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# IN BETWEEN ADOLESCENCE AND ADULTHOOD

## Recidivism Outcomes of a Cohort of State Delinquents

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*This research examines the recidivism outcomes of 2,436 serious, violent, and chronic youth released from a juvenile correctional system. This group of state delinquents was followed for 5 years after their release to parole as they made the transition to young adulthood. Results of the analysis revealed that 85% of state delinquents were rearrested at least once in the follow-up period, and nearly 80% were rearrested for a felony. Generally, males, those younger at first contact with the juvenile justice system, those with a greater number of felony adjudications, gang members, institutional dangers, those in poverty, and those with mental health issues were significantly more likely to recidivate. The analyses indicate that the factors that would explain recidivism for male state delinquents may differ for female state delinquents. This article concludes with a discussion of policy implications specific to this highly select but disproportionately problematic group of delinquent offenders.*

**Keywords:** *recidivism; institutionalization; delinquents; adolescence; cohort*

Despite long-standing principles of reformation and rehabilitation, the last several decades of juvenile justice have been characterized by a shift toward punitiveness well noted by criminalized juvenile court processes, broadened and simplified waiver mechanisms, harsher and longer sentences through mandatory minimums or determinate sentencing procedures, and the blending of sentencing procedures that can include the imposition of juvenile and adult sanctions (Brummer, 2002; Butts & Mitchell, 2000; Hemmens, Fritsch, &

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Caeti, 1998; Tate, Reppucci, & Mulvey, 1995). These changes have resulted in a situation where convenience has replaced conscience and the limits of benevolence in juvenile justice have been recognized (Rothman, 1980).

The erosion of rehabilitation and reform has not been wholesale in juvenile justice, however. In reality, rehabilitation and reformation as guiding principles still dominate in the juvenile court and justice system for most delinquents. Rather, the shift toward a more punitive approach is most evident for serious, violent, and chronic juvenile offenders (Caeti, Hemmens, Cullen, & Burton, 2003; Hemmens et al., 1998; Simon, 1995). This shift has occurred because these offenders, although small as a group relative to all delinquents, account for a disproportionate amount of failures in the juvenile justice system. The shift is also inexorably tied to the lack of success of juvenile justice programs to rehabilitate serious and high-rate offenders. Perhaps the most sophisticated study conducted to date on the effects of interventions with institutionalized and noninstitutionalized serious juvenile offenders was a meta-analysis done by Lipsey and Wilson (1998). After examining 200 studies, they found that recidivism reduction after intervention for serious juvenile offenders was around 12%, which according to the authors “does not seem trivial, but is not especially impressive either” (p. 318).<sup>1</sup>

The bottom line is that some interventions work with some serious juvenile offenders some of the time (Lipsey & Wilson, 1998). Although small amounts of recidivism reduction among the most serious of all delinquents may be touted as success, for the most part many interventions do not make much of a dent in serious juvenile recidivism.<sup>2</sup> With little evidence that much works for the majority of serious juvenile offenders, buttressed with the finding that many of the nation’s juvenile correctional administrators believe less than one half of the delinquents they house are amenable to treatment or will end up rehabilitated, it is no surprise that the reformative foundation of juvenile justice has eroded for serious and high-rate juvenile offenders (Caeti et al., 2003; Tate et al., 1995).

### **The Case of Serious and High-Rate Juvenile Offenders**

Serious, violent, and chronic juveniles are the offenders for which informal adjustments, diversions, and other less intrusive sanctions have failed, for which treatment has resulted in limited results, and for which everything from shock probation to boot camps to intensive supervision probation has been spent without success. Many offenders in this category have exhausted all available programs and best efforts of the juvenile justice system, and some have escalated in frequency and/or seriousness such that institutionalization has become the only option to deal with them.

Even for the delinquents who find themselves institutionalized, some do not break stride while incarcerated. They buck the institutional regimen, assault staff and other inmates, and possess weapons and other contraband. They coast in neutral by failing to “work their programs” or do so only to reach meritorious levels so they can participate in recreation, use the commissary, or play video games and ping-pong (Bartollas & Miller, 1998; Bartollas, Miller, & Dinitz, 1976). They may learn how to weld, construct a résumé, or hone their interviewing skills, but many do not have the self-discipline to apply for a job, nor

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would they be satisfied with the jobs for which they would be eligible and/or qualified. For all intents and purposes, a portion of these offenders simply bide their time before the system must release them to the streets on parole for another chance at change.

The dossiers of this so-called irreducible percent of all delinquents include a disproportionate amount of offending with untold resources and effort that have been expended by policy makers, practitioners, and the general public (see Cohen, 2000, on the many aspects of the cost of crime). The result is that policy makers do not know what to do with them, practitioners do their best to deal with them, and the general public has to put up with them. Yet, despite all the problems these offenders pose to the justice system, there remain calls for rehabilitation and reform: "It is never too late to intervene in the life of a troubled youth" (Corbitt, 2000, p. 4). There is still faith that change can occur and should be pursued for even the most serious and incorrigible juvenile offenders with long and serious offense histories.

There has been much attention paid to the life circumstances and offending patterns of serious and high-rate juveniles during the past two decades (see Howell, 2003b; Loeber & Farrington, 1998). In general, research has revealed serious and high-rate delinquents generally differ from regular delinquents in that they are exposed to more risk factors and insulated from protective factors at early and critical stages in their lives (Lipsey & Derzon, 1998). These risky youth have been found to start their delinquent careers earlier, escalate to more serious offenses, and continue to offend at a higher and more serious rate than other delinquents as they age (Loeber & Farrington, 1998; Office of Juvenile Justice and Delinquency Prevention, 1998). Studies have consistently found that these are the youth who account for a disproportionate amount of delinquency in their juvenile years (Hamparian, Davis, Jacobson, & McGraw, 1985; Howell, 2003a; Kalb, Farrington, & Loeber, 2001; Schumacher & Kurz, 2000; Shannon, 1998; Tracy & Kempf-Leonard, 1996; Wolfgang, Figlio, & Sellin, 1972) and who are the most likely to become the next generation of adult offenders (Kempf-Leonard, Tracy, & Howell, 2001; Sampson & Laub, 1993, 2003; Schumacher & Kurz, 2000).

Overall, research on serious and high-rate juvenile offenders has found that although reoffending should be expected and is often found, some offenders actually do change, and thus it is never too late to intervene into the life of troubled youth. These claims are perhaps the leftovers of a hyper-optimistic juvenile justice system that leaned toward any amount of success rather than the mounting evidence of failure for the most serious juvenile offenders. Although all offenders are in a process of desistance (Sampson & Laub, 2003), the fact that is rarely of focus is that many serious delinquents do not desist, slow, or become less serious in their offending until they have exited adolescence and are well into adulthood (Piquero, Brame, & Lynam, 2004; Sampson & Laub, 2003). Although some can and do change, evidence suggests that most will do so later rather than sooner.

### **A Focus on Institutionalized Delinquents**

The reality of the above perhaps best characterizes the institutionalized delinquent who has reached the deepest ends of juvenile justice. The institutionalized delinquent is arguably the most serious, violent, and chronic of all juvenile offenders and has incurred the most lopsided record of failure in the juvenile justice system. Unfortunately, there has been a relatively small amount of research on this subpopulation of delinquents in the transition from incarceration to freedom and from adolescence to young adulthood. Although there

are a growing number of longitudinal studies focused on serious and high-rate delinquents in general, many have not been able to capture a large number of institutionalized juvenile offenders simply by design (Laub & Sampson, 2001; Lipsey & Wilson, 1998). With the exception of a few major studies then, little is known about the offending patterns of these youth over time or the factors that may explain their reoffending patterns (Mulvey et al., 2004).

The few longitudinal research studies focused specifically on institutionalized juveniles transitioning from incarceration and into young adulthood indicate that there is not much hope for change in the short term. Research has demonstrated remarkable consistency in the behavior of institutionalized juveniles in that many keep offending, both frequently and seriously, well into young adulthood (Piquero, Brame, Mazerolle, & Haapanen, 2002; Sampson & Laub, 2003). Although the past seems to be a consistent predictor of the future for these offenders, research has revealed that some institutionalized juveniles actually do change their offending patterns following release from incarceration and as they enter adulthood (Piquero et al., 2002; Sampson & Laub, 2003). These findings have led to calls to study serious offender samples, including institutionalized delinquents, in that "knowledge of the correlates of persistence/desistance would aid in the development of effective prevention and treatment programs and highlight whether such programs necessitate an individual or offender-specific approach" (Piquero et al., 2002, p. 143; see also Laub & Sampson, 2001; Piquero et al., 2004). Examining the factors that may explain persistence or desistance is a step in the right direction of identifying where efforts might best be placed to deal with these offenders (Guerra, 1998). Certainly, few would deny that more information on these specialized offenders is useful and needed so that intervention initiatives can be adequately informed and ultimately improved.

These views notwithstanding, research on the factors that influence persistence or desistance for serious and high-rate juvenile offenders transitioning from incarceration is also important from a policy standpoint because there are many delinquents who are more often being considered inappropriate for the juvenile justice system as they continue to reoffend but who are not yet good candidates for full adult justice (Brummer, 2002). In other words, they are in-between offenders for whom the all or nothing juvenile justice system has become obsolete but for whom full adult justice may not be the right fit (Butts & Harrell, 1998; Caeti et al., 2003; Fritsch, Hemmens, & Caeti, 1996; Hemmens et al., 1998; Smallheer, 1999). Because both the juvenile and adult justice systems will increasingly be called on to deal with these offenders (Brummer, 2002; Butts & Mitchell, 2000), research on the differences between those who continue offending and those who stop or slow in the transition to young adulthood can help inform the debate on what to do with these offenders. Ultimately, such research can help shed light on how resources and effort might best be targeted for juvenile offenders who have exited the deepest ends of the juvenile justice system and who are transitioning to adulthood.

