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PREDICTING SERIOUSNESS OF OFFICIAL POLICE CONTACT
CAREERS: AN EXPLORATORY ANALYSIS

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Abstract

The analysis presented describes an attempt to develop an exploratory, longitudinal model which is predictive of the seriousness of an official criminal career. In particular, the goal was to determine the antecedents of the seriousness of an adult criminal using information obtained from interviews with members of two birth cohorts. The results suggest that adult seriousness is primarily a consequence of the 1) seriousness of career at earlier stages in life, and 2) age at first contact with police. The crucial variable is age at first contact and it is suggested that future research should be directed toward the antecedents of this variable.

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INTRODUCTION

The analysis presented here represents an attempt to develop a preliminary, exploratory multivariate model which is predictive of the seriousness of an official criminal career. The orientation is atheoretical at this point and involves the use of multivariate data-reduction techniques to produce a parsimonious model which maximizes explained variance. The development of this model is based on the conjunction of two data sets: 1) information derived from the 1976 interviews in Racine with a sample of members of the 1942 (N=333) and 1949 (N=556) cohorts, and 2) the official police contact records for these individuals. The primary focus of this analysis is on an attempt to predict seriousness of criminal careers as they appear in the police records on the basis of information derived from the 1976 interview schedule.

Each interviewed cohort member's official career has been divided into three time segments: 1) juvenile (ages 6-17), 2) intermediate (ages 18-20), and 3) adult (age 21 and older). The practical justification for these divisions rests on the legal distinction between juvenile and adult crime. Typically, in most jurisdictions, illegal acts committed by persons younger

than 18 are viewed as delinquencies rather than as crimes *per se* (Cavan and Ferdinand, 1975:25-27). A separate juvenile justice system has developed to deal with delinquency on the assumption that acts committed during this period of life should be treated differently from those committed later in life when individuals are assumed to be more responsible for their behavior. Thus, the seriousness of a juvenile career may be treated in the abstract as something distinct from an adult career. However, we have interjected an intermediate career segment between the juvenile and adult periods as a means of representing the transition from adolescence to adulthood. This is due to the inconsistencies in existing age norms (see Bengston and Laufer, 1974a, b; Riley, 1976). Although one may be an "adult" from the standpoint of criminal law at age 18, there are many other spheres of life in which adulthood does not occur until age 21 (e.g., entering into a legal contract). Thus, between ages 18 and 21, individuals may be treated as adults under some conditions but as non-adults for others. The process of becoming an adult, then, begins in earnest when individuals are 18 but is not fully complete until age 21, when all legal entitlements are obtained.

The objective here will be to develop a series of regression models which are predictive of juvenile, intermediate, and adult career seriousness scores in each cohort and further, to produce a single longitudinal model which describes the juvenile through intermediate through adult sequence as a whole. Moreover, interest lies in determining whether there is a similarity in models across the two cohorts. That is, does a similar predictive model hold across cohorts or does each cohort require a unique set of predictors? Again, the direction of the analysis is admittedly exploratory. In part, this is due to the novelty of longitudinal analysis.

There does not presently exist a research history of this kind which would allow the development of testable hypotheses which include a temporal dimension. It is hoped that the results presented here will provide a basis for such work in the future.

METHODOLOGY

The Variables

The Dependent Variables

The dependent variables in this study are the additive seriousness scores for each of the age periods described above. For present purposes, police contacts have been classified into one of six categories, listed here in descending order of seriousness: felonies involving persons, felonies against property, major misdemeanors, misdemeanors, juvenile status offenses, and contacts for suspicion or investigation. Table 1 summarizes each of these categories, its weight, and the specific offenses included in each.

The practical justification for using this scoring system rests on a legal distinction between felonies and misdemeanors. Criminal law specifies that illegal acts be treated as relatively serious (felonies) or as non-serious (misdemeanors). Among felonies, those against persons are the most serious of all violations while those against property are less serious (although more serious than misdemeanors). The scoring system here assigns felonies involving persons the highest (i.e., most serious) score (6) and felonies against property the second highest score (5). Certain acts, although normally considered felonious, may be dealt with as

