, this article will not address the empirical status of such claims (for further discussion of this debate, see Putnam 1995; Lehmann 1996; Lipset 1996).
2. This was not the case for the participants in the Youth Development Study, on which we base our analysis. There was no community service requirement in the St. Paul, Minnesota, public schools during the study period.
3. The criminal justice literature on volunteerism also addresses the effectiveness of volunteer services provided by nonoffenders on reoffense by offenders. For example, Project Misdemeanant (Morris 1970) and initiatives based on this model (Frazier 1983) provided delinquent adolescents with volunteer adult mentors. Perversely, the latter investigation showed a *positive* relation between recidivism and the number of volunteers per inmate and the number of volunteer hours (Frazier 1983). Since such studies do not directly address the effects of volunteering on the volunteers themselves, we do not discuss them further (see also Kratcoski & Crittenden 1983; Parker & LaCour 1978; Scioli & Cook 1976).
4. Both Hindelang, Hirschi, and Weis (1981) and Schore, Maynard, and Piliavin (1979) found that blacks were likely to underreport relative to whites and Hispanics (Elliott & Ageton 1980; Huizinga & Elliott 1986, 1987). Because the majority of YDS participants are white, we are unable to estimate separate models for each race or ethnic group. Therefore, we acknowledge the potential for bias in the race coefficients and exercise caution in generalizing about racial differences on the basis of these models.
5. Part II offenses comprise all crimes other than index and minor traffic offenses and are generally regarded as less serious than part I or index offenses.
6. The steep decline in liquor law violations and increase in DUI arrests between 1994 and 1995 likely reflect the aging of the cohort past the 21-year-old legal drinking threshold.
7. In preliminary models, we also estimated the effects of conventional marital and family expectations. These were nonsignificant and are excluded from the final models below.
8. The prevalence of volunteer work during the high school years declines from a high of 17% in ninth grade to a low of 14% in twelfth grade. Overall, 43% of the respondents volunteered in at least one year, suggesting that the same students were not volunteering from year to year. Approximately 29% of the sample volunteered in either their freshman or sophomore year of high school, compared to 23% volunteering

in either their junior or senior year. Only 10% of the sample volunteered in both the early and late high school periods.

9. Although educational aspirations is an ordinal measure in the YDS, we treat it as continuous in this analysis. The specific coding and distribution is as follows: 1 = less than high school (1%); 2 = high school graduate (10%); 3 = associate's degree (9%); 4 = bachelor's degree (31%); 5 = master's degree (20%); and 6 = Ph.D. or professional degree (29%).

10. To reduce the effect of missing values, we imputed the mean value for cases missing values on three control variables: race (missing 2.3% of all cases), family income (missing 6.3% of all cases), and prior volunteer work (missing .096% of all cases). We include exogenous dummy variables to control for this imputation procedure. This increases sample size from 746 to 835 and yields estimates that are almost identical to those in models using listwise deletion.

11. In the model excluding later volunteering, the effect of early volunteering is no longer statistically significant:  $b = .31$ ;  $SE = .27$ .

12. In some cases, respondents reported paid work or participation in a treatment program as volunteer experiences. In such cases, we coded the current year as missing information on volunteer status, imputed data from the previous year, and estimated the equation with indicator variables for missing data as discussed in note 10 above.

13. In models that include indicator variables for both secular-civic and non-secular-civic volunteering (with nonvolunteers as the omitted category), only the former effect is statistically significant, although the difference between the two effects is not statistically significant (analysis not shown).