### **Research on Institutionalized Delinquents**

Despite the fact that institutionalized delinquents have not been a major focus of longitudinal research, recent studies have been able to tap into this population of offenders to examine their offending patterns over time. Sampson and Laub (1993) undertook a now well-known resurrection of Sheldon and Eleanor Glueck's (1950) *Unraveling Juvenile Delinquency* data and conducted official record follow-ups and interviews of approximately

500 delinquent boys who were institutionalized in the Lyman School for Boys in Westboro, Massachusetts, and the Industrial School for Boys in Shirley, Massachusetts, in the 1940s and 1950s. Extending their original follow-up to age 70, Sampson and Laub (2003) examined official arrest records for their sample of previously institutionalized delinquents and found that nearly 85% were rearrested at least once during the juvenile-adult transition years (age 17-24 in their study). Their analyses also revealed that the young adulthood period (17-24) was characterized by the highest incidence of rearrest (percent of the cohort rearrested), when compared to other age-graded categories (e.g., 25-31 or 60-69). According to Sampson and Laub's analyses, the mean desistance age for all crimes was roughly 38 years of age for the cohort as a whole, well into what they categorize as middle adulthood.

In a second major study, Piquero, Brame, Mazerolle, and Haapanen (2002) followed a group of serious delinquents who were released from the California Youth Authority between 1965 and 1984. Following juvenile parolees 7 years after their release, Piquero and colleagues found a norm of persistence following institutionalization and escalation instead of decline in the immediate transition to young adulthood. In short, they revealed that a substantial proportion of the parolees continued to offend, some very frequently and for violent offenses (see also Piquero et al., 2004, on career length of a similar sample). Desistance or offense slowing was not found until well after young adulthood, generally into the parolees' late 20s and early 30s (Piquero et al., 2002).

In sum, the most recent evidence from major longitudinal works on this highly select but disproportionately problematic group of offenders shows that persistence, not desistance, seems to be the norm for institutionalized offenders as they transition from incarceration to freedom and from adolescence to young adulthood. However, although the young adulthood transition period appeared to be a critical time for persistence for most offenders, it resulted in change for others following release from incarceration (Piquero et al., 2002; Piquero et al., 2004; Sampson & Laub, 1993, 2003). Adding to the few studies that have been able to track and follow institutionalized juvenile offenders over time, this study focuses on how persisters and desisters differ among a large sample of institutionalized delinquents released to parole. Such knowledge sheds more light on the offending outcomes of delinquents once they reenter society after institutionalization and on potential factors to explain recidivism for these offenders.

### **The Present Study**

The present study follows a large cohort of high-rate serious juvenile offenders 5 years after their release from state juvenile incarceration. Unlike studies that include relatively low-level offenders or serious and high-rate offenders who have not been institutionalized, this study tracks a cohort of what we call state delinquents as they make the transition from adolescence to adulthood and from incarceration to freedom. The postincarceration outcomes of state delinquents raise several important practical and policy-relevant questions. One important question is who are the state delinquents who persist in their offending as they transition to young adulthood, and how do they differ from those who do not reoffend?

Our study also examines serious and high-rate institutionalized female offenders. National-level data show that males overall offend more frequently and seriously than do adolescent females. However, arrest rates for female juveniles are growing at a faster pace than are those for males, female juvenile offenders are grabbing a greater overall share of

offenses in the juvenile justice system, and they are being represented in greater numbers in juvenile institutions across the country (Sickmund, 2004; Snyder, 2004). To our knowledge, however, there has not been an examination of offending patterns of females who exit the deep end of the juvenile system during the transition to young adulthood (see Cernkovich & Giordano, 2001, for an institutionalized sample that includes females).

Questions remain as to what ways female state delinquents may differ from male state delinquents as they exit an institutional setting (Howell, 2003a). Research on serious and high-rate female juvenile offenders who have not been institutionalized has indicated that they are a much smaller proportion compared to males (see Kempf-Leonard et al., 2001), but it has also indicated that serious female juvenile offenders do commit a large share of adult crimes in the transition to adulthood relative to their size and that factors related to offending for males may differ for females (see also Kempf-Leonard & Tracy, 2000; Thornberry, Krohn, McDowall, Bushway, & Lizotte, 2003). If claims that juvenile justice entrance, experiences, and outcomes for female offenders may differ from male offenders are true, this research holds promise for gaining a better understanding of serious female state delinquents as they exit the deep end of the juvenile justice system (Budnick & Shields-Fletcher, 1998). Knowledge of the offending patterns of institutionalized female offenders could be used on a number of fronts including information for the development of sex-appropriate interventions for this type of serious and high-rate juvenile offender both during and after incarceration (Sickmund, 2004).

## **Method**

### *Sample*

This study follows 2,436 male and female parolees after their release from a large southwestern juvenile correctional agency. Of the 2,436 state delinquents, 2,293 (94%) are males and 143 (6%) are females.<sup>3</sup> The sample includes all youth paroled in this state from their first incarceration to the streets, which occurred in the full years of 1997 or 1998.<sup>4</sup> These delinquents were then followed exactly 5 years from their individual date of release from this juvenile correctional system. Appendix A presents information on the aging of the entire cohort of state delinquents after their release and until the last wave of follow-up in 2003.<sup>5</sup>

### *Data and Variables*

There are two general types of data used in this study from which independent and dependent variables were derived: background data and outcome data. Background data refer to the histories of the youth under study and are where independent variables were derived. Outcome data refer to the experiences of youth after their incarceration, namely recidivism as measured by official rearrests. The data types and variables are explained below.

### *Background Data*

Background data generally include information on the social, familial, educational, medical, psychological, substance use, delinquent, and institutional histories of youth. These data were provided to the researchers by the juvenile correctional system. A number

of variables, including but not limited to gang affiliation, family member gang affiliation, treatment needs, age at first contact with the juvenile justice system, number of prior felony adjudications, history of abuse, and institutional behavior summaries, are collected by the juvenile correctional system.<sup>6</sup>

Background data are collected by the juvenile correctional system once youth are adjudicated and sentenced to a period of state confinement. At their commitment, all state-sentenced delinquents are placed in the state's orientation and assessment facility. Delinquents stay at this facility for approximately 30 to 45 days, after which they are transferred to one of several long-term secure state juvenile correctional facilities.

Background data collected at orientation and assessment are based on a combination of official records, self-reports, and on-site diagnostic procedures. The collection method and data type depend on the type of information. For example, state- and county-level official records are used by the correctional system to construct histories pertaining to arrests, court adjudications, and dispositions prior to state commitment. Information on social and familial variables is collected through a combination of self-reports (e.g., whether the youth's family members are gang related) of youth while they are at orientation and assessment and reliance on official records at the state and county level for some information (e.g., whether the family is in poverty). Medical, psychological, and other diagnostic information, such as educational testing, is collected on-site at orientation and assessment through tests conducted by psychologists, sociologists, and other correctional-system professionals. Institutional variables are also collected while the youth is at the orientation and assessment facility and throughout the youth's confinement. For example, the juvenile system collects data on whether the youth had assaulted institutional staff or other juveniles during his or her incarceration and collects other information such as the youth's length of stay in a state juvenile facility. It is from this rich source of data that we derived our sets of independent variables.<sup>7</sup>

### *Independent Variables*

There are three sets of independent variables used in the analyses: demographic variables, delinquent history variables, and risk factor variables. Variables are listed below (see Appendix B for full coding).

There are two demographic variables—race and sex. Delinquent history variables include five continuous variables and eight categorical variables. The continuous variables include age at first formal referral to the juvenile justice system, age at state commitment, age at release from incarceration, length of incarceration (in days), and the number of felony adjudications prior to state commitment. Categorical delinquent history variables include whether or not the youth was on probation at the time he or she was committed to the state, the degree of the youth's commitment offense, whether the youth was a known gang member, whether the youth was violent toward his or her family, and several institutional conduct variables including whether the youth was assaultive to staff while incarcerated, whether staff force ever had to be used to control the youth, whether or not the youth possessed a weapon while incarcerated, and whether or not the youth possessed drugs while incarcerated.

Also included in the analyses are several risk factor variables. One risk factor variable is continuous and includes the number of previous out-of-home placements (e.g., foster care or youth shelter but not including state commitment to incarceration). Several more variables are categorical including whether the youth's parents divorced; if the youth's fam-



ily was in poverty; if any of the youth's family members were gang related; whether the youth experienced physical abuse, sexual abuse, emotional abuse, or physical neglect and/or was abandoned by his or her parents; whether the youth had special educational needs; whether the youth had a need and/or received chemical dependency, emotional disturbance, sex offender, or capital offender treatment; whether the youth was mentally challenged; if the youth was mentally ill; and if the youth had exhibited any suicidal tendencies.

Overall, the independent variables in this study cover a broad range of important factors from delinquent histories to treatment needs and from family life to institutional behavior.

#### *Outcome Data*

Outcome data, or recidivism outcomes for state delinquents, were obtained from the Department of Public Safety (DPS) in this state. The DPS, in conjunction with the juvenile correctional system, collects and maintains arrest information on all state-committed juveniles who are released from this juvenile correctional system. These data were used to construct the postincarceration outcomes of state delinquents 5 years from their release from state institutionalization. In short, these data track whether or not youth were rearrested for any offense following release and include indicators of the seriousness of the rearrests.<sup>8</sup>

#### *Dependent Variables*

Recidivism is the general outcome variable and is defined in two ways in this article: first arrest for any law violation (felony and misdemeanor included); or most serious felony rearrest only (excluding misdemeanors).

Before a discussion of the analysis plan, we discuss the concept of desistance as it is a major focus of this article and as there are many different conceptions of what this term means. Next, the use of official records versus self-reports of behavior is discussed briefly.

#### *Desistance*

Our conceptualization of desistance is generally the absence of any official law violation in the 5-year follow-up period or the absence of any felony rearrest in the follow-up. However, desistance as a definition is not so clear cut (see Mulvey et al., 2004, pp. 219-222). Ultimately, our data are right-censored because we have a limited time frame of follow-up. Although our follow-up of 5 years is substantial, any label of a desister in this article comes with the realization that desistance is only official desistance and only during the 5-year follow-up (Brame, Bushway, & Paternoster, 2003; Bushway, Piquero, Broidy, Cauffman, & Mazerolle, 2001). Moreover, some state delinquents may actually have deceased during the follow-up and thus may be erroneously categorized as desisters (see Sampson & Laub, 2003). Thus, in terms of official persistence or desistance, it is possible that some state delinquents are offending and have not been caught, are offending more (or more seriously) than what is caught, or are deceased.

