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FINAL REPORT

CRIMINAL CAREERS AND CRIME CONTROL:
A MATCHED-SAMPLE LONGITUDINAL RESEARCH DESIGN, PHASE II
(89-IJ-CX-0036)

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ACQUISITIONS

I. PROJECT ACTIVITIES

The project activities described in this final report relate to the second phase of the project (1/1/90 - 12/31/91). As stated in the original grant proposal, the major goal of our two phase study was to code, recode, computerize, and reanalyze the raw data from Sheldon and Eleanor Gluecks' three-wave, matched-sample, prospective study of juvenile and adult criminal behavior that originated with Unraveling Juvenile Delinquency (1950). The Gluecks' longitudinal research design contained a sample of 500 urban male delinquents age 11 to 17 and 500 urban male nondelinquents age 11 to 17 matched case by case on age, race/ethnicity, IQ, and neighborhood socioeconomic status. Over a 25 year period the Gluecks' research team collected information for these 1,000 men with respect to key social, psychological, and biological factors; changes in salient life events; patterns of criminal careers as measured by both official records and personal interviews, and official criminal justice interventions (e.g., arrest, incarceration). The subjects were originally interviewed as juveniles (average age 14), at age 25, and at age 32. Upon their retirement from the Harvard Law School the Gluecks gave their original data files to the Harvard Law School Library. As of October 31, 1986, the Henry A. Murray Research Center of Radcliffe College has acquired on a long-term loan basis the Unraveling Juvenile Delinquency data plus all of the subsequent follow-up data relating to the original 1,000 cases.

The first phase of this research project was devoted to coding, recoding, and computerizing the detailed criminal histories of the 500 original delinquents in the Gluecks' study (see Laub and Sampson, 1990). Using these data, the second phase of the grant focused on the analysis of fundamental issues in criminal careers such as participation in crime, frequency of offending while free, and age of onset and career length. Another component of the project was a comprehensive analysis of specialization and escalation in the approximately 5,800 criminal events generated by the 500 delinquents. We also examined the effects of criminal justice sanctions on subsequent individual crime rates. This final report overviews the major procedures, findings, and products stemming from the project.

II. DESCRIPTIVE PATTERNS OF CRIMINAL CAREERS

In Phase II we constructed detailed criminal career variables on all arrests from childhood to age 32 for the original delinquent sample (N = 500). Variables constructed included crime-specific measures of frequency of offending per day free among active offenders, career length, official sanctions (e.g., conviction and incarceration rates), and age of onset of arrest and persistent misbehavior.

Tables displaying descriptive results from this analysis are attached. Tables 1 and 3 show participation and frequency rates by crime type, and Table 2 displays the full spectrum of arrest events by crime type and charge. In general, these data are consistent with the well-known finding that crime declines with age (see Farrington, 1986), although certain types of crime (e.g., violent, robbery, alcohol/drugs) show no decline with age for frequency of offending while free (i.e., not incarcerated).

Tables 4 through 6 display key results on age of onset and the criminal career, including career length and detailed measures of age of onset of arrest and persistent misbehavior. For example, in Table 4 hazard rates and onset rates for each age by type of behavior (arrest vs. parent-reported) are listed. Although we find a fairly substantial negative relationship between age of onset and juvenile offending, there is not much of a long-term relationship between age of onset and adult career parameters (Tables 6, 7). Therefore, within a sample of high-rate offenders, the Glueck data suggest that while age of onset has a modest negative relationship with career length and the frequency of juvenile offending, it does not predict the frequency of offending in later adulthood (ages 17-25 and 25-32).

III. SPECIALIZATION AND ESCALATION

Another objective of this study was to establish the extent to which offending patterns were characterized by trends in specialization and escalation. Whether or not offenders become increasingly specialized in certain crimes or escalate in the seriousness of their criminal behavior over time are crucial questions bearing on the efficacy of criminal justice policy. Indeed, the effectiveness of a policy of selective incapacitation hinges upon the identification of persons who pose a future risk and are not decreasing in the rate or seriousness of their offending. We must thus identify at what point, if any, in the life cycle offenders begin to specialize or escalate in the seriousness of their behavior. By contrast, if we are unable to identify points of specialization, or clear patterns of escalation, then policies of selective incapacitation may be based on inaccurate assumptions about the nature of offending.

Unfortunately, much previous research on specialization and escalation is based on either juveniles or adults. The Glueck

data counteract this limitation by providing a sample of offenders for whom we can assess trends in specialization and escalation from adolescence into adulthood. To assess levels of specialization and escalation, we thus use the criminal history records of the 500 delinquent boys from first arrest to age 32. From the list of 58 possible offense types, categories of offending were constructed for use in transition matrix analysis. These matrices represent the probabilities of switching from one type of offending to another. Matrices of probabilities are computed for each arrest transition (e.g., first arrest to second arrest) that represent the probability of committing an offense based on the previous type of offense. Transition probabilities can then be grouped to form summary matrices that reflect a weighted average of all individual arrest transitions.¹

The crime categories that are used for juveniles and adults and the offenses that comprise these categories appear in Tables 8 and 9. This classification scheme reflects not only relevant policy issues but is also intended to be comparable to previous studies of specialization and escalation (see Davis, 1992). In addition, certain categories are used because of the prevalence of specific crimes in juvenile and adult offending.

