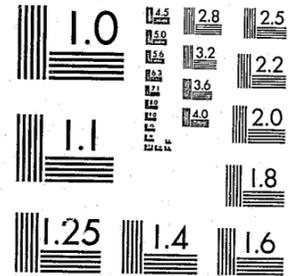


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# Early Identification of the Chronic Offender

## EXECUTIVE SUMMARY

U.S. Department of Justice  
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DEPARTMENT OF THE YOUTH AUTHORITY

FEBRUARY 1982

State of California

EDMUND G. BROWN JR.  
GOVERNOR

Youth and Adult Correctional Agency

HOWARD WAY  
SECRETARY



EARLY IDENTIFICATION OF THE CHRONIC OFFENDER

EXECUTIVE SUMMARY

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LDA 82-1

## FOREWORD

One of my first tasks as incoming Director of the California Department of the Youth Authority was to review this latest report from our Research Division. The study, funded by a grant from the National Institute of Justice, began in the fall of 1979 and was only recently completed. It is unusual in that it followed the careers of Youth Authority wards over a period of ten years, covering the young adult period, which has typically been shown to be the peak years of criminal activity.

The research was possible because of the availability of data collected over a period of many years by the Division of Research. Compilation of the information represented a department-wide effort, with important contributions made by institutional administrators and other staff who participated. The research staff who took part in this project were able to collect and organize a large quantity of data to furnish what I feel are tremendously enlightening, yet sobering, insights into the crime patterns of the chronic offender.

It should come as no surprise that the majority of the young offenders whose cases are analyzed in this study were eventually arrested for crimes as adults. Past studies done by the Youth Authority and other researchers in various parts of the country have shown that a high proportion of serious juvenile offenders can be expected to recidivate. Cases committed to the Youth Authority are the most serious delinquents, who already have failed to respond to the efforts of other agencies.

The findings come at a time of considerable controversy and sharp differences of opinion, both within and outside the criminal justice community, about how best to deal with juvenile and youthful offenders. Some readers will undoubtedly interpret the data to support their own points of view, whether they be for maintaining the traditional approaches or for completely revamping the criminal justice system. Those who would solve the crime problem through incapacitation may regard the results as supportive of their position. Others may view the report as confirming the need for intensive treatment programs earlier in the delinquent's career.

It is clear that both positions receive support in the study. With some extremely delinquent and sophisticated youths we are too late with too little to change their criminal behavior. With others, more intensive efforts both in the institutions and the communities during parole must be pursued to make sure they are given every opportunity both to modify their attitudes and behavior and to learn skills that will help them become self-sustaining and law-abiding members of society. As Director, I intend to make every effort to provide help and support to those young offenders who show signs of wanting to improve themselves. For those who prove intractable, our goal will be to protect the public by terminating parole at the first indication that they cannot conform to the standards of the community. We also will incarcerate those committed or returned to Youth Authority institutions or camps for as long as necessary to provide a reasonable chance of later success on parole.

Although this study on "Early Identification of the Chronic Offender" sheds important light on career patterns of criminal behavior, much is yet to be learned on this subject. The Department intends to do much more work in order for society to learn more about how to identify chronic offenders at an early stage and take appropriate action for its own protection on a case-by-case basis.

Antonio C. Amador  
Director

## EXECUTIVE SUMMARY

This study was undertaken to explore the extent to which chronic adult criminal offenders could be identified early in their careers. Followup arrest data covering the early adult years of peak criminal activity (from approximately 18 to 26 years of age) were obtained on three samples of delinquent youths who had been incarcerated in California Youth Authority institutions during the decade of the 1960s (Preston, Northern California Youth Center (YCRP), and Fricot). The youths had all been involved in research projects in the course of which extensive demographic, psychological, and behavioral data had been collected. The followup data were obtained primarily from official arrest records of the California Bureau of Criminal Investigation and Identification (CII). Supplementary data were obtained from the Federal Bureau of Investigation (FBI) and the California Bureau of Vital Statistics to ensure that individuals with no records--or only minor records--of arrests in CII files did not have records in other state and/or were not deceased. The original study dates, median followup periods and median ages are shown in Table 1.