## References

- Akers, Ronald L., Marvin D. Krohn, Lonn Lanza-Kaduce, and Marcia Radosevich. 1979. "Social Learning and Deviant Behavior: A Specific Test of a General Theory." *American Sociological Review* 44:636-55.
- Allen, Joseph P., Gabe Kuperminc, Susan Philliber, and Kathy Herre. 1994. "Programmatic Prevention of Adolescent Problem Behaviors: The Role of Autonomy, Relatedness and Volunteer Service in the Teen Outreach Program." *American Journal of Community Psychology* 22:617-37.
- Allison, Paul D. 1995. *Survival Analysis Using the SAS System*. SAS Institute.
- Bachman, Jerald G., and John Schulenberg. 1993. "How Part-Time Work Intensity Relates to Drug Use, Problem Behavior, Time Use, and Satisfaction among High School Seniors: Are These Consequences or Merely Correlates?" *Developmental Psychology* 29:220-35.
- Bales, Kevin. 1996. "Measuring the Propensity to Volunteer." *Social Policy and Administration* 30:206-26.
- Black, Donald. 1980. *The Manners and Customs of the Police*. Academic Press.
- Braithwaite, John. 1989. *Crime, Shame, and Reintegration*. Cambridge University Press.
- Cloud, John. 1997. "Involuntary Volunteers." *Time*, December 1, p. 76.

- Cnaan, Ram A., and Robin S. Goldberg-Glen. 1991. "Measuring Motivation to Volunteer in Human Services." *Journal of Applied Behavioral Science* 27:269-84.
- Coleman, James S. 1990. *Foundations of Social Theory*. Belknap.
- Cox, David R. 1972. "Regression Models and Life Tables." *Journal of the Royal Statistical Society*, ser. B34:187-220.
- Curtis, James E., Edward Grabb, and Douglas Baer. 1992. "Voluntary Association Membership in Fifteen Countries." *American Sociological Review* 57:139-52.
- Dannefer, Dale, and Russell Schutt. 1982. "Race and Juvenile Justice Processing in Court and Police Agencies." *American Journal of Sociology* 87:1113-32.
- Dionne, E.J., Jr. 1991. *Why Americans Hate Politics*. Simon & Schuster.
- Elliott, Delbert S., and Suzanne S. Ageton. 1980. "Reconciling Race and Class Differences in Self-Reported and Official Estimates of Delinquency." *American Sociological Review* 45:95-110.
- Elshtian, Jean Bethke. 1995. *Democracy on Trial*. Harper Collins.
- Evans, T. David, Francis T. Cullen, Velmer S. Burton, Jr., R. Gregory Dunaway, and Michael Benson. 1997. "The Social Consequences of Self-Control: Testing the General Theory of Crime." *Criminology* 35:475-501.
- Farrington, David P., Bernard Gallagher, Lynda Morley, Raymond J. St. Ledger, and Donald J. West. 1986. "Unemployment, School Leaving and Crime." *British Journal of Criminology* 26:335-56.
- Finch, Michael D., Michael J. Shanahan, Jeylan T. Mortimer, and Seongryeol Ryu. 1991. "Work Experience and Control Orientation in Adolescence." *American Sociological Review* 56:597-611.
- France, Alan. 1998. "'Why Should We Care?': Young People, Citizenship and Questions of Social Responsibility." *Journal of Youth Studies* 1:97-111.
- Frazier, Charles E. 1983. "Evaluation of Youth Services Programs: Problems and Prospects from a Case Study." *Youth and Society* 14:335-62.
- Gillespie, David F., and Anthony King. 1985. "Demographic Understanding of Volunteerism." *Journal of Sociology and Social Welfare* 8:503-16.
- Gitlin, Todd. 1995. *The Twilight of Common Dreams*. Henry Holt.
- Gottfredson, Michael R., and Denise M. Gottfredson. 1988. *Decision Making in Criminal Justice: Toward a Rational Exercise of Discretion*. 2nd ed. Plenum.
- Gottfredson, Michael R., and Travis Hirschi. 1990. *A General Theory of Crime*. Stanford University Press.
- Hamilton, Stephen F. 1981. "Adolescents in Community Settings: What Is to Be Learned?" *Theory and Research in Social Education* 9:23-38.
- Hanks, Michael. 1981. "Youth, Voluntary Associations and Political Socialization." *Social Forces* 60:211-23.
- Hanks, Michael, and Bruce K. Eckland. 1978. "Adult Voluntary Associations and Adolescent Socialization." *Sociological Quarterly* 19:481-90.
- Hanson, JoAnn M. 1985. "Volunteerism among First Offenders: Community Service as Adult Development." *Journal of Voluntary Action Research* 14:142-9.