TABLE 1. SERIOUSNESS OF POLICE CONTACTS: ORDINAL RANKING OF 6 MAJOR CATEGORIES AND THE OFFENSES INCLUDED IN EACH*

Score

- 6 Felony Involving Persons: The following offenses are given a score of 6 when treated as felonies by the police.
- | | |
|-----------------|----------|
| Robbery | Homicide |
| Assault | Escapee |
| Sex Offenses | Suicide |
| Narcotics/Drugs | |
- 5 Felony Against Property: The following offenses are given a score of 5 when treated as felonies by the police.
- | | |
|------------|------------------------------|
| Burglary | Forgery |
| Theft | Fraud |
| Auto Theft | Violent Property Destruction |
- 4 Major Misdemeanor: The following offenses are given a score of 4 when treated as misdemeanors by the police.
- | | |
|-----------------|------------------------------|
| Robbery | Assault |
| Escapee | Fraud |
| Theft | Violent Property Destruction |
| Narcotics/Drugs | Burglary |
| Weapons | Forgery |
- 3 Misdemeanor: The following offenses are given a score of 3 when treated as misdemeanors by the police.
- | | |
|--------------------|---------------------------|
| Obscene Behavior | Moving Traffic Violations |
| Disorderly Conduct | Other Traffic Offenses |
| Vagrancy | Gambling |
| Liquor Violations | Family Problems |
| Sex Offenses | Other |
- 2 Juvenile Status: The following offenses are given a score of 2 when the contactee is under 18 years of age.
- | | |
|--------------------|----------------------|
| Vagrancy | Incorrigible/Runaway |
| Disorderly Conduct | Truancy |
- 1 Contact for Suspicion, Investigation, Information: The category is given a score of 1 when the complaint report indicates a contact for any of these reasons.

*The specific offenses listed here are similar to those used by Elliott and Voss (1974:82) and Wolfgang, *et al.*, (1972:68-69).

misdemeanors under specific circumstances at the discretion of law enforcement officials. For example, burglary is treated as a felony when a house is entered but as a misdemeanor when it involves a locked vehicle. In order to reflect this dual status, these offenses will be termed major misdemeanors and will receive a score of four (4). Other acts are invariably regarded as misdemeanors by the law. For example, vagrancy and disorderly conduct are never classified as felonies. Misdemeanors are given a score of three (3). With the advent of the juvenile justice system, age became a mitigating condition under the law. An offense committed by a juvenile is treated differently (usually in the direction of lenience) than if it had been committed by an adult. Additionally, a new set of offenses developed which could only be committed by the young, e.g., truancy, incorrigibility, runaway, ungovernability, the so-called juvenile status offenses (Katkin, *et al.*, 1976:17). However, the catch-all vagrancy and disorderly statutes are also frequently invoked to deal with youthful misbehavior. The juvenile status offenses and vagrancy or disorderly conduct when committed by those under age 18 will be grouped together and will be scored two (2). The final category of offenses consists of instances when individuals were stopped on the street for suspicion, investigation, or information at the discretion of the police officer. No criminal allegations need necessarily have been involved. However, a stop for any of the above reasons usually carries an implication of at least potential wrongdoing and becomes part of an individual's contact record. These relatively minor incidents receive a score of one (1) in the scoring system.

An individual's seriousness score for each age period was produced by multiplying the frequency of contact within each seriousness category by its associated weight and summing across categories, i.e.,

$$\begin{array}{l} \text{Seriousness} \\ \text{Score} \end{array} = \Sigma fX_1 + fX_2 + \dots fX_6$$

where

f = frequency of contact for each seriousness category

X_i = seriousness weight associated with each contact category.

The seriousness scores for each age period became a dependent variable in the analysis.

The Independent Variables

The independent variables used in the analysis were derived from the interviews with 333 individuals from the 1942 cohort and 556 individuals in the 1949 cohort. A previous progress report (Shannon 1978:38-39) suggests that those individuals interviewed are fairly representative of their respective cohorts.

Variable Selection. Not all variables from the interview schedule are included in the present analysis. Some variables were eliminated because they did not apply to all interviewees (e.g., questions asked only of those whose mothers worked outside of the home). Other variables were eliminated after an examination of the zero-order correlation matrices indicated that they were uncorrelated with the dependent variables. The retained variables were re-examined to determine the degree of inter-correlation. If two (or more) intercorrelated variables measured similar things, the one with the lowest correlation with the dependent variable was eliminated.

Because the dependent variables reflect different stages of the life cycle, it was necessary to select independent variables appropriate for each of these stages. That is, variables reflecting events or conditions occurring during the respondent's juvenile period are needed to predict juvenile seriousness scores. These same variables may also be used to predict seriousness scores for the intermediate and adult periods since they are part of individuals' biographies and may continue to exert some influence in later life. Thus, the predictors of adult seriousness scores would include not only variables reflecting conditions and events during this period but also variables from preceding age periods.