The coding and summarization of the followup offense data focused on arrest incidents. The most serious charge for each arrest was recorded and subsequently classified as being a violent-aggressive, violent-economic, property, or minor offense. Using each offender's most serious arrest, an offender typology was developed for classifying individual offense careers as chronic violent-aggressive, chronic violent-economic, chronic property, chronic unclassified, or nonchronic. Along with certain minor offenders, individuals with only a single misdemeanor assault or a single

TABLE 1

Study Dates, Median Followup and Median Age at Followup by Sample

	<u>Preston</u>	<u>YCRP</u>	<u>Fricot</u>
Original study	1966-67	1969-71	1960-63
Start of followup period	1967-69	1970-72	1961-64
Followup data collection	1978-80	1979-80	1979-80
Median followup - months	140	112	186 (117 as adults)
years	11.7	9.3	15.5 (9.3 as adults)
Median age at followup	29	26	26

property arrest were placed in the "chronic unclassified" category to distinguish them from those whose careers more clearly called for classification in one of the major categories. Those with arrests for only minor offenses were placed in the unclassified category if their offense histories contained patterns of repeat offenses of specific kinds or if they had more than five minor arrests; those with fewer minor arrests were placed with nonoffenders into the "nonchronic" category. For some analyses, these categories were further collapsed into violent vs. nonviolent offenders and chronic vs. nonchronic offenders.

Both descriptive and predictive data were presented. Descriptive analyses focused on the patterns of offense careers, probabilities of continued offending, maturational trends, offense specialization, and differences in background, attitudinal, and behavioral characteristics among the types of chronic offenders. Predictive analyses focused on the prediction of individual careers as well as more theoretical, exploratory predictions involving numbers of offenses. Multiple regression

was the primary mode of analysis. Predictions of chronic and violent offenders involved regressing the chronic/nonchronic and violent/nonviolent dichotomies on a reduced list of variables common to both large samples (Preston & YCRP). The distributions of subjects on the predicted scores from these regressions were arrayed to show the predictive accuracy of various solutions. Exploratory analyses involving number of offenses and types of offense careers used more complete sets of data, with some variables being unique to each data set.

In the regressions predicting type of arrest career, ethnicity was not entered due to its ambiguous meaning and to the unlikelihood and undesirability of its being used as a basis for decisions. In the more exploratory analyses predicting number of arrests, however, ethnicity was entered (last, after other variables were allowed to enter).

Descriptive Analyses

The followup data showed that a high percentage of the juvenile offenders engaged in serious criminal activity as adults. Most (66%) were arrested for one or more violent offenses (murder, rape, assault, robbery), and over 80% were arrested for at least one felony offense. Consequently, most of the subjects (86%) were classified as chronic offenders. Well over half of the youths in the Preston and YCRP samples were arrested at least once within the first year of parole from the Youth Authority, usually for a minor offense. The time to first violent-aggressive, violent-economic, or property offense arrest, however, was considerably longer for both samples, suggesting that short followup periods are likely to substantially underestimate the number of parolees who are arrested for serious crimes.

Arrest rates for the larger samples were found to decline steadily after age 18, even when we controlled for state-level incarceration and complete desistance from further crime. Specialization in criminal behavior in all three samples was minimal, but there was a slight trend for more specialization among property offenders and less among the more serious offenders.

A breakdown of the numbers of offenses of various kinds for which members of the three samples were arrested is presented in Table 2. As shown in the last two columns, during the approximately 10 years following their incarceration as juveniles, the 2,783 offenders in the sample were arrested a total of 26,235 times, for an average of 9.43 offenses per subject. Of these arrests, 4,593 were for violent offenses (violent-aggressive plus violent-economic). These arrest data taken from rap sheets undoubtedly understated the total number of offenses that occurred; they did not reflect, for example, the number of undetected crimes committed or the number for which no arrests were made. The amount of hidden crime involved can be estimated from data presented by Peterson and Braiker (1980). These authors administered extensive questionnaires to a large sample of California Department of Corrections inmates. Among those inmates who had serious juvenile records, the official rap sheets showed an arrest for only one out of every six self-reported robberies and one out of every 20 self-reported burglaries. If the number of arrests for robbery and burglary were multiplied by these figures, it would be clear that the offenders in these samples were responsible for a very large number of crimes.