- Heckman, James J., and Burton Singer. 1985. "Social Science Duration Analysis." Pp. 39-110 in *Longitudinal Studies of Labor Market Data*, edited by James J. Heckman and Burton Singer. Cambridge University Press.
- Hindelang, Michael J., Travis Hirschi, and Joseph G. Weis. 1981. *Measuring Delinquency*. Sage.
- Hirschi, Travis. 1969. *Causes of Delinquency*. University of California Press.
- Hobfoll, Steven E. 1980. "Personal Characteristics of the College Volunteer." *American Journal of Community Psychology* 8:503-6.
- Holland, Paul W. 1986. "Statistics and Causal Inference." *Journal of the American Statistical Association* 81:945-60.
- Huizinga, David, and Delbert S. Elliott. 1986. "Reassessing the Reliability and Validity of Self-Report Delinquency Measures." *Journal of Quantitative Criminology* 2:293-327.
- . 1987. "Juvenile Offenders: Prevalence, Offender Incidence, and Arrest Rates by Race." *Crime and Delinquency* 33:206-33.
- Independent Sector. 1995. "Volunteering and Giving among Americans." Gallup Organization.
- Janeksela, Galan. 1992. "The Significance of Comparative Analysis of Juvenile Delinquency and Juvenile Justice." *International Journal of Comparative and Applied Criminal Justice* 16:137-47.
- Janoski, Thomas, and John Wilson. 1995. "Pathways to Volunteerism: Family Socialization and Status Transmission Models." *Social Forces* 74:271-92.
- Johnson, Monica K., Timothy Beebe, Jeylan Mortimer, and Mark Snyder. 1998. "Volunteerism in Adolescents: A Process Perspective." *Journal of Research on Adolescence* 8:309-32.
- King, Mark, Leopold O. Walder, and Stanley Pavey. 1970. "Personality Change as a Function of Volunteer Experience in a Psychiatric Hospital." *Journal of Consulting and Clinical Psychology* 3:423-5.
- Knoke, David, and Randall Thomson. 1977. "Voluntary Association Membership Trends and the Family Life Cycle." *Social Forces* 56:48-65.
- Kratcoski, Peter C., and Sue Crittenden. 1983. "Criminal Justice Volunteerism: A Comparison of Adult and Juvenile Agency Volunteers." *Journal of Offender Counseling, Services, and Rehabilitation* 7:5-14.
- Krohn, Marvin, James Curry, and Shirley Nelson-Kilger. 1983. "Is Chivalry Dead? An Analysis of Changes in Police Dispositions of Males and Females." *Criminology* 21:417-37.
- Lemann, Nicholas. 1996. "Kicking in Groups." *Atlantic Monthly* 277:22-26.
- Levinson, Daniel J. 1986. "A Conception of Adult Development." *American Psychologist* 41:3-13.
- Lipset, Seymour Martin. 1996. *American Exceptionalism: A Double-Edged Sword*. W.W. Norton.
- Logan, Richard. 1985. "Youth Volunteerism and Instrumentality: A Commentary, Rationale and Proposal." *Journal of Voluntary Action Research* 14:45-48.
- Mauer, Marc. 1997. "Americans behind Bars: U.S. and International Use of Incarceration, 1995." The Sentencing Project, Washington D.C.
- McPherson, J. Miller. 1981. "A Dynamic Model of Voluntary Affiliation." *Social Forces* 59:705-28.