These procedures resulted in the selection of 26 potentially useful variables. Table 2 presents each variable and the manner in which it was measured. These variables, in turn, were subjected to three multiple regression variable selection routines (i.e., stepwise forward selection [SF], backward elimination [BE], and maximum R^2 improvement [MRI]) associated with the Stepwise Procedure in Statistical Analysis System (SAS) computer package (Barr, *et al.*, 1976:251-256).¹ These routines do not necessarily produce the same final results although in most instances the results will be similar. The basic strategy employed here was to compare the outcomes of the SF and BE routines as a reliability check. To the extent that two different approaches produce the same final model, the credibility of that model is enhanced. The MRI routine was to be used as an arbiter if there was disagreement between the SF and BE approaches. However, this turned out to be an unnecessary step since, in all cases, SF and BE produced identical final models.

TABLE 2. INDEPENDENT VARIABLES

1. Group Ties*

- 1 = Independent
- 2 = Multiple Group Oriented
- 3 = Single Group Oriented (Other than Family)
- 4 = Family Oriented

*Cohort members were measured on this variable for 4 age periods: 6-13, 14-17, 18-20, 21 and older. Each constitutes a separate variable.

2. Employment Involvement During High School

- 1 = No Employment
 - 2 = Summer Only
 - 3 = School Year Only
 - 4 = Both School Year and Summer
-

3. Attitude Toward School

- 0 = Negative
 - 1 = Slightly Negative
 - 2 = Slightly Positive
 - 3 = Positive
-

4. Extent of Friends' Trouble with the Law: Juvenile Period
(Geometric Scale)

- 1 = Low Friends' Trouble
 - ⋮
 - 31 = High Friends' Trouble
-

5. Perceived Neighborhood Police Patrol Activity: Juvenile Period

- 1 = None
 - 2 = Light
 - 3 = Moderate
 - 4 = Heavy
-

6. Attitude Toward Police: Juvenile Period

- 1 = Positive
 - 2 = Indifferent
 - 3 = Negative
-

7. Personal Change: Juvenile Period

- 1 = Liked Myself as I Was
 - 2 = Wanted to be a Different Kind of Person
-

8. Positive Influences from Significant Others: Juvenile Period

- 0 = No Positive Influence
 - ⋮
 - 5 = All Positive Influences
-

9. Negative Influences from Significant Others: Juvenile Period

0 = No Negative Influence

:

5 = All Negative Influences

10. Household Head Economic Involvement: Juvenile Period

1 = Mostly Unemployed

2 = Irregularly Employed

3 = Regularly Employed

11. Household Head Occupational Status: Juvenile Period

1 = Unemployed

2 = Agricultural Laborer

3 = Industrial Laborer

4 = Private Household Worker

5 = Maintenance, Service

6 = Operatives

7 = Craftsman, Foreman

8 = Clerical, Sales

9 = Professional, Managerial

12. Family Intactness: Juvenile Period

1 = Lived With Neither Parent

2 = Lived With One Parent

3 = Lived With Both Parents

13. Children in Family of Orientation: Juvenile Period

1 = Only Child

:

8 = 8 or More Children

14. Educational Attainment

1 = Less than 10 Years

2 = 10 to 12 Years

3 = High School Graduate

4 = College

15. Age at First Full-Time Occupation

1 = 13 years

:

16 = 28 Years (1949) } *
[22 = 34 years (1942)] }

*Code 22/16 indicates that cohort member had never had a full-time occupation up to the time of interview.

16. Status of First Full-Time Occupation*

1 = Unemployed

:

9 = Professional, Managerial

*Coded same as Household Head Occupational Status

17. Age at Marriage

1 = 16 years

⋮

14 = 29 years (1949) } *
[20 = 35 years (1942)] }

*Code 20/14 indicates cohort members had never married at time of interview.

18. Amount of Time Worked Since Education Completed

1 = Little of the Time

2 = Most of the Time

3 = All of the Time

19. Friends' Trouble with the Law: Adult Period (Geometric Scale)

0 = Low Friends' Trouble

⋮

31 = High Friends' Trouble

20. Status of Present Occupation*

1 = Unemployed

⋮

9 = Professional, Managerial

*Coded same as Household Head Occupational Status.