For the follow-up period, it may be the case that some offenders are in a temporary state of desistance and have not truly desisted in the longer term. Piquero (2004) noted the concept of the intermittency in defining desistance, meaning that individuals may have lulls and spikes in offending that vary in different periods. It is possible that any desisters have not truly desisted and are perhaps in a temporary lull in offending during the time frame of

this article. It may be the case that in the future, with an extended follow-up, desisters in this article could actually become persisters because of the intermittency of offending. Moreover, our definition of recidivism does not specifically track desistance as a process. In other words, desistance can also be thought of as a slowing of offending from one time to another or as a process of declining seriousness from one time to another as opposed to complete cessation of offending (Mulvey et al., 2004). Although we have crude indicators of offending preinstitutionalization (e.g., the number of prior felony adjudications or whether the youth was on probation prior to state commitment), they are not as detailed as postinstitutionalization data in terms of both frequency and seriousness of law violations. Therefore, pre- and postincarceration comparisons of frequency and seriousness are not feasible with the data in hand.

In short, our conceptualization of desistance has drawbacks in light of the many ways desistance can be defined. As more years of follow-up become available, many of these drawbacks can be remedied, and more light can be shed on the offending patterns of this cohort of state delinquents both before and after their incarceration and for extended periods of time. For now, however, following up a very large, serious, and high-rate cohort of previously institutionalized offenders over a substantial period of time adds to the few studies that have been able to focus on this population. Moreover, although our follow-up extends only 5 years, for the overwhelming majority of state delinquents, it extends well into young adulthood (see Appendix A), and evidence suggests that reoffending for serious and high-rate delinquents should be expected during the transition to young adulthood if it is going to happen at all (Piquero et al., 2004; Sampson & Laub, 2003). Whereas future studies on this unique sample will be able to add follow-up years to better connect adolescent offending patterns well into adulthood to examine the intermittency of offending, this study covers a substantial time during this important transition period (see Arnett, 2000; Piquero et al., 2004). Another benefit of the current study is that the outcome data are relatively recent in that only 2 years separates the last year of outcome data from 2005.

In light of the goal of this article to examine differences between those who persist in offending and those who have not reoffended in the juvenile-to-adult transition period after incarceration, the consequences of the drawbacks above are perhaps less serious than the risk of waiting years so that all aspects of desistance can be remedied and so that the follow-up period will be terminal. In short, although there are drawbacks to our data, there are a number of benefits that can add to the literature in this area, and this study is a step in the right direction of calls for databases that permit an examination of youth-to-adult transitions and for serious and high-rate juvenile offenders (Guerra, 1998).

#### *Official Records Versus Self-Reports in Measuring Recidivism*

There has been a great deal written on the benefits and drawbacks of using official arrest records as an indicator of recidivism (see Maltz, 1984, for a good review). Generally, a disadvantage of using official arrest records, versus self-reports, is that much behavior may never be officially detected, and even if detected, the youth may not be arrested or ultimately proven guilty in a court of law. Moreover, even if the behavior is detected and formal action is taken, the arrest may not necessarily be indicative of the most serious offense that the youth has committed (Brame, Fagan, Piquero, Schubert, & Steinberg, 2004). The general disadvantage of self-report data on delinquency is that youth may lie, forget, or exaggerate their behavior. In addition, self-report data can produce distortions because of a

number of factors such as survey instrument design, administration of the survey, and nonresponse or cooperation rates (Brame et al., 2004).

We do not repeat a point-counterpoint discussion of the long list of advantages and disadvantages using official versus self-report data to examine juvenile recidivism (see Brame et al., 2004, for an excellent review of these issues using longitudinal designs). Although it would be ideal to have self-report and official records for simultaneous review, such is rarely the case in criminal justice data sets. Despite the absence of self-reports of offending in this article, recent evidence has demonstrated uniformity between self-reports and official verification of offending among serious, violent, and chronic juveniles (Brame et al., 2004). Official records are possibly more appropriate for this article, however, in that official persistence has important practical and policy implications for correctional systems that may not necessarily follow from self-reported delinquency (Brame et al., 2003; Bushway et al., 2001).

### **Data Analysis Plan**

The analysis proceeds in two general stages. The first stage is a descriptive look at state delinquents among the many independent and the two dependent variables mentioned above. This analysis also separates male from female state delinquents. Next, multivariate analysis is used to examine determinants of reoffending. Logistic regression is used for the two dichotomous outcome variables mentioned above. In each of the two multivariate models, the variables will be regressed for the full sample of state delinquents, then for male state delinquents, and then for female state delinquents.

### **Descriptive Statistics**

#### *A Picture of State Delinquents Prior to and During Incarceration*

*Full sample.* Table 1 presents descriptive statistics for all independent variables across sex for all state delinquents. Mean differences and standard deviations are included for continuous variables, and proportions (PP) and standard deviations are given for dichotomous variables for parsimony in presentation (proportions correspond to those coded 1; e.g., the PP for race is .80, which means that 80% of the full sample is non-White, coded as 1). Significant mean-level differences between male and female state delinquents are also presented.<sup>9</sup>

Analyses in Table 1 reveal that the majority of the sample consists of non-White juveniles (80%), and this was generally true when examining males (80% non-White) and females (75% non-White) separately. When broken down into categories, analyses not shown in tabular form revealed that nearly 37% of the state delinquents were Black, 42% were Hispanic, and just more than 1% were Asian or Other, as coded by the correctional system. The remaining 20% were White.<sup>10</sup>

Of the full sample of state delinquents ( $N = 2,436$ ), the average age at first formal referral to the juvenile justice system was roughly 13. The average age at state commitment was approximately 16 for the full sample. This cohort of youth was incarcerated for 384 days on average (365 days median), or just more than 1 year, which equaled an average age

TABLE 1  
State Delinquents Prior to and During Incarceration

Variable	Full Sample		Males <sup>a</sup>		Females <sup>b</sup>		Male-Female Comparison
	PP/M	SD	PP/M	SD	PP/M	SD	t-value
Race (1 = non-White)	0.80	0.40	0.80	0.40	0.75	0.44	<i>ns</i>
Age first formal referral	12.98	1.44	12.98	1.55	12.85	1.50	<i>ns</i>
Age at state commitment	15.97	1.03	15.98	1.02	15.70	1.09	3.12*
Age at release from incarceration	17.02	1.03	17.04	1.02	16.71	1.07	3.60*
Length of incarceration (days)	384.00	146.46	384.90	147.54	370.42	127.39	<i>ns</i>
Felony adjudications prior to state commitment	1.30	0.82	1.32	0.82	0.92	0.79	5.79*
On probation at commitment (1 = yes)	0.68	0.47	0.68	0.47	0.71	0.46	<i>ns</i>
Degree of commitment offense (1 = felony)	0.74	0.44	0.74	0.43	0.64	0.48	2.83*
Known gang member (1 = yes)	0.45	0.50	0.46	0.50	0.31	0.46	3.60*
Violent toward family (1 = yes)	0.29	0.45	0.28	0.45	0.45	0.50	-4.26*
Youth assaultive toward institutional staff (1 = yes)	0.20	0.40	0.20	0.40	0.28	0.45	-2.16*
Staff force ever used to control (1 = yes)	0.30	0.46	0.30	0.46	0.36	0.48	<i>ns</i>
Youth in possession of a weapon while incarcerated (1 = yes)	0.06	0.24	0.07	0.25	0.05	0.22	<i>ns</i>
Youth in possession of drugs while incarcerated (1 = yes)	0.24	0.43	0.24	0.43	0.14	0.35	2.83*
Number of previous out-of-home placements	0.82	1.21	0.80	1.17	1.22	1.64	-3.01*
Parents divorced if married (1 = yes)	0.33	0.47	0.33	0.47	0.35	0.48	<i>ns</i>
Family in poverty (1 = yes)	0.63	0.48	0.64	0.48	0.61	0.49	<i>ns</i>
Family members gang related (1 = yes)	0.16	0.36	0.16	0.37	0.10	0.31	<i>ns</i>
Evidence of physical abuse (1 = yes)	0.16	0.36	0.15	0.36	0.27	0.44	-3.68*
Evidence of sexual abuse (1 = yes)	0.07	0.26	0.05	0.23	0.39	0.49	-15.83*
Evidence of emotional abuse (1 = yes)	0.22	0.41	0.21	0.41	0.37	0.49	-3.96*
Abandoned (1 = yes)	0.14	0.34	0.14	0.35	0.10	0.30	<i>ns</i>
Evidence of physical neglect (1 = yes)	0.09	0.28	0.08	0.28	0.15	0.36	-2.26*
Special educational needs (1 = yes)	0.46	0.50	0.47	0.50	0.36	0.48	2.75*
Need for chemical dependency treatment (1 = yes)	0.42	0.49	0.42	0.49	0.41	0.49	<i>ns</i>
Need for emotional disturbance treatment (1 = yes)	0.28	0.45	0.28	0.45	0.38	0.49	-2.55*
Need for sex offender treatment (1 = yes)	0.03	0.16	0.03	0.17	0.00	0.00	8.24*
Need for capital offender treatment (1 = yes)	0.01	0.12	0.01	0.11	0.02	0.14	<i>ns</i>
Received chemical dependency treatment (1 = yes)	0.18	0.39	0.19	0.40	0.02	0.12	5.43*
Received emotional disturbance treatment (1 = yes)	0.07	0.26	0.07	0.25	0.14	0.35	-3.11*
Received sex offender treatment (1 = yes)	0.01	0.10	0.01	0.11	0.00	0.00	<i>ns</i>
Received capital offender treatment (1 = yes)	0.00	0.04	0.00	0.04	0.00	0.00	<i>ns</i>
Youth mentally challenged (1 = yes)	0.07	0.26	0.07	0.26	0.10	0.30	<i>ns</i>

(continued)

TABLE 1 (continued)

Variable	Full Sample		Males <sup>a</sup>		Females <sup>b</sup>		Male-Female Comparison
	PP/M	SD	PP/M	SD	PP/M	SD	t-value
Youth mentally ill (1 = yes)	0.07	0.26	0.07	0.26	0.09	0.29	<i>ns</i>
Any suicidal tendencies (1 = yes)	0.06	0.23	0.05	0.22	0.15	0.36	-4.46*

NOTE:  $N = 2,436$ . Categorical variables were dichotomized and indicate proportion, with 1 as coding score under the PP/M column. For example, Race (1 = non-White) at PP/M .80 means 80% of the full sample is non-White. Values are rounded to the nearest one hundredth of a percent, and using actual proportions to obtain  $n$  may be slightly off because of rounding.

a.  $n = 2,293$ .

b.  $n = 143$ .