Juvenile Stationarity, Specialization and Escalation

Juvenile arrest transitions were analyzed to assess the degree to which there were differences in the probabilities of crime switching across time. For juvenile offending processes there is evidence of nonstationarity, suggesting that the type of next offense is in part dependent on the offense (arrest) number and not just the previous type of offense.²

1. However, one dimension of the dynamic offending process that must be established first is whether or not individual matrices are stationary. Stationarity is established if the probability of switching from one crime type to another remains constant across time. A finding of nonstationarity suggests some level of either escalation or de-escalation in offending -- a change in the direction of seriousness. Nonstationary matrices should be viewed individually for transition-specific processes.

2. The stationarity test of the transition probabilities involves crosstabulations that are stacked into three-way tables. These matrices have the states occupied at an earlier time (previous arrest) in the rows and the states occupied at the next point in time (next arrest) in the columns with the levels of the stack corresponding to the transition period (arrest 1-2, 2-3, etc.). The cells of these tables contain the observed frequencies of particular offense categories and log-linear contingency table methods are used for the assessment of stationarity. The log-linear model corresponding to time stationarity tests whether or not the ending state (e.g., arrest

An additional test of stationarity that focuses on offense-specific transitions reveals that nonstationarity is due to transition-dependent changes in burglary and status offending. Specialization and escalation statistics for juvenile burglary and status offending were thus examined for the first five individual arrest transitions. These statistics shed light on the escalatory and/or de-escalatory processes underlying the finding on nonstationarity.³

Specialization is found, if it exists, along the diagonal of the matrices. Since we can expect that the most likely next crime will be one that is prevalent, raw probabilities are not sufficient as indicators of specialization. Farrington et al. (1988) suggest a measure of specialization known as the "forward specialization coefficient" (FSC) whose quantity will be zero if offending is completely versatile and one when there is perfect forward specialization. The FSC can be used to assess the degree of specialization for a given offense type and an "adjusted standardized residual" (ASR) (see Bursik, 1980) can be used as a test of the statistical significance of the FSC.⁴

Table 10 presents the summary matrix and statistics for juvenile offending. With the exception of probation violation all offense categories indicate a statistically significant

...Continued...

2) is a function of the starting state (arrest 1) but not of time (Knoke and Burke, 1980: 55). The test of the null hypothesis that all of the matrices reflect the same offending properties, and that the probability of switching does not vary across transitions, is based on the chi-squared statistic involving observed and expected frequencies.

3. In conducting the offense-specific test, the first row of the matrix is the observed transitions of a particular offense category at arrest 1 to all categories at arrest 2. The second row is the observed transitions of the same offense at arrest 2 to all categories at arrest 3 and so on. For this test there are as many rows as arrest transitions which in this case is 10 transitions representing 11 arrests, and as many columns as there are crime categories. Again, the results of a chi-square test are interpreted to establish stationarity or nonstationarity in offense-specific processes.

4. The formula for calculating the FSC is:

$$\frac{\text{OBSERVED-EXPECTED}}{\text{ROW TOTAL-EXPECTED}}$$

The ASR statistic can be viewed as an approximately standardized normal deviate that can be calculated by:

$$\frac{\text{OBSERVED-EXPECTED}}{\text{SQRT}(E) \times \text{SQRT}[(1-(R/T)) \times (1-(C/T))]}$$

specialization coefficient. For juvenile offending, the strongest level of specialization is for auto offending, followed by status, burglary, violent, property, and "other" offending.

Based on the finding of nonstationarity for juvenile burglary and status offending it is necessary to calculate specialization statistics for each transition for these offenses. Table 11 presents the transition specific statistics for juvenile burglary and status offending. There is significant specialization in juvenile burglary offending for the first three transitions (four arrests) with the greatest likelihood of specialization occurring in the transition from the second to the third arrest. There is no significant specialization for juvenile burglary offending after the fourth arrest.

For status offending there is significant specialization for the first four transitions and again the most likely point of specialization occurs at the second transition. After the second transition there is decreasing specialization until the fifth transition when there is no significant status specialization. The level of specialization in status offending is slightly higher than other crimes. For both burglary and status offenses, specialization was more likely during the early stages of offending.