21. Present Income

1 = Low Income (<\$5000)

⋮

37 = High Income (\$37,000 - 37,900)

22. Status of Residential Area: Juvenile Period

1 = Low Status

⋮

6 = High Status

23. Self-Report Delinquencies: Juvenile Period

1 = Didn't Commit Delinquencies

2 = Committed Delinquencies

24. Age at First Police Contact

1 = 6 years

⋮

22 = 27 years (1949) } *
[27 = 32 years (1942)] }

*Code 22/27 indicates that cohort member never had a recorded police contact.

25. Automobile Use Scale: Juvenile Period

0 = Low Use

⋮

15 = High Use

26. Years Before Leaving Home*

0 = 14 years

⋮

14 = 28 years (1949) } *

[18 = 32 years (1942)] }

*Code 14/18 indicates cohort member was still living with parents or family at time of interview.

Results

This section describes the results of the data reduction procedure using the SAS variable selection routines described above. Before presenting the results, two general points should be made regarding the findings. The first is that within cohorts, there is a difference in the predictive models over age periods. That is, the model that best predicts juvenile seriousness is different from the one predicting intermediate or adult seriousness scores. This is not unexpected since it is conceivable that conditions and events that may be influential at one period in life are not as important later in life. The second point is that the predictive models vary across cohorts for a given dependent variable, i.e., the predictors of adult seriousness scores in the 1942 cohort are not the same as those for the same variable in the 1949 cohort. In the case of juvenile seriousness scores, these cross-cohort differences tend to be slight while they are more radical in the cases of intermediate and adult seriousness scores.

Predicting Juvenile Seriousness Scores

Table 3 presents a cross-cohort comparison of the selected predictors when juvenile seriousness score is the dependent variable. This table (as well as similar ones to follow) includes only standardized regression coefficients (β) and R^2 values for the final model in each cohort.² It is to be noted that the best predictors of juvenile seriousness are nearly identical in both the 1942 and 1949 cohorts: age at first police contact, extent of friends' trouble with the law, and household head's economic involvement. One additional variable, attitude toward police, acts as a predictor in the 1949, but not the 1942 cohort. The signs of the coefficients indicate that a high seriousness score is associated with

TABLE 3. SELECTED PREDICTORS OF JUVENILE SERIOUSNESS SCORES, BY COHORT

Variables	β^*	
	1942	1949
Age at First Police Contact	-.690	-.421
Friends' Trouble with the Law	.143	.283
Household Head's Economic Involvement	.115	-.157
Attitude Toward Police	---	.102
R^2	.566	.438

*The unstandardized coefficients (b) are found in Appendix 1 (see footnote 2).

1) a lower age at first contact, 2) having friends who have had more serious trouble with the law, and 3) in the 1949 cohort, having a negative attitude toward the police. The signs associated with regularity of household head's employment reverse across cohorts. In the 1942 cohort, the positive sign indicates that higher seriousness is associated with greater regularity of employment while in the 1949 cohort, a negative sign indicates an association with less regular employment. There is no immediately apparent explanation to account for this discrepancy.

The three variables comprising the model in the 1942 cohort account for nearly 57% ($R^2=.566$) of the variance in juvenile seriousness scores while the four variables in the 1949 model account for 44% ($R^2=.438$) of the variance. The relative size of the standardized coefficients within cohorts indicates that age at first police contact accounts for most of the variability in each model in each cohort. In the 1942 cohort, it is about 4.8 times more important than friends' trouble with the law and 6 times more important than regularity of household head's work. In the 1949 cohort, age

Given the relative importance of age at first police contact as a predictor, an appropriate subsidiary analysis would involve an attempt to determine the antecedents of this variable, i.e., what variables best predict age at first police contact? A number of variables previously described were subjected to the SAS selection procedures with age at first police contact as the dependent variable.³ The results of this analysis are presented in Table 5.

TABLE 5. PREDICTORS OF AGE AT FIRST POLICE CONTACT

Variables	β^*	
	1942	1949
Sex	-.296	-.180
Juvenile Friends' Trouble with the Law	-.230	-.163
Age at First Full Time Occupation	.128	---
Perceived Police Patrol Activity	-.184	---
Automobile Use Scale	---	-.148
Status of Residential Area	---	.141
Attitude Toward Police	---	-.123
R^2	.265	.214

*The unstandardized regression coefficients are found in Appendix 2 (see footnote 2).

Only two variables appear in common as predictors across cohorts: sex and juvenile friends' trouble with the law. Being male and having friends' in more serious trouble with the police are related to lower age at first police contact. In the 1942 cohort, it was also found that lower age at first police contact was associated with lower age at first full time employment and perceived heavy police patrol activity in one's neighborhood. In the 1949 cohort, in addition to the two common variables, three others operated as predictors

of age at first contact. Here, higher levels of automobile use, lower status of social area of residence, and more negative attitude toward the police were associated with lower age at first police contact.