\* $p < .05$ .

at release from incarceration at 17 and an average age of 18 at the Wave 1 follow-up (see Appendix A). Roughly 68% of the sample was on probation at the time they were committed, revealing that most of the state delinquents had been involved in the formal juvenile justice system prior to their incarceration. This was true for both males and females examined separately. Not surprisingly, state delinquents averaged almost 1.5 prior felony adjudications prior to state commitment (not including their commitment offense adjudication), and close to 75% had committed a felony that led to their commitment.

State delinquents experienced a variety of social, educational, medical, and familial problems based on the data provided by the correctional system. Of the youth, 63% lived in poverty, and one third of state delinquents experienced a divorce in the family. Also, 16% of state delinquents reported that they had family members who were gang related. A relatively small proportion of state delinquents experienced physical abuse (16%) or neglect (9%) or sexual abuse (7%), but 22% experienced emotional abuse, and 14% were reportedly abandoned by their parents. Almost 50% were determined to have special educational needs by the juvenile correctional system. Less than 20% of the youth received chemical dependency treatment, and even a smaller proportion received emotional disturbance, sex offender, or capital offender treatment, although the need as determined by the juvenile correctional system was present, especially for chemical dependency and emotional disturbance treatment. Less than 7% of youth were considered mentally challenged or mentally ill or exhibited any suicidal tendencies.

Examining the variables in Table 1, it can be seen that this cohort was involved with the juvenile justice system in one way or another for years prior to release from confinement. A large proportion of the state delinquents were on probation at commitment and averaged almost two felony adjudications prior to state commitment. Also, 52% were previously placed out of their home (not shown in tabular form), with an average of almost one placement prior to state commitment, and 45% were known gang members. These youth started their official delinquent careers early (age 13), graduated to state incarceration in midadolescence (age 16), and were incarcerated for just over 1 year and released in late adolescence (age 17).

Interestingly, a number of state delinquents were involved in problematic behaviors while institutionalized, as evidenced by the fact that 30% had force used against them for control, 20% were assaultive toward staff, and 24% had possessed drugs while confined. The bottom line is that at the time these youth were incarcerated, most had already been in-

involved in official contact with the juvenile justice system for years and that involvement led to the deepest ends of the juvenile justice system.

*Male versus female comparisons.* Notwithstanding an overall look at state delinquents, males and females were compared. There were 19 significant differences among male and female state delinquents. Males, on average, were older than females at state commitment (15.98 vs. 15.70, respectively) and at release from state incarceration (17.04 vs. 16.71, respectively). Male state delinquents had a significantly larger number of prior felony adjudications than did females (1.32 vs. 0.92, respectively). Males were more likely to have a felony as their commitment offense and were more likely to be known gang members but were significantly less likely to be violent toward their family than were female state delinquents. The latter finding is interesting because in terms of conduct while incarcerated, females were significantly more likely to be assaultive toward institutional staff and more likely to have force used against them for control (although not significant for use of force), but males were more likely to be in possession of drugs while incarcerated.

Female state delinquents experienced significantly more out-of-home placements prior to incarceration and were more likely to have experienced physical, emotional, and sexual abuse or neglect but were less likely to have special educational needs compared to male state delinquents. Moreover, females were significantly more likely to exhibit suicidal tendencies, which may explain why females were significantly more likely to be determined to have a need for emotional disturbance treatment and hence receive emotional disturbance treatment while incarcerated.

#### *State Delinquents After Incarceration*

*Full sample.* Table 2 shows general rearrest outcomes for the full sample and for males and females separately. For the full sample, 85% (2,073) of the state delinquents were rearrested at least once in the 5 years after their release from state incarceration. If considering only felony rearrests, 79% (1,921) of state delinquents were rearrested in the 5-year follow-up.

By rank order of the most serious postrelease arrest, state delinquents averaged 5.67 on an 8-point scale. Offenses (or rearrests), as categorized by this state, were ranked ordered from least serious (1) to most serious (8), and those ordinal ranks were treated as interval levels to obtain an average. Categories 1 to 3 refer to misdemeanor C (coded as 1) through A (coded as 3). Category 4 is a state jail felony, categories 5 to 7 are felonies 3, 2, and 1, respectively, and category 8 is capital murder.<sup>11</sup> This variable measures, by this scale, the most serious postrelease arrest recorded in the event that multiple rearrests occurred. An average of 5.67 indicates that the most serious rearrests for the entire sample fell in either the felony 2 or 3 categories. In this state, a felony 2 is punishable by a term of imprisonment ranging 2 to 20 years, whereas a felony 3 offense is punishable by imprisonment for a term ranging from 2 to 10 years. Thus, the most serious postrelease felony rearrests for state delinquents were serious felonies that could have resulted in substantial incarceration time.

In terms of frequency as a cohort, state delinquents averaged just more than 5 rearrests after release, which includes both felonies and misdemeanors of all categories mentioned above. Because the mean had a large standard deviation, the median of 4 arrests postrelease is probably a better estimate of activity. Not shown in tabular form, however, is the finding that this cohort of youth accounted for 12,960 arrests in the 5-year follow-up, or

TABLE 2  
Rearrest Outcomes of State Delinquents 5 Years After Incarceration

Outcome	Full Sample		Males <sup>a</sup>		Females <sup>b</sup>		Male-Female Comparison
	PP/M	SD	PP/M	SD	PP/M	SD	t-value
Rearrested for any offense (1 = yes)	0.85	0.36	0.87	0.34	0.61	0.49	6.23***
Most serious rearrest (1 = felony)	0.79	0.41	0.81	0.39	0.45	0.50	8.36***
Rank order of most serious rearrest <sup>c</sup>	5.67	1.28	5.71	1.25	4.75	1.64	11.16***
Number of postrelease rearrests (includes felony and misdemeanor)	5.32	5.05	5.52	5.08	2.24	3.28	5.39***

NOTE:  $N = 2,436$ . Categorical variables were dichotomized and indicate proportion, with 1 as coding score under the PP/M column. For example, rearrested for any offense (1 = yes) at PP/M .87 means 87% of the full sample was rearrested. Values are rounded to the nearest one hundredth of a percent, and using actual proportions to obtain  $n$  may be slightly off because of rounding.

a.  $n = 2,293$ .

b.  $n = 143$ .

c. This variable includes eight ordered codes from 1 (lowest level offense in this state) to 8 (highest level of offense, which is capital murder). The PP/M is the average rank, thus ordinal ranks are treated as interval data for this category.

\*\*\* $p < .001$ .

an average of 2,592 rearrests per year.<sup>12</sup> If examining the number of arrests by only those who were rearrested or the offending population (2,073 were rearrested at least 1 time in 5 years), this resulted in an average of more than 6 postrelease offenses ( $12,960 \div 2,073$ ) for each of the offending delinquents in the cohort during the 5-year follow-up, or more than 1 offense per year of follow-up.

*Male versus female comparisons.* A comparison of male and female state delinquents on postrelease outcomes revealed significant differences on all variables. Male state delinquents were significantly more likely to be rearrested, were more likely to commit a felony as their most serious rearrest, committed significantly more serious crimes (5.71 for males vs. 4.75 for females), and had a significantly higher average number of offenses postrelease (5.32 for males and 2.24 for females; 4 was the median for males and 1 was the median for females on frequency of rearrests).

Of the 12,960 rearrests recorded for all state delinquents, not shown in tabular form is that the female offending population (61%, or 87 females, were rearrested) accounted for 320 rearrests, or roughly 2% of all postrelease arrests. For the offending population of females, this averaged less than 1 rearrest per year in the 5-year follow-up. For males, not shown in tabular form is that the 1,986 active male offenders after release from incarceration were rearrested 12,640 times (98% of all rearrests), for an average of more than 6 rearrests spanning the 5-year follow-up, or more than 1 rearrest per year of follow-up on average.

#### *Bottom Line*

An overall picture of state delinquents showed early entrance into the formal juvenile justice system (age 13), incarceration into middle to late adolescence (age 16), and release

from incarceration from late adolescence into young adulthood (age 17).<sup>13</sup> From the descriptive statistics in Table 1, state delinquents as a whole can be described as a serious and high-rate group of offenders with multiple obstacles confronting them. As they progressed from incarceration to freedom and from adolescence to early adulthood, the majority of state delinquents continued to reoffend, analyses presented in Table 2 show. In all, 85% of the state delinquents were rearrested (2,073 with at least 1 rearrest vs. 363 with no rearrests), and many committed serious felonies that could have resulted in a range of punishments from 2 to 20 years in adult prison if convicted. In terms of frequency of all rearrests (all misdemeanors and all felonies included), state delinquents racked up almost 13,000 rearrests in 5 years, and among the population of state delinquents who were actively offending, they averaged more than 1 rearrest per year following release from state incarceration.