Analysis of background characteristics by type of offense career showed that those delinquents whose criminal activity persisted differed

TABLE 2

Numbers of Arrests for Offenses of Selected Kinds and Averages per Subject by Institution

Type of Arrest	Preston (n=1,622)		YCRP (n=960)		Fricot (n=201)		All Three Samples Combined (n=2,783)	
	No. of Arrests	Avg. Per Subject	No. of Arrests	Avg. Per Subject	No. of Arrests	Avg. Per Subject	No. of Arrests	Avg. Per Subject
<b>Violent/Aggressive</b>								
Homicide.....	132	.08	43	.04	5	.02	180	.06
Rape.....	120	.07	56	.06	12	.06	188	.07
Aggravated Assault.....	1,170	.72	517	.54	92	.46	1,779	.64
Misdemeanor Assault.....	472	.29	232	.24	37	.18	741	.27
Total Violent/Aggressive.	1,894	1.17	848	.88	146	.73	2,888	1.04
<b>Violent/Economic</b>								
Armed Robbery.....	316	.19	179	.19	31	.15	526	.19
Strongarm Robbery.....	722	.45	294	.31	57	.28	1,073	.39
Other Person Crimes (kid- napping, extortion, etc.)	65	.04	33	.03	8	.04	106	.04
Total Violent/Economic...	1,103	.68	506	.53	96	.48	1,705	.61
<b>Property</b>								
Burglary.....	2,239	1.38	1,047	1.09	211	1.05	3,497	1.26
Grand Theft.....	313	.19	178	.19	42	.21	533	.19
Receiving Stolen Property..	522	.32	392	.41	61	.30	975	.35
Forgery.....	359	.22	162	.17	44	.22	565	.20
Grand Theft Auto.....	522	.32	125	.13	39	.19	686	.25
Total Property.....	3,955	2.44	1,904	1.98	397	1.98	6,256	2.25
<b>Minor</b>								
Joyriding (nonfelony auto theft).....	449	.28	324	.34	79	.39	852	.31
Misdemeanor Theft.....	857	.53	502	.52	92	.46	1,451	.52
Sex Offenses.....	221	.13	91	.09	20	.10	332	.12
Weapons (carrying, concealing, etc.).....	458	.28	229	.24	40	.20	727	.26
Drug Use.....	2,497	1.54	842	.88	150	.75	3,489	1.25
Drug Sales.....	189	.12	94	.10	15	.07	298	.11
Liquor.....	1,632	1.01	533	.56	111	.55	2,276	.82
All Other Offenses.....	3,804	2.35	1,796	1.87	361	1.78	5,961	2.14
Total Minor.....	10,107	6.23	4,411	4.59	868	4.32	15,386	5.53
Total.....	17,059	10.52	7,669	7.99	1,507	7.50	26,235	9.43

from nonchronics on a wide variety of background, psychological, and behavioral characteristics. The chronic offenders more often came from families of lower socioeconomic status, were of Black ethnicity, had more siblings, were more retarded in school (and more negative about school), were younger at first police contact, had longer prior records, expressed more antisocial attitudes, and were behaviorally more hostile, more obtrusive, less responsible and less conforming. They also tended to be less socially mature (as gauged by I-level status), less intelligent (as gauged by aptitude or achievement test scores), and reported greater involvement in a variety of antisocial activities. Further, when characteristics of the five offender types were compared, consistent linear trends were found, with those who engaged in more serious violent criminal acts at one extreme and the nonchronics at the other.

There were few surprises in these data. The findings, for example, closely paralleled those of West and Farrington (1977), who found that extent of seriousness and chronicity correlated with a constellation of adverse family factors, aggressive behavior, antisocial attitudes, and a lack of restraint in engaging in a variety of misbehaviors. The greater the number of these elements present, the greater was the probability of a juvenile record, and the more likely was the individual to continue his criminal behavior into adulthood.

Of special interest was the potential richness of the findings from the small Fricot sample (n=201) in generating hypotheses about very early indicators of adult criminality. Differences between chronic and nonchronic offenders as well as among the five types of offenders were largely consistent with those shown for the two larger samples. In addition, the

finding of unusually deviant scores for the chronic offenders (and especially the violent offenders) on measures previously shown to be correlated with brain dysfunction (Spiral Aftereffect, and the WISC Block Design) suggested that the presence of brain abnormalities should not be dismissed as a possible "cause" of criminality. Somewhat unexpected was the finding that number of adult offenses, whether violent or not, correlated with aggressive behavior, but did not appear to be related to bizarre or aggressive fantasy content as gauged by response to projective tests (TAT and Rorschach).