Escalation statistics can provide further insight on the direction of change for juvenile burglars and status offenders. For example, did they go on to more or less serious types of behaviors? A finding of escalation or de-escalation would indicate that the current offense does depend to some extent on the previous type of offense. The measure of escalation used is adopted from Blumstein et al. (1988).⁵ This escalation measure, calculated for those probabilities below the matrix diagonal, is standardized with respect to the relative prevalence of offenses and will range in value from -1 to +1 with -1 indicating complete de-escalation and +1 complete escalation; 0 indicates complete randomness in the direction of offending. De-escalation is calculated for those probabilities above the diagonal with +1 indicating complete de-escalation, -1 complete escalation.

For the most serious offense category (violence) there is no escalation statistic and for the least serious (probation violation) there is no de-escalation statistic. For all offense categories except violence and probation violation, both escalation and de-escalation trends can be calculated and an

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5. The following formula is used to assess the levels of escalation and de-escalation for each of the offense categories:
OBSERVED PROBABILITIES (summed)-EXPECTED PROBABILITIES (summed)
MAX-EXPECTED PROBABILITY (summed),
where MAX=1-diagonal probability for that offense if observed > expected and MAX=0 if observed ≤ expected.

average measure of overall escalation (overall E) is presented.⁶

An examination of Table 12 finds that for juveniles, the summary statistics (overall E) for many of the crime categories are close to zero, indicating a directional independence or randomness in juvenile crime-switching over time. Although the level of this statistic is not strong in either direction, these results suggest that the trend among juveniles is for offenses to be followed by less serious acts. The exception is auto offenses which are more likely to be followed by more serious acts.

Table 13 presents the transition-specific escalation statistics for burglary offending. Escalation from burglary to a more serious offense is higher at the first two transitions. By the fourth and fifth transition, de-escalation to less serious offenses is the likely pattern. This trend towards de-escalation in burglary offending is probably responsible for the previous nonstationarity finding for burglary. Table 14 presents the transition-specific coefficients for status offending. There is an overall trend towards de-escalation for status offending except at the last transition where there is escalation.

Even though the nature of the Glueck sample is that of high-rate persistent offenders, there are differences in the frequency of offending within the group. Matrices were thus generated for those offenders having 6 or fewer juvenile offenses versus those who had 7 or more juvenile offenses. The less persistent juvenile offenders (75% of the sample) mirrored the earlier findings for the entire group in specialization and escalation. The nature of offending was different for the more persistent juveniles. These boys (25% of the sample) were less likely to specialize in less serious offenses and were much more likely to be escalating in the seriousness of their behavior throughout the juvenile phase. Although this group seems to be a potential target for intervention, by the time we identify chronic offenders (i.e. at least 7 arrests) a major portion of their criminal behavior has already been committed.

Adult Stationarity, Specialization and Escalation

The adult offending process is stationary across time and hence specialization and escalation statistics were calculated for a summary matrix. Table 15 presents the summary matrix for adults which reflects a weighted average of the probability of adult offending across the first ten transitions. Adult offending is characterized by statistically significant specialization levels for all categories except violent

6. The formula for the overall measure of escalation is:
(ESCALATION - DE-ESCALATION)/2.

offending. The level of specialization is highest for alcohol/drug offending followed by "other," burglary, robbery, property, and probation violations.

As illustrated by Table 16 there is a slight trend toward de-escalation in the seriousness of adult offending across time. Relative to the findings for juveniles, the direction in terms of escalation or de-escalation (although not strong in either case) is somewhat more de-escalatory for the adults. The exception for adult offenders is the alcohol offender who was more likely to commit a more rather than less serious crime at the next offense. A closer inspection of the individual matrices indicates that in many cases these more serious crimes were in the "miscellaneous" category (e.g., vagrancy, desertion, and other family offenses).

The subgroup analysis performed on the adults did not yield significant differences in the likelihood of specialization or escalation for high-rate vs. low-rate offenders. As with juvenile offending, more specialization in adult offending was found than could be expected by chance alone but the magnitude was still relatively low.

Overall, then, while there is modest evidence of specialization beyond chance expectations, the absolute levels of juvenile and adult specialization are relatively low. And with few exceptions (e.g., juvenile auto offending and juvenile status offending), there is also no clear evidence of escalation. What seems to be the foremost finding for policy purposes is that juvenile and adult offending are diverse enough to make prediction of the next type of offense somewhat difficult. Given that for all offenders the most likely next offense is a property offense, we are unable to identify with much accuracy which offenders are likely to specialize in more serious offenses and continue escalating into adulthood.

IV. SANCTION EFFECTS: OLS AND EVENT HISTORY ANALYSIS

We conducted detailed analyses of the effects of criminal justice sanctions on criminal careers. In the first set of analyses we used ordinary least squares (OLS) regression to estimate the direct effect of conviction rates and incarceration length on subsequent offending. Although in the Gluecks' research design all delinquent youths were incarcerated, there is considerable variation among the delinquents in the time they served, not only in adolescence but in adulthood as well. For example, Table 17 shows the detailed distribution of sanctions by age group. We coded the actual number of days (not sentence length) each subject spent in a custodial institution as a juvenile and at ages 17-25 and 25-32.