**360 / Social Forces 78:1, September 1999**

- Minnesota Department of Public Safety. Bureau of Criminal Apprehension. 1986-96. *Minnesota Crime Reports*. St. Paul, Minn.
- Moore, Cynthia W., and Joseph A. Allen. 1996. "The Effects of Volunteering on the Young Volunteer." *Journal of Primary Prevention* 17:231-58.
- Morris, Joe Alex. 1970. *First Offender: A Volunteer Program for Youth in Trouble with the Law*. Funk and Wagnalls.
- Mortimer, Jeylan T. N.d. *Work Experience: Adolescence and the Transition to Adulthood*. Harvard University Press. Forthcoming.
- Murnighan, J. Keith, Jae Wook Kim, and A. Richard Metzger. 1993. "The Volunteer Dilemma." *Administrative Science Quarterly* 38:515-38.
- National Research Council. Committee on the Health and Safety Implications of Child Labor. 1998. *Protecting Youth at Work: Health, Safety, and Development of Working Children and Adolescents in the United States*. National Academy Press.
- Nirel, Ronit, Simha F. Landau, Leslie Sebba, and Bilha Sagiv. 1997. "The Effectiveness of Service Work: An Analysis of Recidivism." *Journal of Quantitative Criminology* 13:73-92.
- Nolin, Mary Jo, Bradford Chaney, Chris Chapman, and Kathryn Chandler. 1997. *Student Participation in Community Service Activity*. National Center for Education Statistics.
- Oesterle, Sabrina, Monica Kirkpatrick Johnson, and Jeylan T. Mortimer. 1998. "Volunteerism during the Transition into Adulthood." Paper presented at the annual meeting of the American Sociological Association, August, San Francisco.
- Omoto, Allen M., and Mark Snyder. 1995. "Sustained Helping without Obligation: Motivation, Longevity of Service, and Perceived Attitude Change among AIDS Volunteers." *Journal of Personality and Social Psychology* 68:671-86.
- Parker, Jack B., and John A. LaCour. 1978. "Common Sense in Correctional Volunteerism in the Institution." *Federal Probation* 32:43-48.
- Philliber, Susan, and Joseph P. Allen. 1992. "Life Options and Community Service: Teen Outreach Program." Pp. 139-55 in *Preventing Adolescent Pregnancy: Model Programs and Evaluations*, edited by Brent C. Miller, Josefina J. Card, Roberta L. Paikoff, and James L. Peterson. Sage.
- Piliavin, Jane A., and Hong-Wen Charng. 1990. "Altruism: A Review of Recent Theory and Research." *Annual Review of Sociology* 16:27-65.
- Ploeger, Mathew. 1997. "Youth Employment and Delinquency: Reconsidering a Problematic Relationship." *Criminology* 35:659-76.
- Putnam, Robert. 1995. "Bowling Alone: America's Declining Social Capital." *Journal of Democracy* 6:65-78.
- Rosenbaum, Paul R., and Donald B. Rubin. 1984. "Reducing Bias in Observational Studies Using Subclassification on the Propensity Score." *Journal of the American Statistical Association* 79:516-24.
- Sampson, Robert J., and John H. Laub. 1990. "Crime and Deviance over the Life Course: The Salience of Adult Social Bonds." *American Sociological Review* 55:609-27.
- . 1993. *Crime in the Making: Pathways and Turning Points through Life*. Harvard University Press.