In general, the variables selected by SAS as predictors of age at first police contact are not good ones in the sense that they account for only 26% and 21% of the variance, respectively, in the 1942 and 1949 cohorts. This is reflected to some extent in the low absolute size of the standardized coefficients. Further, within cohorts, none of the coefficients is substantially larger than the others, i.e., all are equally "poor" predictors. This suggests that the information available from the interview schedule is not tapping the most important determinants of age at first contact and that variables other than those considered are presumably more important in their influence. However, what these variables may be is as yet unknown, although the field of potential predictors is narrowed since it is now known that the variables used here are not the most appropriate ones.

The analysis thus far suggests that the following preliminary model (Figure 1) represents the basic sequence in predicting juvenile seriousness scores. Juvenile seriousness scores are most strongly related to age at first police contact: the lower the age at first contact, the higher the

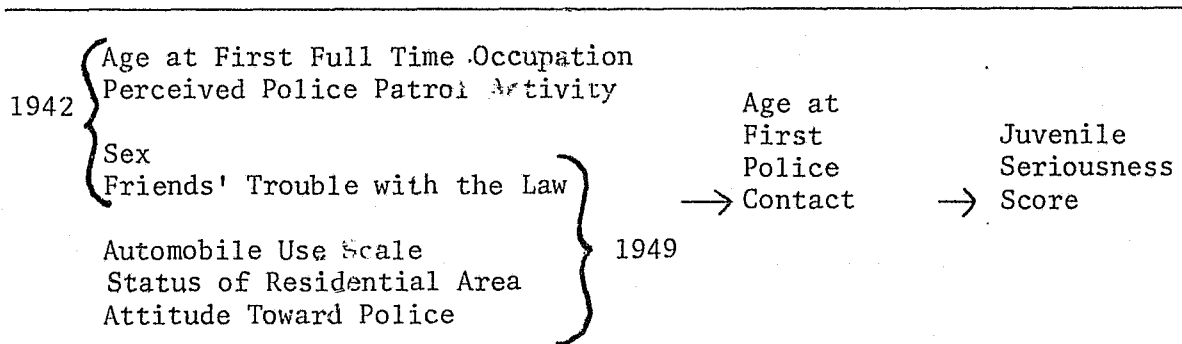


Figure 1

seriousness score. In turn, the antecedents of age at first contact seem to vary to some extent by cohort. Although sex and degree of friends' trouble with the law are common to both cohorts, other variables unique to each cohort also appear to exert an influence. Neither model, however, accounts for much of the variability in age at first contact, indicating a need for further research in this area.

Predicting Intermediate Seriousness Scores

Table 6 presents the results of the stepwise selection for the prediction of intermediate (ages 18-20) seriousness scores. A core of three variables appear to be common across both cohorts. Specifically, a high intermediate seriousness score is related to 1) a high juvenile seriousness score, 2) a negative attitude toward police, and 3) in the 1942 cohort, higher age at marriage but in the 1949 cohort, a lower age at marriage. These three variables are the only predictors selected in the 1942 cohort and account for 34% ($R^2=.343$) of the variance in the dependent

TABLE 6. SELECTED PREDICTORS OF INTERMEDIATE SERIOUSNESS SCORES

Variables	β^*	
	1942	1949
Juvenile Seriousness Score	.519	.475
Attitude Toward Police	.153	.086
Age at Marriage	.098	-.106
Years Before Leaving Home	---	.143
Age at First Full Time Occupation	---	-.101
Status of Residential Area	---	-.103
Perceived Police Patrol Activity	---	.075
	R^2	
	.343	.333

*The unstandardized coefficients (b) are found in Appendix 1 (see footnote 2).

variable. However, in the 1949 cohort, four additional variables are included as predictors of high seriousness scores: 1) greater length of time lived at home, 2) lower age at first full-time job, 3) lower status of social area of residence, and 4) perception that one's neighborhood was heavily patrolled by police. The seven variables in the 1949 cohort account for 33% ($R^2=.333$) of the variance in intermediate seriousness scores.