Preliminary analysis revealed an insignificant role of prison length in understanding later criminal behavior. In particular, the effect of juvenile incarceration on the frequency

of offending while free at ages 17-25 was insignificant and virtually zero once relevant variables were controlled. The same pattern emerged when we considered the frequency of offending at ages 25-32 as a function of both juvenile incarceration and incarceration at ages 17-25. In no case did length of incarceration have a deterrent (or criminogenic) effect on later crime (data not shown).

We also constructed individual event histories of criminal offending and sanctions from adolescence until age 32. Using Cox proportional hazards models (see Allison, 1984) and survival analysis, we specified models that estimated the effect of juvenile (< 17) sanctions on the hazard of young-adult (age 17-25) crime and the effect of young-adult sanctions on the hazard of later adult (age 25-32) crime. The sanctions targeted for analysis were length of incarceration, imprisonment rate (ratio of prison sentences to convictions), and conviction rate (ratio of convictions to charges).

The results for property and violent crime show inconsistent or weak effects of juvenile sanctions on adult offending (see Table 18). The results for adult sanctions (Table 19) are hampered by high collinearity between length of incarceration and number of arrests in adulthood. Therefore, the results for adult sanctions are inefficient and less reliable than for juvenile sanctions where there is little redundancy among variables. Note, for example, that in Table 19 adult sanction risk sometimes has a positive effect on the hazard of arrest (e.g., adult incarceration length), and in others the effect is negative or insignificant (e.g., conviction rate). Moreover, the positive effect of adult incarceration on later crime may simply reflect the more active criminal propensity of those with lengthy criminal records. In other words, prior arrest record may be insufficient as a control variable for propensity to crime.

In sum, there is no consistent pattern of a direct effect of juvenile justice sanctions -- whether conviction rate, imprisonment rate, or incarceration length -- on subsequent crime. The results for adult sanctions are ambiguous and too plagued by multicollinearity to inform policy decisions. Our ongoing work with these data is designed to overcome some of the limitations of the current analysis (e.g., through the use of sample selection methods and models allowing the control of persistent unobserved heterogeneity in criminal propensity).

V. ASSESSING THE FEASIBILITY OF A FOLLOW-UP

As proposed in the original grant, we explored the feasibility of following up official records of the Glueck men to the present day. First, we examined criminal-record histories at the state level that are currently housed in the Massachusetts Commissioner of Probation Office. Our discussions indicated that a follow-up of these records is indeed possible. Offender

histories are manually filed by last name, and we have the additional requisite information (e.g., date of birth, last known address, etc.) in order to capture all officially recorded offenses committed in Massachusetts by the Glueck men since the age of 32.

Second, we investigated using FBI national data banks to collect criminal activity for those men who may have committed offenses outside the state of Massachusetts. These discussions were less fruitful, and at this time it is not clear whether or not these records can be made available for purposes of research.

The third source of data we explored were death records at the state level from the Massachusetts Department of Vital Records and Statistics. Our pretest record searches for a subset of cases proved successful in finding subjects from the Gluecks' study who had died and helped us identify additional information (e.g., names of parents) we would need to launch a full search of these records. We also collected information from the national data base of death records and held detailed discussions with researchers familiar with this data base regarding the procedures and problems of securing records of death at the national level.

Overall, based on our assessment of the available data sources, we believe that a follow-up of official criminal records (especially at the state level) and death records for the Glueck men is feasible and a worthwhile endeavor. In particular, such a follow-up would provide heretofore unavailable information on the criminal careers of men in later adulthood (ages 32-60) -- including involuntary termination due to death.

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VI. PRODUCTS

The raw data on the 500 criminal careers in the Gluecks' delinquent group sample -- coded under NIJ support and analyzed in this grant -- have been deposited to Sociometrics and are now available at the Michigan ICPSR archive.

VII. PUBLICATIONS SUPPORTED IN PART BY GRANT

Davis, Kenna. 1992. Patterns of Specialization and Escalation in Crime: A Longitudinal Analysis of Juvenile and Adult Arrest Transitions in the Glueck Data. Ph.D. Dissertation, University of Illinois at Urbana-Champaign.