#### Predicting Chronic Offenders

The primary objective of the project, however, was not to generate hypotheses, but to test them: in particular, the hypothesis that juvenile delinquents whose serious criminal behavior persists into adulthood can be distinguished from those who do not go on to chronic adult careers. The results of our predictions showed that in both large samples chronicity could, indeed, be predicted with a high degree of accuracy, primarily because of the high base rate of chronicity (approximately 85%). However, the amount of variance explained within these populations of serious offenders and, thus, the increase in accuracy achieved by including a variety of background, psychological, and behavioral measures in the predictions was small. For the Preston sample, the amount of variance explained in predicting chronicity vs. nonchronicity was about 8%. As shown in Table 3, this translated into a true positive hit rate of over 95% for the one-third of the sample with the worst scores (i.e., at highest risk). But because of the high base rate for chronicity, a large majority (79%) of that third of the sample with the lowest predicted scores also

TABLE 3

Distribution of Preston Sample Within High, Medium, & Low Probability Categories on Chronic vs. Nonchronic Regression

Probability Level (Score)	Total Sample		Chronics		Nonchronic		Percent Chronic
	No.	%	No.	%	No.	%	
High Risk (>.92)	540	33.3	515	35.9	25	13.4	95.4
Medium (.83-.91)	524	32.8	480	33.5	44	23.7	91.6
Low Risk (<.83)	555	33.8	438	30.6	117	62.9	78.9
Total	1,619	100.0	1,433	100.0	186	100.0	88.6

TABLE 4

Distribution of YCRP Sample Within High, Medium, & Low Probability Categories on Chronic vs. Nonchronic Regression

Probability Level (Score)	Total Sample		Chronics		Nonchronic		Percent Chronic
	No.	%	No.	%	No.	%	
High Risk (>.87)	329	34.4	303	37.7	26	16.7	92.1
Medium (.76-.86)	315	32.8	280	34.9	35	22.4	88.9
Low Risk (<.76)	315	32.8	220	27.4	95	60.9	69.8
Total	959	100.0	803	100.0	156	100.0	83.7

proved to be chronic offenders. The results, shown in Table 4, for the other large sample (YCRP) were similar.

It is apparent that within a relatively homogeneous population of already serious delinquents, distinguishing those whose careers do not persist into adulthood cannot be easily accomplished. Within a more heterogenous population with a lower base rate of chronicity, such as a group of probationers, such distinctions could no doubt be made with considerably greater accuracy.

The high rate of continued offending shown for these youths (overall 86%) should come as no surprise. The rate of chronic offending shown by those with three or more police contacts in the Wolfgang, Figlio and Sellin (1972) study was approximately 75%. The young offenders in our samples represented an even more select group of youths who were placed in California Youth Authority institutions only after a long process of screening and continued failure on probation, including, for many, prior placements in county camps and/or Youth Authority institutions. These youths, in other words, had been accepted for CYA commitment largely because of their persistence in delinquent activity, thereby comprising a highly select population of the most serious juvenile delinquents. In 1979, for example, only .6% of the initial juvenile petitions filed in California and 4.5% of subsequent petitions (those filed on juveniles who were already wards of the court) ended in a CYA commitment.

Predicting Violent Offenders

A large number of the arrests made of the members of our samples were of a violent nature. We did not initiate this study for the purpose of understanding and/or predicting violent criminal careers. We had

assumed that we would find the base rate of violence within the sample too low to make such predictions feasible. However, we found the base rate for violent acts to be high in all three samples (approximately 66%).

As shown in Tables 5 and 6, the predictions of violence turned out to be somewhat more accurate overall than were the predictions of general chronicity. For example, 82% of those one-third of the Preston sample with the highest predicted scores actually were violent offenders, compared with 48% in the low probability group. This moderate improvement in accuracy over the base-rate prediction of 66% for predicting chronic violent offenders was due not only to their more even distribution in the population, but also to the more extreme scores of the chronic violent offenders on several demographic, behavioral and psychological variables. We believe that the data in the report lead to the conclusion that within a population of serious delinquents it is possible to predict future violent behavior with a sufficient degree of accuracy to be of some practical use as well as theoretical importance.

Predicting Number of Arrests

A second series of regressions were run to predict the number of arrests rather than the type of arrest career. As expected, variables related to prior delinquent history (age at admission, total prior offenses, etc.) contributed to the predictions. In addition to prior record, the solutions verified the predictive relevance of demographic, psychological, attitudinal, and behavioral variables (such as obtrusiveness), along with variables associated with racial differences.