- Schondel, Connie, Kathryn Boehm, Jared Rose, and Alison Marlowe. 1995. "Adolescent Volunteers: An Untapped Resource in the Delivery of Adolescent Preventive Health Care." *Youth and Society* 27:123-35.
- Schore, Jennifer, Rebecca Maynard, and Irving Piliavin. 1979. *The Accuracy of Self-Reported Arrest Data*. Mathematica Policy Research.
- Scioli, Frank P., and Thomas J. Cook. 1976. "How Effective Are Volunteers? Public Participation in the Criminal Justice System." *Crime and Delinquency* 22:192-200.
- Serow, Robert C. 1990. "Volunteering and Values: An Analysis of Students' Participation in Community Service." *Journal of Research and Development in Education* 23:198-203.
- . 1991. "Students and Voluntarism: Looking into the Motives of Community Service Participants." *American Educational Research Journal* 28:543-56.
- Shover, Neal. 1996. *Great Pretenders: Pursuits and Careers of Persistent Thieves*. Westview.
- Simmons, Roberta G. 1991. "Altruism and Sociology." *Sociological Quarterly* 32:1-22.
- Smith, Douglas, and Christy Visher. 1981. "Street-Level Justice: Situational Determinants of Police Arrest Decisions." *Social Problems* 29:267-77.
- Sobus, Mark S. 1996. "Mandating Community Service: Psychological Implications of Requiring Pro-Social Behavior." *Law and Psychology Review* 19:153-82.
- Starr, Jerold M., and G. David Curry. 1992. "National Voluntary Service: A Humanist Alternative." *Humanity and Society* 16:369-89.
- Sundeen, Richard A. 1990. "Family Life Course Status and Volunteer Behavior: Implications for the Single Parent." *Sociological Perspectives* 33:483-500.
- Sutherland, Edwin H. 1939. *Principles of Criminology*. Lippincott.
- . 1974. "Development of the Theory." Pp. 13-29 in *Edwin H. Sutherland on Analyzing Crime*, edited by Karl Schuessler. University of Chicago Press.
- Toby, Jackson. 1957. "Social Disorganization and Stake in Conformity: Complementary Factors in the Predatory Behavior of Hoodlums." *Journal of Criminal Law, Criminology, and Police Science* 48:12-17.
- Tocqueville, Alexis de. [1835] 1956. *Democracy in America*. Mentor.
- . [1835] 1994. *Democracy in America*. Knopf.
- Trudeau, Kimberlee J., and Ann Sloan Devlin. 1996. "College Students and Community Service: Who, with Whom, and Why?" *Journal of Applied Social Psychology* 26:1867-88.
- Uggen, Christopher. 1999. "Ex-Offenders and the Conformist Alternative: A Job Quality Model of Work and Crime." *Social Problems* 46:1-25.
- Uggen, Christopher, and Candance Kruttschnitt. 1998. "Crime in the Breaking: Gender Differences in Desistance." *Law and Society Review* 32:401-28.
- U.S. Bureau of the Census. 1997. *Statistical Abstract of the United States*. Government Printing Office.
- U.S. Department of Justice. 1998a. *Crime in the United States, 1997*. Government Printing Office.
- . 1998b. *Sourcebook of Criminal Justice Statistics*. Government Printing Office.
- Visher, Christy. 1983. "Arrest Decisions and Notions of Chivalry." *Criminology* 21:5-28.

**362 / Social Forces 78:1, September 1999**

- Volkman, Rita, and Donald R. Cressey. 1963. "Differential Association and the Rehabilitation of Drug Addicts." *American Journal of Sociology* 69:129-42.
- Weissberg, Roger P., Marlene Caplan, and Robin L. Harwood. 1991. "Promoting Competent Young People in Competence Enhancing Environments." *Journal of Consulting and Clinical Psychology* 59:830-41.
- Wilbanks, William. 1987. *The Myth of a Racist Criminal Justice System*. Brooks/Cole.
- Wilson, John, and Thomas Janoski. 1995. "The Contribution of Religion to Volunteer Work." *Sociology of Religion* 56:137-52.
- Wilson, John, and Marc Musick. 1997a. "Who Cares? Toward an Integrated Theory of Volunteer Work." *American Sociological Review* 62:694-713.
- . 1997b. "Work and Volunteering: The Long Arm of the Job." *Social Forces* 76:251-72.
- Wolfgang, Marvin E., Terence P. Thornberry, and Robert M. Figlio. 1987. *From Boy to Man, from Delinquency to Crime*. University of Chicago Press.
- Yamaguchi, Kazuo. 1991. *Event History Analysis*. Sage.
- Young, Mark C., John Gartner, Tomas O'Connor, David Larson, M.D., and Kevin Wright. 1995. "Long-Term Recidivism among Federal Inmates Trained as Volunteer Prison Ministers." *Journal of Offender Rehabilitation* 22:97-118.
- Youniss, James, Jeffrey A. McLellan, and Miranda Yates. 1997. "What We Know about Engendering Civic Identity." *American Behavioral Scientist* 40:620-31.
- Youniss, James, Miranda Yates, and Yang Su. 1997. "The Role of Community Service in Identity Development: Normative, Unconventional, and Deviant Orientations." *Journal of Adolescent Research* 12:245-62.
- Zweigenhaft, Richard L., Jo Armstrong, Frances Quintis, and Annie Riddick. 1996. "The Motivations and Effectiveness of Hospital Volunteers." *Journal of Social Psychology* 136:25-34.