It should be noted that the selected predictors of intermediate seriousness scores are less effective than those for juvenile seriousness scores in terms of explained variance. In part, this may be due to the relative shortness of the intermediate period which results in less variability of the seriousness scores compared to greater variability during the longer juvenile period. For example, the range of juvenile and intermediate scores is 48 and 36, respectively, in the 1942 cohort and 114 and 84 in the 1949 cohort. With less variability among intermediate scores, it is more difficult to find adequate predictors. Additionally, low predictive effectiveness may be a consequence of not having the appropriate predictors available from the interview data.

Within cohorts, juvenile seriousness scores appear to be the most important predictors of intermediate seriousness scores judging by the relative size of the standardized regression coefficients. In the 1942 cohort, juvenile seriousness score ($\beta=.519$) is 3.4 times more important than attitude toward police ($\beta=.153$) and 5.3 times more important than age at marriage ($\beta=.098$). Similar results were obtained in the 1949 cohort: juvenile seriousness score ($\beta=.475$) ranges from 3.3 to 6.3 times more important than any of the other variables in the model.

The relative importance of juvenile seriousness score can be gauged by comparing the R^2 values for the full model (Table 6) with a reduced model which contains only juvenile seriousness score as a predictor in each of the respective cohorts. Table 7 indicates that 31% ($R^2=.310$) of the total of 34% explained variance in the 1942 cohort is attributable to juvenile

TABLE 7. COMPARISON OF R^2 VALUES FOR REDUCED AND FULL MODELS IN PREDICTING INTERMEDIATE SERIOUSNESS SCORES, BY COHORT

	R^2	
	1942	1949
Full Model*	.343	.333
Reduced Model**	.310	.278
Difference	.033	.055

*Full model includes the variables in Table 6.

**Reduced model includes only juvenile seriousness score as a predictor variable.

seriousness score alone. Similarly, 28% ($R^2=.278$) of a total of 33% of the variance can be attributed to this variable in the 1949 cohort.

These findings suggest a further extension of Figure 1, in which juvenile seriousness score becomes the primary predictor of intermediate seriousness score (see Figure 2).

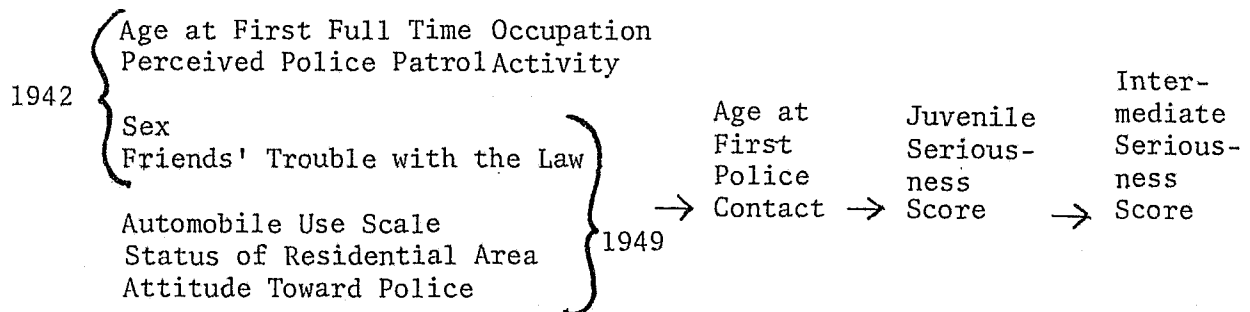


Figure 2

Predicting Adult Seriousness Scores

Table 8 presents the selected predictors of adult seriousness scores for both cohorts. Only one variable is common across cohorts: intermediate seriousness score. Relatively, it is the most important among the selected predictors based on the magnitude of the standardized coefficients.

TABLE 8. PREDICTORS OF ADULT SERIOUSNESS SCORES

Variables	β^*	
	1942	1949
Intermediate Seriousness Score	.445	.690
Employment Involvement During High School	.090	---
Educational Attainment	-.103	---
Family Intactness	-.124	---
Age at First Police Contact	-.146	---
Perceived Police Patrol Activity	-.120	---
Present Income	-.078	---
Adult Friends' Trouble with the Law	.191	---
Children in Family of Orientation	---	.069
Status of Present Occupation	---	-.082
Age at Marriage	---	.108
Juvenile Seriousness Score	---	.113
	R^2	
	.376	.613

*The unstandardized coefficients (b) are found in Appendix 1 (see footnote 2).