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Table 1

A. Glueck Sample Sizes by Age of Interview

	Wave 1: Age 14	Wave 2: Age 25	Wave 3: Age 32
Sample Size	500	463	438
Deaths	X	17	8

B. Number of Persons Arrested by Type of Crime and Age

<u>Arrests (persons)</u>	<u>Age 7-17</u>	<u>Age 17-25</u>	<u>Age 25-32</u>
Violent	73	151	76
Property	443	275	124
Robbery	19	61	29
Burglary	329	164	62
Alcohol/Drugs	11	152	126
Public Order	72	224	159

C. Participation by Type of Crime and Age

<u>% Arrested</u>	<u>Age 7-17</u> N = 480	<u>Age 17-25</u> N = 446	<u>Age 25-32</u> N = 423
Total	100%	84%	70%
Violent	15%	34%	18%
Property	92%	62%	29%
Robbery	4%	14%	7%
Burglary	68%	37%	15%
Alcohol/Drugs	2%	34%	30%
Public Order	15%	50%	38%

Table 2

Classification of Crimes

	Chrg1	Chrg2	Chrg3				
VIOLENT CRIMES (361)	305	69	8	PUBLIC ORDER OFFENSES (901)	945	65	15
Assault and Battery/Simple Assault/Threats	130	38	2	Curfew and Loitering Law Violations	14	4	
A & B on Wife	19	4		Disorderly Conduct/Malicious Mischief	77	17	2
A & B with weapon/Aggravated Assault	17	10	1	False Alarms/Affray	3		1
Homicide/Manslaughter	4	3		Drugs	710	12	2
Rape/Assault with intent to rape/Sodomy	19		1	Drunkenness/violation of liquor laws	17	1	
Sex offense (non-rape)/abuse of a female				Gambling	86	5	
child indecent assault	23	4		Vagrancy	38	26	10
Robbery (armed)	48	3	4	Weapons; carrying, possession, etc.			
Robbery (unarmed and nonspecific)	42	3					
Extortion	1			OTHER OFFENSES (1033)	1171	313	39
Kidnapping	2	4		Including Juvenile Status Offenses			
				Runaway	79	49	2
PROPERTY CRIMES (2505)	2366	479	68	Stubborn/Incorrigible/Profanity	81	35	
Burglary/Breaking and Entering/B&E&L				Truancy	46	36	1
in Daytime or Nighttime	951	81	7	Other Juvenile Status Offenses	1		
Possession of Burglary Tools	7	31	6	Conspiracy (not specified)	1	8	3
Forgery/uttering/embezzlement/Fraud				Licensing Violations	14		
/other theft	25	11	1	Military related offenses (e.g., unlawful			
Larceny (Grand and Petit)	742	139	18	use of a military uniform)	13	4	
Larceny from person	22	9		Offenses against family and children (desertion,			
Larceny of auto (including Dyer Act)	135	31	5	nonsupport, illegitimacy, adultery).	122	10	
Unlawful use of auto/Use of auto w/o				Suspicion - Violent crime investigations	56		
permission/Joyriding	275	97	17	Suspicion - Theft crime investigation	138		
Receiving Stolen Goods	30	13	1	Suspicion - Other crime investigation	52	1	
Stealing Rides/Sneaking Admission				Contempt of Court	2		
/Theft of Services	28	1	1	Escape (custody)/Jailbreak/Fugitive	28	8	2
Trespassing	48	10	1	Violation of Probation/surrender	475	144	23
Arson	14	3		Contributing to the delinquency of a minor	4		
Property Damage/Vandalism	89	53	11	Conspiracy to commit a violent crime	4	2	1
				Conspiracy to commit a theft crime	6	4	3
				Accessory Before or After the Fact	3	2	
AUTO RELATED OFFENSES (321)	334	136	60	Perjury	2		
Driving While Intoxicated	31	4	1	Fornication	6		
Leaving Scene of Accident/Hit and Run	9	15	8	Allowing an Improper person			
Moving Violations/Speeding, not slowing down,				to operate an auto	2		
running red lights, reckless driving,				Lewdness/Exposure/Peeping Tom	23	4	1
operating to endanger.	190	45	20	Violation of City Ordinance	10	3	2
Technical Violations/no license, no				Resisting Arrest/Failure to cooperate			
registration, unregistered plates	104	72	31	with a Police officer	2	3	1
				Bribery	1		
				(missing)			
						0	4059
						4931	

* Numbers (in parentheses) to the right of each crime-type represent the number of cases where this was the most serious crime-type across all three charges.

Table 3

Average Raw Charge Frequencies and Annualized Rates of Charges While Free in the Community, by Age and Type of Crime

<u>Raw Frequencies</u>	<u>AGE:</u>		
	<u>≤ 17</u>	<u>17-25</u>	<u>25-32</u>
Violent	.215	.538	.296
Property	4.187	2.045	.712
Robbery	.042	.188	.083
Burglary	1.662	.688	.267
Alcohol/Drugs	.027	.937	.872
Public Order	.198	1.307	1.087
Total	6.485	5.821	3.444

<u>Per Year Free:</u>	<u>≤ 17</u>	<u>17-25</u>	<u>25-32</u>
Violent	.014	.159	.167
Property	.275	.706	.289
Robbery	.003	.069	.082
Burglary	.109	.291	.118
Alcohol/Drugs	.002	.165	.160
Public Order	.013	.313	.250
Total	.425	1.611	1.026