At the same time that the majority of state delinquents were offending and getting re-arrested for quite serious offenses, 363 (15%) delinquents were not rearrested (or 515, 21%, if defining rearrest absent misdemeanors), a finding that begs the question of how those who persisted in offending differ from those who officially desisted from offending during the 5-year follow-up period. Moreover, female state delinquents tended to have substantially different offending outcomes postrelease—less frequent, less serious, and not disproportionate to their overall population relative to males in terms of frequency of rearrests. Such different outcomes beg the question of what are the factors that relate to male and female state delinquent reoffending as they make the transition from incarceration to freedom and adolescence to adulthood. We explore these questions next.

### Multivariate Analysis

Prior to the logistic regression analyses, several preliminary steps, including the inspection of correlations among the many independent variables, which led to collapsing, combining, or dropping some variables from the analyses, were conducted (see Appendix C).<sup>14</sup> After diagnostics were completed, the first logistic model was produced. This analysis examines the variables associated with recidivism (persistence) as defined as any rearrest in the 5-year follow-up period (1 = yes and includes either a felony or misdemeanor rearrest; 0 = no rearrest). Three models are presented in Table 3 and indicate separate analyses for the full sample and then for males and females separately. The second logistic regression model (presented in Table 4) examines the variables associated with recidivism (persistence) as defined as any felony rearrest in the 5-year follow-up period (1 = yes for any felony rearrest; 0 = no rearrest or only a misdemeanor rearrest).

#### *Rearrest for Any Offense*

The analysis in Table 3 for the full sample of state delinquents indicates that nine variables had a significant effect on any rearrest. State delinquents who were older at first formal contact with the system (those younger at first contact were more likely) and those who were confined for longer periods of time were predicted to be significantly less likely to be rearrested. Males, those who had a greater number of prior felony adjudications, those on probation at state commitment, known gang members, those considered institutional dangers, those who lived in poverty, and those who had mental health issues were significantly



TABLE 3  
Logistic Regression for Rearrest

Variable	Full Sample			Males <sup>a</sup>			Females <sup>b</sup>		
	B	SE(B)	Exp(B)	B	SE(B)	Exp(B)	B	SE(B)	Exp(B)
Race	0.05	0.16	1.05	0.07	0.17	1.08	0.13	0.48	1.14
Age first formal referral to juvenile system	-0.17	0.05*	0.85	-0.18	0.05*	0.84	-0.11	0.15	0.90
Age at release from incarceration	0.08	0.07	1.09	0.12	0.07	1.12	-0.22	0.21	0.80
Length of incarceration (days)	-0.01	0.00*	0.99	-0.00	0.00*	0.99	0.00	0.00	1.00
Number of felony adjudications prior to state commitment	0.14	0.08*	1.15	0.19	0.08*	1.20	-0.30	0.25	0.74
On probation at state commitment	0.28	0.13*	1.32	0.24	0.13	1.27	0.73	0.43	2.09
Gang influence	0.26	0.12*	1.30	0.25	0.13*	1.29	0.27	0.44	1.31
Violent toward family	0.09	0.15	1.09	0.12	0.16	1.13	-0.30	0.46	0.74
Institutional danger	0.34	0.13*	1.40	0.29	0.13*	1.34	0.91	0.46*	2.49
Number of previous out-of-home placements	0.03	0.05	1.03	0.09	0.06	1.09	-0.16	0.14	0.86
Parents divorced	-0.16	0.13	0.85	-0.17	0.14	0.84	0.14	0.45	1.15
Family in poverty	0.26	0.12*	1.29	0.22	0.13	1.24	0.54	0.42	1.71
Abuse	-0.20	0.14	0.82	-0.21	0.15	0.81	-0.32	0.44	0.73
Special educational needs	0.00	0.12	1.00	-0.10	0.13	0.91	1.05	0.44*	2.87
Treated	0.05	0.14	1.05	0.04	0.15	1.04	-0.40	0.58	0.67
Mental health	0.40	0.20*	1.49	0.50	0.22*	1.64	0.01	0.53	1.01
Sex	1.38	0.20*	4.00	—	—	—	—	—	—
Constant	0.98	1.04	2.66	1.94	1.11	6.96	4.67	3.31	107.11
$\chi^2/df$		125.31/17			67.13/16			23.68/16	
<i>p</i>		<.001			<.001			.097	
Nagelkerke <i>R</i> <sup>2</sup>		0.088			0.053			0.207	
Cox and Snell <i>R</i> <sup>2</sup>		0.050			0.029			0.153	

NOTE: *N* = 2,436. 1 = rearrested; 0 = not rearrested in 5-year follow-up period.

a. *n* = 2,293.

b. *n* = 143.

\**p* < .05.

TABLE 4  
Logistic Regression for Rearrest (Felony Only)

Variables	Full Sample			Males <sup>a</sup>			Females <sup>b</sup>		
	B	SE(B)	Exp(B)	B	SE(B)	Exp(B)	B	SE(B)	Exp(B)
Race	0.14	0.14	1.15	0.14	0.15	1.15	0.14	0.47	1.15
Age first formal referral to juvenile system	-0.13	0.04*	0.88	-0.13	0.04*	0.88	-0.11	0.14	0.89
Age at release from incarceration	-0.10	0.06	0.99	0.02	0.06	1.02	-0.27	0.19	0.77
Length of incarceration (days)	-0.00	0.00*	0.99	-0.22	0.00*	0.99	-0.00	0.00	0.99
Number of felony adjudications prior to state commitment	0.32	0.07*	1.37	0.32	0.07*	1.37	0.31	0.24	1.37
On probation at state commitment	0.18	0.11	1.19	0.16	0.12	1.18	0.48	0.42	1.62
Gang influence	0.22	0.11*	1.24	0.22	0.11*	1.25	0.19	0.41	1.20
Violent toward family	0.07	0.13	1.07	0.05	0.14	1.05	0.10	0.44	1.11
Institutional danger	0.39	0.11*	1.47	0.38	0.12*	1.47	0.44	0.43	1.56
Number of previous out-of-home placements	0.00	0.05	1.00	0.03	0.05	1.03	-0.13	0.13	0.88
Parents divorced	-0.03	0.12	0.97	-0.03	0.12	0.97	0.05	0.43	1.06
Family in poverty	0.16	0.11	1.17	0.15	0.12	1.16	0.20	0.41	1.22
Abuse	-0.09	0.12	0.91	-0.17	0.13	0.87	0.36	0.41	1.44
Special educational needs	-0.05	0.11	0.95	-0.12	0.11	0.89	0.70	0.40	2.02
Treated	-0.04	0.12	0.96	-0.06	0.13	0.94	0.04	0.56	1.04
Mental health	0.31	0.17	1.37	0.35	0.18*	1.42	0.04	0.50	1.04
Sex	1.61	0.19*	5.02	—	—	—	—	—	—
Constant	1.47	0.93	4.36	2.67	0.98*	14.46	4.46	3.01	86.08
$\chi^2/df$		187.52/17			97.33/16			18.31/16	
<i>p</i>		<.001			<.001			.316	
Nagelkerke <i>R</i> <sup>2</sup>		0.115			0.067			0.159	
Cox and Snell <i>R</i> <sup>2</sup>		0.074			0.042			0.119	

NOTE: *N* = 2,436. 1 = rearrested for felony only; 0 = not rearrested in 5-year follow-up period for felony.

a. *n* = 2,293.

b. *n* = 143.

\**p* < .05.

more likely to reoffend or to be rearrested after release from incarceration. These findings are not surprising and are in the expected direction.

From purely a system and practical perspective, these findings indicate that the juvenile correctional system is in a good position to recommend higher and more intense levels of scrutiny for certain state delinquents, especially those who are early arrivals, those with longer and more serious delinquent records prior to commitment, those who are gang members, and those who are considered institutional dangers. Such findings are not inconsistent with previous research on serious and high-rate offender samples. In short, one of the most consistent predictors of continued offending into adulthood is early entrance into the official system and frequent and serious offending in adolescence (Piquero et al., 2004; Tracy & Kempf-Leonard, 1996). This finding seems to hold true for institutionalized delinquents in the same way it does for the serious and high-rate, but not the previously institutionalized, offender samples.

Within the group of male state delinquents specifically, there were six variables that were associated with recidivism. Older males and those with longer stays of incarceration were found to be less likely to be rearrested, whereas those with a higher number of felony adjudication prior to commitment, gang members, institutional dangers, and those with mental health issues were significantly more likely to persist. Only two variables, however, were significant in an explanation of reoffending for female state delinquents, and these included if the juvenile was an institutional danger or had special educational needs. Female state delinquents categorized as institutional dangers and those with special educational needs were more likely to be rearrested following state confinement.

Again, such findings put the youth authority in a good position from a practical standpoint for recommending higher levels of scrutiny for these types of offenders. Particularly for females, an implication for correctional programming should be to examine female interaction with staff members, as Table 1 showed that females are significantly more likely to assault institutional staff and to have staff force used against them for control. This finding meshes with claims that the institutional experience for female delinquents may be quite different than for male delinquents despite the fact that both groups are serious offenders (Rubin, 2000). The findings also reveal that factors shown to influence recidivism for male state delinquents, such as age at first formal system referral and number of prior felony adjudications, were not significant in explaining female state delinquent recidivism. Such a finding indicates that perhaps the pathways to persistence or desistance for females may differ from those of males and that female offending patterns may depend less on more traditional factors such as early age of onset or prior number of felony adjudications. We examine whether these findings hold for felony rearrests below.

#### *Rearrest for Felony Only*

The analyses in Table 3 examined variables associated with a rearrest for any offense in the 5-year follow-up. Of particular importance, however, are felony offenses. For all intents and purposes, these are the offenses for which there is most concern, especially for state delinquents. Although some would argue that any offense on the part of state delinquents after release from incarceration is of concern, it is perhaps less concerning when comparing misdemeanors to felonies because misdemeanors, especially less serious misdemeanors, have likely been normalized for these offenders. Although purely speculation, state delinquents who are rearrested for only misdemeanor offenses postrelease may be viewed as successes in light of their past. As a result, the analyses presented in Table 4

dichotomized the outcome variable, a persister, as those rearrested postrelease for a felony only (coded as 1). All others, either those with no recorded rearrests or those with only misdemeanor arrests, were coded as a desister (0) for this analysis.