TABLE 5

Distribution of Preston Sample Within High, Medium, and Low Probability Categories for Violent vs. Nonviolent Regression

Probability Level (Score)	Total Sample		Violent		Nonviolent		Percent Violent
	No.	%	No.	%	No.	%	
High Risk (>.73)	562	34.7	462	43.2	100	18.2	82.2
Medium (.59-.72)	536	33.1	359	33.6	177	32.2	67.0
Low Risk (<.58)	521	32.2	248	23.2	273	49.6	47.6
Total	1,619		1,069	100.0	550	100.0	66.0

TABLE 6

Distribution of YCRP Sample Within High, Medium, and Low Probability Categories for Violent vs. Nonviolent Regression

Probability Level (Score)	Total Sample		Violent		Nonviolent		Percent Violent
	No.	%	No.	%	No.	%	
High Risk (>.62)	301	31.5	212	39.5	89	21.1	70.4
Medium (.50-.61)	345	36.0	194	36.2	151	35.9	56.2
Low Risk (<.49)	311	32.5	130	24.3	181	43.0	41.8
Total	957	100.0	536	100.0	421	100.0	56.0

One of the solutions with the highest predictive accuracy was that involving the number of arrests for violent offenses for the largest sample (Preston). The solution, which accounted for 16% of the variance, indicated that repeated violent criminal arrests were associated with prior juvenile record (especially involving violent offenses), low intellectual ability, low socioeconomic status, psychological deviance (as manifested by expressed asocial, antisocial, and/or atypical attitudes, beliefs, and perceptions), low social anxiety, obtrusive behavior, and Black ethnicity.

In these solutions ethnicity was found to be predictive, with Black background being related to arrests for the more violent offenses for the Preston sample (Hispanic background was predictive for total arrests) and being of Black or Hispanic background being predictive of all types of arrests for the YCRP sample. The meaning of these observed racial differences, however, is unclear. The ethnicity variables can be seen as single indicators of a potentially large number of unmeasured, crime-related differences in experiences, opportunities, associations, and attitudes. Although their statistically significant contribution indicates that some part of what we cannot explain about crime is related to ethnic background, there are many possible bases for such a relationship. In future studies, we must look beyond the variables included in these analyses in order to come to a better understanding of the apparent relationship between ethnicity and crime.

The consistent contribution in these solutions of scores on Behavior Checklist Obtrusiveness Scale is also worthy of comment. The Obtrusiveness Scale is comprised of such items as bullying, bragging, agitating,

interrupting, cheating, quarreling, instigating (arguments or fights), and low frustration tolerance. In some of the solutions, high ratings on obtrusiveness were accompanied by low scores on social anxiety and/or by behavioral indicators of insecurity and inhibition. This finding is consistent with the data and theory of aggressiveness presented by Olweus (1972) who suggested that aggressive behavior is especially predictable if it is evaluated along with measures of aggressive inhibitory tendencies and the situational context. He has also shown that aggressiveness is highly stable and can be rated with some accuracy at a very young age (Olweus, 1980).

#### Predictions Using The Five-Level Typology

Predictive analyses using the five-level typology showed that the ranking of individuals in relation to their most serious arrest has some merit. Ranks along this loose continuum were almost as predictable as were chronicity and violence alone (each considered as a single dimension). These results suggest that it may be possible to predict the overall seriousness of an individual's arrest career with greater accuracy if more refined outcome categories are used. Beyond this linear dimension of seriousness, moreover, the discriminant analyses revealed some qualitative differences. The violent-economic offenders, who pursue a more planful, economic approach to crime, for example, differed from violent-aggressive and property offenders, at least to a statistically significant extent. Such theoretically interesting findings may have utility for refining a prediction equation (or set of equations) that can provide greater accuracy.