Table 4

Descriptive Data on Age of Onset by Type of Conduct

A. Interview-Reported Persistent Misbehavior

Age	# No Misbehavior	# First Misbehavior	% Hazard rate	% Onset rate	Cumulative prevalence
2	480	1	.21	.21	.21
3	479	3	.63	.62	.83
4	476	12	2.52	2.50	3.33
5	464	49	10.56	10.21	13.54
6	415	66	15.90	13.75	27.29
7	349	100	28.65	20.83	48.12
8	249	88	35.34	18.33	66.45
9	161	55	34.16	11.45	77.90
10	106	44	41.51	9.17	87.07
11	62	27	43.55	5.62	92.69
12	35	15	42.86	3.12	95.81
13	20	10	50.00	2.08	97.89
14	10	7	70.00	1.45	99.34
15	3	2	66.60	.42	99.76
16	1	1	100.00	.21	100.00

Mean = 7.89, S.D. = 2.27

B. Official Arrest

Age	# No arrest	# First arrest	% Hazard rate	% Onset rate	Cumulative prevalence
7	480	2	.42	.42	.42
8	478	20	4.18	4.17	4.59
9	458	39	8.52	8.12	12.71
10	419	69	16.47	14.38	27.09
11	350	74	21.14	15.42	42.51
12	276	73	26.45	15.21	57.72
13	203	76	37.44	15.83	73.55
14	127	65	51.18	13.54	87.09
15	62	52	83.87	10.83	97.92
16	10	10	100.00	2.08	100.00

Mean = 11.96, S.D. = 2.06

Table 5

Mean Age of Onset for Active Offenders*

	Mean Age of Onset:	
	<u>Persistent Misbehavior</u>	<u>Arrest</u>
Total	7.89	12.06
Actives	7.79	11.96
Active Felons	7.56	11.96
Active Burglars	7.45	11.68
Active Robbers	7.85	12.08

* Active is defined as an arrest at all three waves

Table 6

Criminal Career Parameters by Age of Onset

Age of onset	N	Career Arrests	Average yearly frequency (free)	Career length (days)
ARREST:				
7-9	60	15.0	.76	6501
10	69	12.0	.60	5890
11	73	12.0	.61	5525
12	73	14.8	.70	5327
13	76	12.0	.59	4883
14	65	12.4	.60	3995
15-16	62	10.6	.48	3967
MISBEHAVIOR:				
2-5	64	13.4	.65	5190
6	66	14.6	.71	5634
7	99	13.6	.67	5628
8	88	12.4	.63	5323
9	55	10.5	.52	4630
10	44	12.6	.63	4779
11-16	62	10.7	.47	4209

Table 7

Pearson Correlations Between Age of Onset and Later Outcomes

<u>Outcomes</u>	Age of Onset:	
	<u>Arrest</u>	<u>Misbehavior</u>
Total career arrests	-.11*	-.13*
Average annual frequency ^a	-.13*	-.14*
< 17 average annual frequency	-.35*	-.16*
17-25 average annual frequency	-.01	-.04
25-32 average annual frequency	-.02	-.04
Career length total	-.39*	-.20*
Career length free	-.32*	-.12*

* p < .05

^aFrequency rates are annualized rates of contacts per day free

Table 8. Classification of Offending for Juveniles

VIOLENT CRIMES (VIOL)

Homicide
Rape
Assault and Battery (simple)
Assault and Battery (spousal)
Assault and Battery (weapon)
Non-rape sex offenses
Armed Robbery
Unarmed Robbery
Kidnapping

MISCELLANEOUS (OTHR)

Curfew and Loitering
Disorderly Conduct
Gambling
Vagrancy
Weapons Violations
Moving Violations
Military Violations
Desertion/Nonsupport
Bribery
Adultery/Illegitimacy
Contributing to Minor
Perjury
Fornication
Lewdness/Exposure
City Ordinance Violation
Resisting Arrest
Allowing Unlawful Use
of Auto

BURGLARY (BURG)

Burglary/Breaking and Entering
Possession of Burglary Tools

PROPERTY CRIMES (PROP)

Forgery/Fraud/Embezzlement
Larceny (grand, petit, personal)
Receiving Stolen Goods
Arson
Theft of Services
Property Damage/Vandalism

STATUS (STAT)

Runaway
Stubborn/Incorrigible
Truancy
Other Status
Drunkenness/Liquor Laws

AUTO

Motor Vehicle Theft
Unlawful Use of Auto

VIOLATION OF PROBATION
(PROB)

Table 9. Classification of Offending For Adults

VIOLENT CRIMES (VIOL)

Homicide
Rape
Assault and Battery (simple)
Assault and Battery (spousal)
Assault and Battery (weapon)
Non-rape sex offenses
Kidnapping

ROBBERY (ROBB)

Armed and Unarmed

BURGLARY (BURG)

Burglary/Breaking and Entering
Possession of Burglary Tools

PROPERTY CRIMES (PROP)