Consistent with the findings in Table 3, analyses in Table 4 show that those who are males, those who are younger at first formal system referral, those who are gang members, those with a greater number of felony adjudications prior to commitment, and those state delinquents categorized as institutional dangers were significantly more likely to be rearrested for a felony. Those who were older at their release from incarceration (and hence likely older at first formal referral and at commitment to the correctional system) and those with a greater number of days incarcerated were less likely to be rearrested for a felony.

For male state delinquents only, findings are consistent with the full sample analysis, with the exception of the presence of mental health issues, which had a significant positive relationship with recidivism. This variable was significant in the analysis for the entire cohort and for males in Table 3 but not for the entire cohort in Table 4. For female state delinquents, no variables emerged as significant predictors of felony rearrests.

### **Discussion of Findings, Limitations, and Suggestions for Research**

The picture of the state delinquents examined in this study is impressive. A general picture revealed that state delinquents came to the formal attention of the juvenile justice system at an early age. Many had histories of broken homes and chaotic families with evidence of all forms of abuse and needs for specialized forms of treatment as determined by the juvenile correctional system. By middle to late adolescence, this group overall had accumulated felony-laden records with evidence of progression through many aspects of the juvenile system, so that by the time they were incarcerated, they averaged almost 2 prior felony adjudications, and roughly 75% had perpetrated another felony, which led to their state commitment (see degree of commitment offense in Table 1). During institutionalization, many of the state delinquents continued their problematic ways. Some assaulted staff and were management problems, whereas others possessed weapons and drugs.

In the transition from incarceration to freedom and from adolescence to young adulthood, consistency was the rule. After release from incarceration and 5 years out, 85% of state delinquents reoffended at least one time for a felony and/or a misdemeanor (79% for at least a felony) and had accumulated almost 13,000 arrests, many of which were relatively serious felonies in the state under study. Analyses revealed that the most consistent predictors of recidivism for this cohort emerged as early entrance into the formal system, a greater number of prior felony adjudications, gang membership, and being considered an institutional danger. These findings held through both logistic regression models for the cohort as a whole and for males specifically. However, these predictors were either not consistent or were statistically significant predictors of female recidivism in either of the analyses presented in Tables 3 and 4. The tentative finding is that the factors that would explain male recidivism among this cohort do not fit for female recidivism in general.

Taking a broader view, the bottom line finding for this group of state delinquents is that perhaps recidivism should be expected considering their past. It simply smacks against common sense to think that a group of the most serious, violent, and chronic delinquents, who have demonstrated official law violations for a substantial part of their life, would simply go against tradition and quit offending. Although the factors related to male and female state delinquent recidivism tentatively appear to differ, the majority of state delinquents,

both male and female, continued to offend at a frequent and serious pace after their incarceration. This is perhaps the central finding. Although males as a group were less successful overall and reoffended more frequently and more seriously, it should cause no surprise that female state delinquents, considering that they were serious and high-rate institutionalized offenders as well, were frequent and serious in their reoffending, with 61% being rearrested at least one time in the 5-year follow-up, 45% for a felony offense.

In light of the findings, the data in this study were limited in certain ways. First, many of the variables used in the analysis were dichotomous in nature and precluded more in-depth analysis and richer detail. This is perhaps an unavoidable consequence of using agency-collected data that, as a rule, are not collected for researcher use but for agency purposes. Future research would benefit from more precise variable definitions. For example, instead of simply the number of prior felony adjudications, it would be useful to know the degrees of the felonies for which state delinquents were adjudicated, or instead of the number of prior out-of-home placements, it would be valuable to know exactly what type of out-of-home placement occurred, for what reason it occurred, and for how long they were placed out of the home. Finer distinctions among these and other variables would have improved the analyses.

We were also limited in the sample size of females. State commitment and release rates by sex dictated this number to some extent, and although this limitation was unavoidable for this study, future research would benefit from larger samples of institutionalized females. Larger samples may be able to clarify important relationships that may not emerge as statistically significant with the small female sample in this study (Huizinga & Jakob-Chien, 1998). As years pass, however, it is the hope that we can add to the sample and confirm or refute the findings within this article. However, because there is a lack of information on serious and high-rate female juveniles who have been institutionalized and their offending patterns after release, this article serves as a starting point for examining their offending patterns and determinants of recidivism compared to male state delinquents. Although our findings point to the fact that most of the state delinquents continued to offend, the factors that would explain this finding appear to differ among male and female state delinquents, at least concerning the variables available in our analyses. Analyses with larger samples could help clarify this finding for serious institutionalized females as they transition from incarceration.

Third, our study examined a very specialized type of delinquent, and we were not able to compare our sample to different offender samples. Future research would benefit from examining or comparing three offender-based samples including a general sample of delinquent offenders, a sample of noninstitutionalized serious and high-rate offenders, and a sample of institutionalized delinquents like that used in the present article.<sup>15</sup> Institutionalized delinquents are arguably the most serious and high-rate offenders of all juveniles, but the factors related to their reoffending may be different from other serious and high-rate offenders who are not institutionalized or from general delinquent offender samples (or even comparing subgroups within each sample; see Kempf-Leonard et al., 2001). Such comparisons could shed light on the determinants of recidivism in each group and on the ways that they are similar or different.

Finally, our study was limited because we did not have data measuring local or contemporary life circumstances. Certainly, information about contemporary life-course events, such as marriage, family, and work, could shed more light on the differences between recidivists and nonrecidivists in the long term. There is a heavy emphasis in the literature now on the effect of contemporary life circumstance variables, and data on both for-

mer life circumstances and local life circumstances could further clarify the relative importance of these variable groupings in explaining delinquent and criminal behavior at various points in time (Cernkovich & Giordano, 2001; Donker, Smeenk, van der Laan, & Verhulst, 2003; Moffitt, 1993; Piquero et al., 2002; Sampson & Laub, 2003).

Although our study has limitations, we hope our effort is important for an initial understanding of the offending patterns of a large sample of institutionalized delinquents as they exit incarceration. As it stands, this study adds to the growing body of longitudinal research that has been able to follow institutionalized offenders as they exit the deepest ends of the juvenile justice system and transition into young adulthood. Despite the limitations in this study, our general findings seem to mesh with the best evidence available on these offenders, namely that recidivism should be expected for most, at least in the transition to young adulthood. In that vein, we discuss the policy implications for this cohort of juvenile offenders.

### **Policy Implications for Institutionalized Offenders: The Blending of Juvenile and Adult Correctional Justice**

As a practical system matter, the transition from incarceration to freedom for institutionalized juvenile offenders is important as traditional boundaries between the juvenile and adult system continue to erode. State delinquents are literally at the crossroads to juvenile and adult justice and are the offenders for whom the slimming border between juvenile and adult justice is most salient (see Bazemore, Leip, & Stinchcomb, 2004, on boundary changes also at the front end of juvenile justice where there is a slimming border between informal juvenile justice and formal juvenile justice). Although it is true that the border between juvenile and adult justice is still strong for most delinquent offenders, this is not the case for institutionalized delinquents. Institutionalized delinquents no longer go from delinquents to criminals to be ignored by the juvenile system and to be dealt with by the adult system at some statutorily predetermined age. Instead, both the juvenile and adult systems will bear some responsibility in dealing with these so-called in-between offenders because the 19th century boundary that "put adults on one side of the line and young people on the other" (Friel, 2000, p. 11) has become blurred.

One example of this blurring of boundaries comes from the incongruence between statutory upper-age determinations and jurisdictional upper-age boundaries of many state juvenile correctional systems. For example, whereas most states proclaim that a juvenile becomes an adult at age 18 (some states go as low as 16 or 17 to mark the adult transition), juvenile correctional systems may hold supervisory jurisdiction typically to age 21, and in some states such as California, this may go up to age 25, well beyond statutory upper-age maximums and well into young adulthood. Thus, juvenile correctional systems have extended responsibility, both in institutions and on the streets, to supervise and deal with state delinquents even though many have transitioned to young adulthood and are considered legal adults in their respective states.

Blended sentencing schemes have further dismantled the border between juvenile and adult justice. In some cases of blended sentencing, juvenile system responsibility extends well into adulthood, and in other cases traditional adult system responsibility reaches down into adolescence (Butts & Mitchell, 2000).<sup>16</sup> In short, blended sentencing schemes blend responsibility where juvenile or adult courts can sentence juveniles to juvenile and/or adult correctional sanctions. There are several different types of blended sentencing

schemes in the United States, but perhaps the common link to most forms is that both the juvenile and adult correctional systems will share responsibility for offenders, such as the state delinquents examined in this article, when they continue to reoffend.

#### *Targets of the Dismantled Juvenile and Adult Border*

The effects of the eroding border between juvenile and adult justice will be most heavily concentrated on in-between offenders who are too serious, violent, or chronic for regular juvenile justice and who are perhaps not serious enough for the full effect of the adult justice system. Not surprisingly then, the best candidates for extended juvenile correctional jurisdiction into young adulthood or for blended sentencing will be state delinquents who are released from juvenile incarceration and who continue to offend in late adolescence and young adulthood.

To be sure, there is still a strong border between juvenile and adult justice for the great majority of delinquent offenders. However, for those who have made it to the deepest ends of the juvenile justice system, erosion between the two systems is a reality. The consequence is that juvenile and adult correctional systems are being asked to take on responsibilities and clients foreign to their traditional mission (Brummer, 2002). Whether this is a good or bad thing is up for debate. What is not debatable is that the erosion of the border between juvenile and adult systems means it will become more important to examine the offending patterns of the most violent, chronic, and serious of all juvenile offenders as they transition from juvenile institutionalization. Most of these offenders will be making this transition during late adolescence and as they enter young adulthood, and this is exactly the time when questions surface and are most unclear as to whether juvenile sanctions are tough enough. But this is also the time when adult sanctions may be too tough.