### Fricot Analyses

Although the findings from the predictions based on the small Fricot sample must be regarded as only suggestive, the number of adult arrests (after age 18) and adult arrests for violent offenses were predictable to a statistically significant extent from information collected while these youths were only eleven years of age. Many of the same variables found to be predictive for Preston and YCRP were also predictive for this sample, reinforcing the notion that adult criminal behavior is to a degree predictable at an early age. For some youths, delinquency does not appear to be a transitory activity that occurs in reaction to immediate pressures and temporary environmental-family-maturational influences, but a more enduring characteristic of the individual. Of course, it is likely that the social backgrounds of these youths were conducive to the development both of delinquency and of related (i.e., behavioral and psychological) characteristics. If we assume stability in their social situations, our predictions can also be understood to some degree as the predictions of continued exposure to those environmental influences. Together, the characteristics of the individual and the continued exposure to criminogenic environmental influences produce and maintain a greater likelihood of their engaging in criminal behavior as adults. That the propensity for persistent criminal behavior is not immutable was, however, suggested by the fact that controlling for other relevant variables, youths who participated in the intensive treatment program at Fricot committed fewer offenses as adults than did the controls.

### Implications

On the basis that a relatively few chronic offenders commit a disproportionately large number of crimes, Petersilia, Greenwood, and Lavin (1977)

concluded that incapacitation may be the most direct alternative for curtailing criminal behavior, especially if the most serious of the offenders can be identified prior to the decline in activity that seems to occur with age. The data from the present study suggest that chronic offenders, especially those who are arrested for the more serious violent crimes, can be identified prior to their peak years of criminal activity with sufficient accuracy to be of practical as well as theoretical importance. The possible implications that follow from these conclusions, however, are not restricted to variations on the currently popular themes of incapacitation and/or harsher punishment. There is no reason to believe that equal or greater consideration should not be given to the much-questioned concepts of early (and intensive) intervention and improved rehabilitation programs.

Our data suggest that some of the important indicators of later chronic criminal and violent behavior are manifest and observable at an early age. The youth's being in what Wolfgang et al. (1972) referred to as a "disadvantaged" position can readily be deduced. The presence of obtrusive, aggressive behavior in young children and adolescents is evident and can be reliably gauged. Teachers have no problem identifying children who are seriously retarded in their school work. There is little difficulty, likewise, in determining whether a youth has negative attitudes toward authority, or is prone to engage in antisocial behaviors. Our findings suggest that those who are at the extremes of these several characteristics and who are already extensively involved in delinquency can be predicted with a high probability to continue to be offenders as adults unless changes occur in their environment and behavior.

It is obvious from the large number of crimes committed by these youths that an intervention strategy with even a modicum of success at preventing future crimes might provide substantial crime-reduction benefits. A treatment program that had the effect of reducing the number of crimes committed by these youths by only 10%, for example, would have prevented over 2,600 crimes resulting in arrests; of these, over 400 would probably have been violent. Similarly, a program that reduced by 20% the number of crimes committed only by, say, 19 year-olds in the large samples would have prevented over 700 crimes. Based on the findings of Peterson and Braiker (1980), we would expect that the actual number of crimes prevented would have been much larger than these estimates based on arrests would suggest. We cannot speculate here as to the nature and scope of any intervention strategy, nor do we advocate any particular changes in the operation of the juvenile or adult justice systems. We merely suggest that in such populations as these, wherein the probability of engaging in chronic criminal careers is very high, successful intervention efforts could have a potentially profound effect on crimes committed. Further, by providing a basis for identifying and excluding those with the least potential for chronic or violent careers, actuarial studies such as this one may allow for more efficient utilization of the treatment resources.

#### Directions For Future Analysis

The three data sets used in the present study contained more predictors than were systematically included in the analyses. Moreover, differences among the data sets precluded the straightforward cross-validation of

results between samples. Time and resource constraints, in other words, forced us to limit the present study to exploratory analyses within samples using a rather circumscribed set of predictors. As the analysis of these data sets continues, we will build upon the present findings by incorporating more of the information available for these youths, and by drawing upon other analytic techniques.

Not included in most of the analyses were variables that were unique to the individual data sets and others that were highly intercorrelated. Among other possible variables not used in this study were measures of changes in attitudes and behavior that occurred during the youths' institutional stays. These variables may prove useful for understanding why some individuals with high predicted scores for violence or chronicity did not engage in such careers. Similarly, the exclusion of many of the seemingly-redundant psychological and behavioral variables may have reduced our ability to fully understand and predict specific kinds of offense career patterns. In future analyses, these data will be considered for inclusion, with safeguards used to minimize the potential for instability due to high intercorrelations among some of the variables. Additional factor analyses of related psychological and behavioral measures, and secondary factor analyses, for example, may point to more general variables that can be used for explanation and prediction. Using factor scores rather than representative variables may also increase stability.

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