Apart from this common variable, the two cohorts are quite different in terms of the variables operating as predictors. In the 1942 cohort, high adult seriousness scores are linked to: 1) high employment involvement in high school, 2) low educational attainment, 3) low family intactness, 4) low age at first police contact, 5) perceived light police patrol activity in one's neighborhood during youth, 6) low present income, and 7) greater extent of adult friends' trouble with the law. Alternately,

in the 1949 cohort, high adult seriousness scores are associated with: 1) a large number of children in one's family of orientation, 2) low present occupational status, 3) higher age at marriage, and 4) higher juvenile seriousness scores.

The eight predictor variables in the 1942 cohort explain about 38% ($R^2=.376$) of the variance in the dependent variable while the five predictors in the 1949 cohort account for 61% ($R^2=.613$) of the variance in adult seriousness scores. The higher percentage of explained variance in the 1949 cohort seems to be due to the strong contribution of intermediate seriousness score ($\beta=.690$).

As before, most of the variability in the dependent variable is accounted for by a single variable--intermediate seriousness score. Table 9 compares the R^2 values of the full model in Table 8 with the reduced model containing only intermediate seriousness score as the predictor variable. In the 1942 cohort, 25% ($R^2=.254$) of a total of 38% explained variance is

TABLE 9. COMPARISON OF R^2 VALUES FOR REDUCED AND FULL MODELS IN PREDICTING ADULT SERIOUSNESS SCORES, BY COHORT

	R^2	
	<u>1942</u>	<u>1949</u>
Full Model*	.376	.610
Reduced Model**	<u>.254</u>	<u>.582</u>
Difference	.122	.028

*Full model includes the variables in Table 8.

**Reduced model includes only intermediate seriousness score as a predictor variable.

attributed to intermediate seriousness scores while in the 1949 cohort 58% ($R^2=.582$) of the total of 61% can be attributed to this variable.

Again, a further extension of the model in Figure 2 is required (see Figure 3). The results of the data-reduction procedure suggest this to be the most parsimonious model of the sequence of seriousness scores from the juvenile through the adult periods. The crucial link in the chain appears

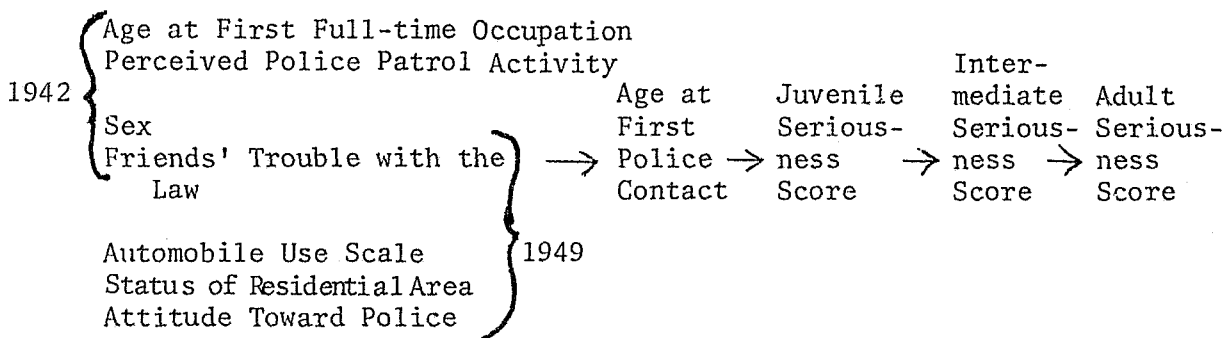


Figure 3

to be age at first police contact. The lower the number of years, the higher the juvenile seriousness score will be. The important problem would seem to be determining the conditions that account for variability in age at first contact; that is, why do some individuals begin their official criminal careers earlier than others? Although an attempt was made to provide a provisional answer to this question, it is clear that the information available in the interview schedule does not tap the important explanatory dimensions. Further study of the process by which individuals are protected from or become vulnerable to an early police contact is necessary.

Footnotes

¹ The stepwise procedure associated with SAS was deemed more useful than its analog in the Statistical Package for Social Scientists (SPSS; Nie, *et al.*, 1975) for two primary reasons. First, it is much easier to specify a selection parameter in SAS compared to SPSS. SAS allows the user to specify a particular alpha level (e.g., $p < .05$) for each variable to be entered or deleted from a model. In contrast, SPSS requires the user to select a specific F-value as a selection parameter. This value will only be approximate for a given significance level under conditions of variation in degrees of freedom which occur in stepwise selection. Second, SPSS offers only one variable selection routine in its regression procedure, i.e., forward inclusion without deletion of variables already entered into the equation. However, SAS offers 5 different selection routines: 1) forward inclusion without the deletion option as in SPSS, 2) stepwise forward selection with a deletion option, 3) backward elimination, 4) maximum R^2 improvement, and 5) minimum R^2 improvement (Barr, 1976: 251-252). The stepwise forward (SF), backward elimination (BE), and maximum R^2 improvement (MR) techniques were the ones selected as most useful for present purposes.