When institutionalized delinquents are released from incarceration, and if they reoffend, they may be more likely to be viewed as inappropriate for further juvenile intervention. In short, the best and most intense efforts in the juvenile justice system have failed. At the same time, many of these offenders may be viewed as less deserving of full adult justice because they are the youngest adults with limited, if any adult, records. This is not a new finding, and researchers of juvenile waiver have found similar evidence of these concerns and the resulting so-called punishment gap for some waived juveniles (Feld, 1987; see Kurlychek & Johnson, 2004, on the juvenile penalty). Extended juvenile correctional jurisdiction into young adulthood and blended sentencing initiatives are efforts to remedy the issue of too serious or not serious enough by, for example, allowing a juvenile to remain under the supervision of the juvenile correctional system in young adulthood, by a juvenile's adult blended sanction to be suspended provided he or she follow prescribed guidelines if and when released to the streets, or by the juvenile's sentence to continue if he or she does not follow prescribed guidelines. Different than an exclusive waiver to adult court, a blended sentencing scheme's rationale is to "give the offender some rope, enough to yank himself out of a life of crime, or to hang himself and wind up in prison" (Smallheer, 1999, p. 262). The dual options of these initiatives, unlike the either/or option of adult court transfer, means that knowledge about the factors relating to recidivism for state delinquents is important for both the juvenile and adult correctional systems.

As implied in the above discussion, the effects of the eroding juvenile-adult border will be most concentrated at the deepest ends of each system, the correctional system (Brummer, 2002). Most discussions about the eroding border of juvenile and adult justice focus on the criminalization of juvenile courts via U.S. Supreme Court decisions and the

use of various forms of transfer adopted in the states since the 1990s. These reforms have, for certain offenders, dismantled the border between juvenile and adult justice during the adjudication or trial processes. From a correctional policy standpoint, however, strictly court-based erosion of the juvenile-adult system border does not necessarily blend responsibility between the juvenile and adult correctional systems. In general, a juvenile who is successfully waived to adult court will for all intents and purposes be treated as an adult and will receive strictly adult sanctions in the community or in an adult prison. There is not much meshing of correctional boundaries here; it is an either-or approach. There has been a relative lack of attention to reforms such as blended sentencing or extended juvenile correctional age jurisdiction, however, and the initiatives have implications for juvenile and adult correctional systems that will both be called on to handle the deepest-end juvenile offenders as they reoffend in the transition from incarceration to freedom and from adolescence to adulthood.

#### *From Research to Policy*

By the time institutionalized juveniles are released to the streets, most have been through a multitude of programs and placements. They have, for all intents and purposes, received the best efforts of the juvenile justice system. In the past, as these institutionalized juveniles hit the streets and continued to offend for serious crimes, there was a separate adult system waiting for them that was ready to discard a long list of efforts and information by the juvenile justice system so that the new adult system diagnostics and priorities could take place. It is no longer feasible that all of the efforts and information collected by the juvenile system be essentially discarded by the adult system as new diagnostics and priorities take precedence. As responsibility between the two becomes more integrated, knowledge of offending patterns in the transition between the two systems is important and should be informed by information collected at the juvenile end and supplemented by new information collected into adulthood.

The above situation means that research on the experiences of these offenders is important for two primary reasons. One, this type of research can highlight the outcomes of juveniles who are released from incarceration and in general can investigate how many reoffend and at what rate. Such research would add to the few studies that have been able to track the offending patterns of institutionalized juveniles as they transition from incarceration to freedom and from adolescence to full adulthood. Second, this type of research can identify within a cohort of institutionalized juveniles how those who continue to offend may differ from those who stop offending, slow their offending, or become less serious in their offending (Guerra, 1998). These findings can be used to tailor responses for state delinquents and can help inform both juvenile and adult correctional systems on the best ways to deal with these offenders.

#### **Conclusion**

There is increasing cost, both monetary and social, for delinquents who reach the deep end of the juvenile justice system. Although no reliable estimate exists (see Cohen, 2000), state delinquents have cost the system untold resources throughout their entire interaction with the system, and with continued offending, they cause even more problems and expense. Although rehabilitation and reformation are still popular concepts for even the



most difficult juvenile offenders (Roberts & Stalans, 1998), maybe the best policy recognition for the state delinquent persists is that there may be no way to legislate, policy out, or alter existing systems to effectively address all the problems they create. The odds are that they will continue to be a drain on the system and to have numerous contacts and referrals for a long time. Indeed, the best evidence on these offenders suggests that many do not stop or slow their offending until they reach their late 20s or 30s, if they do at all (Piquero et al., 2004; Sampson & Laub, 2003). The findings herein seem to support these findings, at least until early adulthood.

Research findings on serious institutionalized juveniles indicate that certain questions should be asked about state delinquents in light of emerging evidence on their transition to young adulthood. An important but endemically unpopular question is at what point should the juvenile system essentially give up on a youth who has continually demonstrated persistence? Where is the point that the system should move away from a rehabilitative philosophy and start thinking about something else, such as incapacitation, as the best method not only to protect society but to rationally allocate finite resources? Several years ago, Feeley and Simon (1992) wrote about the so-called new penology as the emerging strategy of corrections. In this important article, they suggested among other areas that the new penology would be characterized as a shift away from intervention and treatment and more toward a concern with identifying, classifying, and managing offenders based on dangerousness (p. 452). The new penology, in other words, was a way to regulate and manage offenders based on their probability of risk so as to make crime tolerable (p. 455).

This sort of new penology was and has been eschewed by the juvenile justice system that generally deals with a more receptive and malleable population than does the adult system. And unlike the adult system in general, the juvenile justice system is still interested in individuals and solving individual problems. But for some juvenile offenders, this may be changing (or may need to change), and mounting evidence since Wolfgang, Figlio, and Sellin's (1972) pioneering study has consistently found that there is a small but disproportionately problematic group of juvenile offenders wherein change is unlikely (not impossible, but unlikely). Ignoring their young age, this irreducible percent of offenders are little more than little people in big people's clothing doing adult-like crimes in tremendous frequency. In this vein, perhaps the best candidates for regulation are state delinquents who transition out of incarceration and who continue to reoffend at a fast and furious pace as they enter young adulthood.

Although we are far from understanding all the determinants of recidivism for serious and high-rate delinquents, some of the more consistent findings implicate that those who start offending early and have long and serious records are the most likely to continue offending into adulthood. Although there are other consistent factors, the point is that if a growing body of research is finding that there is little hope that policy and practice will change them, perhaps something beyond the new penology is the most rational and socially beneficial policy to deal with these deep-end offenders. The inherent and usually fatal error with such an approach is that it implicates predicting who will and who will not emerge as the unchangeable. Certainly, some offenders who start early and seriously will desist as they enter young adulthood or before. This characterization is noted by the finding that delinquency or antisocial behavior is a good predictor of adult criminality, but most delin-

quents do not end up as criminal or antisocial adults (Sampson & Laub, 1993). Keeping these hesitations in mind, however, it is hard to ignore a growing body of evidence that points to the fact that those who start their official careers early, who accumulate a long and serious list of offenses, and who are subsequently institutionalized are almost sure to continue their offending as they transition from adolescence to young adulthood. But these are not the majority of delinquents who end up desisting as they enter adulthood. In fact, they are something different. For some reason or another, they simply do not get it, and this is a conclusion that has been informed by years of failure on the part of state delinquents. But despite the need for more research to clarify the factors pointing to this conclusion, the reality is that state delinquents are at the end of the line, and mounting research is suggesting they are the unsalvageable, at least until they reach later years of adulthood.

Because these offenders continue to be a drain on the system, perhaps a sort of social triage may be the best strategy whereby the limited resources of our systems must be rationed for only those with the best hope of change. State delinquents who continue to or who are likely to reoffend represent the critically injured for which there is little hope, and thus resources must be used where the most benefits can be garnered. This argument is still unpopular in most circles today. But, corralling these serious and frequent offenders and isolating them during the risky years may be the best option. This is not only a public safety issue but also a practical issue. With greater accountability and emphasis on the rational allocation of finite resources, local and state administrators in both the juvenile and adult system may be hard-pressed to do much else. The bottom line is that convenience (such as incapacitation and punishment) may be the most feasible option for these offenders because, unlike rehabilitation and reform, it works, at least in the short term.

It must be made clear that these questions and views are in light of the population of focus. These are state delinquents. They are the most serious, violent, and chronic that the juvenile justice system has had to handle, and they come with a long list of failures. The good news is that they represent a considerably small proportion of all delinquent offenders. Views that suggest giving up rehabilitation for incapacitation should not be asked for the majority of delinquents who desist and exit the juvenile justice system often after first referral, formal or otherwise. This is also the case for most adjudicated delinquents who end up exiting the system after successfully completing one of several community-based options. For most delinquents, the juvenile justice system is very successful and is perhaps the most successful component of the entire justice system in the United States. Therefore, zero-tolerance and zero-discretion approaches that would prescribe long determinate sentences for incapacitation purposes are usually inappropriate for most delinquents because they tend to eliminate distinctions between those who would continue to persist and those for whom treatment might, and usually does, make a difference.

The bad news is that state delinquents create most of the problems. State delinquents who persist for serious offenses after release from incarceration are simply different, and such questions need to be asked. But, such a suggestion is actually a liberal response when viewed in light of certain policy prescriptions that would incapacitate offenders well beyond what research suggests would be the point of change, regardless of the factors that influence that change.

**APPENDIX A**  
**Aging of State Delinquents After Release**

Age at Release	n	% of Releases	Aging of State Delinquents				
			Age at Wave 1	Age at Wave 2	Age at Wave 3	Age at Wave 4	Age at Wave 5
12	2	<1	13	14	15	16	17
13	12	<1	14	15	16	17	18
14	75	3	15	16	17	18	19
15	278	11	16	17	18	19	20
16	727	30	17	18	19	20	21
17	973	40	18	19	20	21	22
18	337	14	19	20	21	22	23
19	28	1	20	21	22	23	24
20	3	<1	21	22	23	24	25
21	1	<1	22	23	24	25	26
			<i>Average Age at Each Wave</i>				
12-21	2,436	100	18	19	20	21	22

NOTE:  $N = 2,436$ . In this state, the age of majority is 17. Determining adulthood by state law, this means that at the date of release and during the first year of follow up, roughly 87% of state delinquents were entering young adulthood. By the last and fifth year of follow-up, state delinquents were into early adulthood, with roughly 87% ranging from ages 21 to 26.