Forgery/Fraud/Embezzlement
Larceny (grand, petit, personal)
Motor Vehicle Theft
Unlawful Use of Auto
Property Damage/Vandalism
Receiving Stolen Goods
Arson
Theft of Services

MISCELLANEOUS (OTHR)

Curfew and Loitering
Disorderly Conduct
Gambling
Vagrancy
Weapons Violations
Moving Violations
Military Violations
Desertion/Nonsupport
Adultery/Illegitimacy
Contributing to Minor
Perjury
Fornication
Allowing Unlawful Use
of Auto
Lewdness/Exposure
City Ordinance Violation
Resisting Arrest
Bribery

ALCOHOL/DRUGS (ALCO)

Drugs
Drunkenness
Violation of Liquor Laws
Driving While Intoxicated

VIOLATION OF PROBATION
(PROB)

Table 10. JUVENILE SUMMARY MATRIX: TRANSITIONS 1-10

FREQ PROB	I VIOR I	I BURG I	I PROP I	I AUTO I	I OTHR I	I STAT I	I PROB I	IRow ITotal
VIOL	I 16 I .242	I 21 I .318	I 15 I .227	I 5 I .076	I 3 I .045	I 4 I .061	I 2 I .030	I 66 I .036
BURG	I 12 I .020	I 287 I .475	I 152 I .252	I 52 I .086	I 19 I .031	I 49 I .081	I 33 I .055	I 604 I .326
PROP	I 25 I .038	I 177 I .272	I 294 I .452	I 43 I .066	I 14 I .022	I 66 I .102	I 31 I .048	I 650 I .351
AUTO	I 6 I .043	I 28 I .200	I 24 I .171	I 57 I .407	I 3 I .021	I 4 I .029	I 18 I .129	I 140 I .076
OTHR	I 5 I .085	I 11 I .186	I 17 I .288	I 7 I .119	I 12 I .203	I 5 I .085	I 2 I .034	I 59 I .032
STAT	I 8 I .030	I 60 I .225	I 58 I .217	I 15 I .056	I 12 I .045	I 109 I .408	I 5 I .019	I 267 I .144
PROB	I 1 I .015	I 24 I .358	I 26 I .388	I 6 I .090	I 4 I .060	I 2 I .030	I 4 I .060	I 67 I .036
Column Total	73 .039	608 .328	586 .316	185 .100	67 .036	239 .129	95 .051	1853 1.00

	EXPECTED VALUE	SPECIALIZATION COEFFICIENT
VIOLENT	2.60	.211*
BURGLARY	198.18	.219*
PROPERTY	205.56	.199*
AUTO	13.98	.341*
OTHER	2.13	.174*
STATUS	34.44	.321*
PROBATION	3.43	.009

* p=.01

TABLE 11 Individual Transition Specialization Coefficients For Juvenile Burglary and Status Offending

*p=.01	MATRIX 1	MATRIX 2	MATRIX 3	MATRIX 4	MATRIX 5
BURGLARY	.141*	.326*	.210*	.128	.081
STATUS	.120*	.327*	.290*	.201*	.087

Table 12 Escalation and De-escalation for Juveniles

	Escalation	De-escalation	Overall E
VIOLENT	-----	.211	-----
BURGLARY	.058	.184	-.063
PROPERTY	.155	.247	-.046
AUTO	.394	.171	.112
OTHER	.134	.339	-.103
STATUS	.300	.627	-.164
PROBATION	.007	-----	-----

Table 13 Transition-Specific Escalation and De-Escalation Statistics for Juvenile Burglary Offending

TRANSITION	ESCALATION	DE-ESCALATION	OVERALL E
MATRIX 1	.171	.140	.016
MATRIX 2	.692	.313	.190
MATRIX 3	.216	.209	.004
MATRIX 4	-1	.083	-.541
MATRIX 5	-1	.014	-.507

Table 14 Transition-Specific Escalation and De-Escalation Statistics for Juvenile Status Offending

TRANSITION	ESCALATION	DE-ESCALATION	OVERALL E
Matrix 1	.434	.628	.097
Matrix 2	.308	.739	-.216
Matrix 3	.258	.692	-.217
Matrix 4	.216	.039	-.089
Matrix 5	.048	-1	.524