² Since many of the variables used in the analysis are ordinal rather than interval level, the presentation of the unstandardized regression coefficients (b) would impart little meaningful information about the exact, net influence of the independent variables. For the reader interested in using them as crude indicators of exact influence, the unstandardized coefficients are presented in Appendix 1.

³ The initial model, before selection, included employment during high school, amount of education, attitude toward school, age moved out of home, age at first job, age at marriage, number of siblings, sex, who respondent lived with while growing up, regularity of household head's employment, status of household head's occupation, race, social area of residence, self-reported delinquency, wanting to be a different person, attitude toward police, automobile use scale, extent of friends' trouble with the law, and perceived police patrol activity.

Appendix 1

Unstandardized Coefficients (b) for Predictors of Juvenile,
Intermediate, and Adult Seriousness Scores

Juvenile Seriousness Score Predictors

	b	
<u>Variables</u>	<u>1942</u>	<u>1949</u>
Age at First Police Contact	-2.117	-1.555
Friends' Trouble with the Law	.153	.372
Household Head's Economic Involvement	1.184	-4.175
Attitude Toward Police	---	1.491

Intermediate Seriousness Score Predictors

	b	
<u>Variables</u>	<u>1942</u>	<u>1949</u>
Juvenile Seriousness Score	.305	.321
Attitude Toward Police	.923	.847
Age at Marriage	.316	-.670
Years Before Leaving Home	---	.710
Age at First Full-Time	---	-.445
Status of Residential Area	---	-.462
Perceived Police Patrol Activity	---	.655

Adult Seriousness Score Predictors

	b	
<u>Variables</u>	<u>1942</u>	<u>1949</u>
Intermediate Seriousness Score	1.157	.937
Employment Involvement During High School	.755	---
Educational Attainment	-1.630	---
Family Intactness	-3.294	---
Age at First Police Contact	- .192	---
Perceived Police Patrol Activity	-1.525	---
Present Income	- .116	---
Adult Friends' Trouble with the Law	.582	---
Children in Family of Orientation	---	.339
Status of Present Occupation	---	- .323
Age at Marriage	---	.168
Juvenile Seriousness Score	---	.104

Appendix 2

Unstandardized Coefficients for Predictors of Age at
First Police Contact

	b	
	<u>1942</u>	<u>1949</u>
<u>Variables</u>		
Sex	-1.271	-1.040
Friends' Trouble with the Law	- .080	- .058
Age at First Full Time Occupation	.413	---
Perceived Police Patrol Activity	- .500	---
Automobile Use Scale	---	- .094
Status of Residential Area	---	.253
Attitude Toward Police	---	- .487

BIBLIOGRAPHY

- Barr, Anthony J., James H. Goodnight, John P. Sall, Jane T. Helwig
1976 A User's Guide to SAS·76. Raleigh, NC: SAS Institute Inc.
- Bengston, Vern J. and Robert S. Laufer
1974a Youth, Generations, and Social Change: Part I. Journal of Social Issues 30.
1974b Youth, Generations, and Social Change: Part II. Journal of Social Issues 30.
- Cavan, Ruth S. and Theodore Ferdinand
1975 Juvenile Delinquency. Philadelphia: J.B. Lippincott Co.
- Elliott, Delbert S. and Harwin L. Voss
1974 Delinquency and Dropout. Lexington: D.C. Heath and Co.
- Katkin, Daniel, Drew Hyman and John Dramer
1976 Juvenile Delinquency and the Juvenile Justice System. North Scituate, MA: Duxbury Press.
- Riley, Matilda White
1976 "Age Strata in Social Systems." Pp. 189-217 in Robert H. Binstock and Ethel Shanas (eds.), Aging and the Social Sciences. New York: Van Nostrand Reinhold Co.
- Shannon, Lyle W.
1978 Assessing the Relationship of Adult Criminal Careers to Juvenile Careers. Unpublished Progress Report to Law Enforcement Administration: (January).
- Wolfgang, Marvin, Robert Figlio and Thorsten Sellin
1972 Delinquency in a Birth Cohort. Chicago: University of Chicago Press.



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