**APPENDIX B**  
**Variable List and Coding**

<i>Variable</i>	<i>Coding</i>
<b>Demographic variables</b>	
Race	1 = non-White; 0 = White
Sex	1 = male; 0 = female
<b>Delinquent history variables</b>	
Age first formal referral to juvenile system	Continuous coding
Age at state commitment	Continuous coding
Age at release from incarceration	Continuous coding
Length of incarceration (days)	Continuous coding
Number of felony adjudications prior to state commitment	Continuous coding
On probation at state commitment	1 = yes; 0 = no
Degree of commitment offense	1 = felony; 0 = misdemeanor
Known gang member	1 = yes; 0 = no
Violent toward family	1 = yes; 0 = no
Youth assaultive toward institutional staff	1 = yes; 0 = no
Staff force ever used to control youth	1 = yes; 0 = no
Youth in possession of a weapon while incarcerated	1 = yes; 0 = no
Youth in possession of drugs while incarcerated	1 = yes; 0 = no
<b>Risk factor variables</b>	
Number of previous out of home placements	Continuous coding
Parents divorced (if married)	1 = yes; 0 = no
Family in poverty	1 = yes; 0 = no
Family members gang related	1 = yes; 0 = no
Evidence that youth was physically abused	1 = yes; 0 = no
Evidence that youth was sexually abused	1 = yes; 0 = no
Evidence that youth was emotionally abused	1 = yes; 0 = no
Evidence that youth was abandoned	1 = yes; 0 = no
Evidence of physical neglect	1 = yes; 0 = no
Special educational needs	1 = yes; 0 = no
Need for chemical dependency treatment	1 = yes; 0 = no
Need for emotional disturbance treatment	1 = yes; 0 = no
Need for sex offender treatment	1 = yes; 0 = no
Need for capital offender treatment	1 = yes; 0 = no
Received chemical dependency treatment	1 = yes; 0 = no
Received emotional disturbance treatment	1 = yes; 0 = no
Received sex offender treatment	1 = yes; 0 = no
Received capital offender treatment	1 = yes; 0 = no
Youth mentally retarded	1 = yes; 0 = no
Youth mentally ill	1 = yes; 0 = no
Any suicidal tendencies	1 = yes; 0 = no

**APPENDIX C**  
**Variable List and Coding for Logistic Regression Models**

<i>Variable</i>	<i>Coding</i>
Race	1 = non-White; 0 = White
Sex	1 = male; 0 = female
Age first formal referral to juvenile system	Continuous coding
Age at state commitment	Dropped from analysis in favor of age at release from incarceration
Age at release from incarceration	Continuous coding
Length of incarceration (days)	Continuous coding
Number of felony adjudications prior to state commitment	Continuous coding
On probation at state commitment	1 = yes; 0 = no
Degree of commitment offense	Dropped from analysis in favor of number of felony adjudications prior to state commitment
Gang influence—known gang member; family members gang related	1 = yes; 0 = no
Violent toward family	1 = yes; 0 = no
Institutional danger—youth assaultive toward institutional staff; staff force ever used to control youth; youth in possession of a weapon while incarcerated; youth in possession of drugs while incarcerated	1 = yes; 0 = no
Number of previous out-of-home placements	Continuous coding
Parents divorced (if married)	1 = yes; 0 = no
Family in poverty	1 = yes; 0 = no
Abuse—Evidence that youth was physically abused; evidence that youth was sexually abused; evidence that youth was emotionally abused; evidence that youth was abandoned; evidence of physical neglect	1 = yes; 0 = no
Special educational needs	1 = yes; 0 = no
Treatment need—Need for chemical dependency treatment; need for emotional disturbance treatment; need for sex offender treatment; need for capital offender treatment	Dropped from analysis in favor of treatment received
Treated—Received chemical dependency treatment; received emotional disturbance treatment; received sex offender treatment; received capital offender treatment	1 = yes; 0 = no
Mental health—Youth mentally retarded; youth mentally ill; any suicidal tendencies	1 = yes; 0 = no

## NOTES

1. A more detailed review of Lipsey and Wilson's (1998) meta-analysis reveals substantial variation in effect sizes when studies are examined independently. This is primarily because of the different interventions, samples, sample-selection procedures, and methods in the various studies. The 12% reduction in recidivism reported in Lipsey and Wilson is an average reduction in recidivism for both institutionalized and noninstitutionalized delinquents.

2. We realize there are other benchmark criteria besides recidivism, such as educational improvements or social skill attainment. Historically, however, the bottom line measure of success of an intervention is arguably whether such interventions result in a reduction of recidivism. This is especially the case for serious juvenile offenders.

3. It should be noted that our sample size of females, all females released in 1997 and 1998 from their first incarceration, does not represent anomalies in terms of the numbers of females com-

mitted and released from this juvenile correctional system. In short, few juvenile females are ever committed to this state correctional facility relative to males, and thus their release numbers are also low. For example, during the past 5 years, the average number of females committed to this juvenile correctional system was 244 per year.

4. This article examines youth released from their first incarceration only because outcome data for all releases were not available to the researchers for this study. It would be preferable to examine both youth released from the first incarceration and youth who may have been incarcerated multiple times. The number of prior incarcerations could be used for a control variable in multivariate analyses.

5. In terms of follow-up, 1997 youth could have technically been followed for 6 years or 72 months. To standardize exposure time, each youth was followed exactly 5 years from his or her individual date of release despite the fact that for some parolees an additional year of follow-up was available.

6. Many of the variables collected by the juvenile correctional system and provided to us are dichotomous and simply indicate the absence or presence of an indicator. For example, family in poverty is denoted with a yes (1) or no (0), and there is no further detail provided. This is the case for many of the categorical independent variables.

7. The data collected at orientation and assessment are current to the youth's commitment date. This means that these factors may have changed from commitment until the end of the follow-up period, which is 5 years from the date of release from incarceration. It is entirely possible that local-life circumstances or current information differ substantially on these variables today. This is an unfortunate but unavoidable consequence of this data set.

8. The data include all arrests after institutionalization, including arrests as a juvenile and arrests after the juvenile entered legal adulthood in this state, which is at age 17. All juvenile and adult arrests in the state under study are centralized.

9. Normally, an independent samples *t* test is inappropriate with a nominal or ordinal dependent variable such as whether the youth was a known gang member (1) or not (0). The assumptions of normality and homogeneity of variance are violated, and the dependent variable is in categorical form. For all comparisons with a nominal or ordinal dependent variable across sex groupings, Mann-Whitney *U* nonparametric tests were performed for two independent samples, and nominal or ordinal variables were categorized as numeric in SPSS. Also conducted were independent sample *t* tests. Results of both analyses produced exact results, and thus the more familiar *t*-value was placed in Table 1 and Table 2.

10. The percentages of the race of state delinquents released in 1997 are approximately the same as the commitment profile by race in this state juvenile correctional system. Thus, racial proportions of releases in this study are not disproportionate to the racial proportions of the correctional system as a whole. In general, roughly 80% of this correctional system is minority, and this is reflective of the diversity within this state.

11. The codes and categories are as follows: 1 (misdemeanor C); 2 (misdemeanor B); 3 (misdemeanor A); 4 (state jail felony); 5 (felony 3); 6 (felony 2); 7 (felony 1); 8 (capital murder). These are rank-ordered from least serious (1) to most serious (8).

12. It is possible that some offenders incurred more than one arrest on the same day or that some youths committed multiple crimes per incident, and this could be reflected as multiple arrests for the same incident.

13. Age 17 is the age of majority in this state.

14. Although logistic regression is robust to violations of normality and linearity, a major assumption is that the independent variables will not be collinear. In general, bivariate correlations were inspected, and correlations among many independent variables revealed potential collinearity among

several independent variables. In addition, multicollinearity diagnostic statistics were produced by running an ordinary least squares (OLS) model and inspecting the tolerance and the variance inflation factor (VIF) among the many independent variables. This was done because correlations may not always uncover interdependencies among several variables. OLS will produce tolerance and VIF for each variable regardless of the type of dependent variable placed in the equation. Thus, although the model is useless for meaningful analysis and interpretation, tolerance and VIF factors note where multicollinearity may be an issue because collinearity statistics are based only on independent variables. There were variables with high bivariate correlations that corresponded to relatively high VIF. In the interests of remedying multicollinearity and reducing the number of variables to cases, especially for the female sample, several categorical independent variables in the descriptive analysis were collapsed and/or combined into dichotomies, and three variables (age at state commitment, degree of commitment offense, and treatment need) were dropped because of a high correlation with age at release from incarceration, number of felony adjudications prior to state commitment, and treatment received. As for collapsing and combining, the four variables indicating (a) whether the youth assaulted institutional staff, (b) had force used against them, (c) possessed drugs while incarcerated, or (d) possessed a weapon while incarcerated were combined into a variable indicating so-called institutional danger. The presence of one or more of the above was coded as 1 (institutional danger) or 0 (not an institutional danger). After collapsing or combining or dropping variables that could not be meaningfully combined or collapsed, there was no evidence of significantly high bivariate correlations, and another OLS model with the newly combined variables indicated that none of the variables exceeded 2.0 VIF. See Appendix C for collapsed, combined, and dropped variables.

15. A fourth comparison group might include delinquents who have been incarcerated and released multiple times. We were limited in this study because we did not have outcome data for offenders with multiple incarcerations. The number of prior state incarcerations could be used as a valuable control variable in a multivariate analysis.

16. For example, in Texas a juvenile can theoretically be under the jurisdiction of the juvenile correctional system until age 57 under Texas's Determinate Sentencing Law. Although this individual will be transferred to an adult prison usually at age 17 or 18, there is a growing connect between juvenile and adult justice via these types of sentencing options.

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