Table 15. ADULT SUMMARY TRANSITION MATRIX: TRANSITIONS 1-10

FREQ PROB	I I	VIOL I	I I	ROBB I	I I	BURG I	I I	PROP I	I I	OTHR I	I I	ALCO I	I I	PROB I	I I	Row ITotal
VIOL	I	16	I	11	I	11	I	19	I	47	I	30	I	6	I	140
	I	.114	I	.079	I	.079	I	.136	I	.336	I	.214	I	.043	I	.073
ROBB	I	10	I	12	I	10	I	7	I	11	I	10	I	4	I	64
	I	.156	I	.188	I	.156	I	.109	I	.172	I	.156	I	.063	I	.033
BURG	I	27	I	8	I	95	I	57	I	40	I	34	I	17	I	278
	I	.097	I	.029	I	.342	I	.205	I	.144	I	.122	I	.061	I	.145
PROP	I	25	I	19	I	62	I	128	I	81	I	67	I	32	I	414
	I	.060	I	.046	I	.150	I	.309	I	.196	I	.162	I	.077	I	.216
OTHR	I	39	I	6	I	39	I	66	I	226	I	70	I	36	I	482
	I	.081	I	.012	I	.081	I	.137	I	.469	I	.145	I	.075	I	.252
ALCO	I	25	I	10	I	26	I	48	I	76	I	243	I	8	I	436
	I	.057	I	.023	I	.060	I	.110	I	.174	I	.557	I	.018	I	.228
PROB	I	8	I	2	I	13	I	21	I	30	I	13	I	12	I	99
	I	.081	I	.020	I	.131	I	.212	I	.303	I	.131	I	.121	I	.052
Column		150		68		256		346		511		467		115		1913
Total		.078		.036		.134		.181		.267		.244		.060		1.00

	EXPECTED VALUE	SPECIALIZATION COEFFICIENT
VIOLENT	10.98	.039
ROBBERY	2.27	.158*
BURGLARY	37.20	.240*
PROPERTY	74.88	.157*
OTHER	128.75	.275*
ALCOHOL	106.44	.414*
PROBATION	5.95	.065*

p=.01

Table 16 Escalation for Adults

	Escalation	De-escalation	Overall E
VIOLENT	-----	.038	-----
ROBBERY	.106	.260	-.050
BURGLARY	.022	.293	-.136
PROPERTY	.018	.238	-.110
OTHER	.275	.276	-.001
ALCOHOL	.391	.700	.155
PROBATION	.066	-----	-----

Table 17

Descriptive Data on Official Sanctions, by Age: Delinquent Group

Sanctions	Mean	S.D.	Minimum	Maximum
Age < 17:				
Days incarcerated	553	386	0	2638
Days on parole	526	467	0	2374
Days on probation	299	288	0	1524
Conviction rate, actives (N = 480)	95.1	10.5	17	100
Incarceration rate, actives (N = 480)	33.3	20.1	0	100
Age 17-25:				
Days incarcerated	648	817	0	2910
Days on parole	553	439	0	2025
Days on probation	201	334	0	2327
Conviction rate, actives (N = 375)	76.8	24.7	0	100
Incarceration rate, actives (N = 375)	28.8	29.6	0	100
Age 25-32:				
Days incarcerated	345	640	0	2557
Days on parole	79	209	0	1338
Days on probation	169	350	0	1986
Conviction rate, actives (N = 293)	72.6	33.2	0	100
Incarceration rate, actives (N = 293)	19.8	29.5	0	100

Table 18

Cox Proportional Hazards Models of First Arrest in Young Adulthood (17-25) by Official Juvenile Sanctions (< 17), Control Variables, and Type of Crime

YOUNG ADULT, AGES 17-25:

Independent variables	Property	Violent
	(Coeff./S.E.)	(Coeff./S.E.)

Juvenile Sanctions (age <17):		
Days incarcerated	1.52	2.53*
Incarceration rate	-.13	-.32
Conviction rate	.34	-.03
Control Variables:		
Total contacts (< 17)	2.04*	2.14*
Unofficial delinquency	1.44	-.67
Property frequency (< 17)	.98	NI
Violent frequency (< 17)	NI	1.50
Exposure	-.12	2.05*
Model Chi-square (7 d.f.)	59.28	38.63
Percent Censored	39.96	68.20

 NI = Not included in model specification

* p < .05

Table 19

Cox Proportional Hazards Models of First Arrest in Later Adulthood (25-32) by Official Juvenile (< 17) and Young Adult (17-25) Sanctions, Control Variables, and Type of Crime

LATER ADULT, AGES 25-32:

Independent variables	Property	Violent
	(Coeff./S.E.)	(Coeff./S.E.)
Juvenile Sanctions (age <17):		
Days incarcerated	-.11	-1.03
Incarceration rate	-.09	.17
Conviction rate	-.71	.61
Young Adult Sanctions (17-25):		
Days incarcerated	2.09*	3.01*
Incarceration rate	3.08*	.77
Conviction rate	-1.85	-2.22*
Control Variables:		
Total contacts (< 17)	.58	3.47*
Unofficial delinquency	-.79	.61
Total contacts (17-25)	7.04*	4.06*
Property frequency (17-25)	1.67	NI
Violent frequency (17-25)	NI	-.31
Exposure	-1.14	.31
Model Chi-square (11 d.f.)	132.11	71.04
Percent Censored	68.10	80.43

NI = Not included in model specification

* p < .05