Spring 1991

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Recommended Citation

Rolf Loeber, Magda Stouthamer-Loeber, Welmoet Van Kammen, David P. Farrington, Initiation, Escalation and Desistance in Juvenile Offending and Their Correlates, 82 J. Crim. L. & Criminology 36 (1991-1992)

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INITIATION, ESCALATION AND DESISTANCE IN JUVENILE OFFENDING AND THEIR CORRELATES*

PITTSBURGH YOUTH STUDY**

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ABSTRACT

This paper presents the results of a two year follow-up of a community sample of boys who initially were in grades one, four, or seven (labeled the youngest, middle, and oldest samples, respectively). Initiation in offending was most marked for the youngest sample, esca-

* Several of the measures used in this study were derived from our earlier work at the Oregon Social Learning Center. We are much indebted to the input from the staff there. In addition, several measures derive from other investigators in the Program on the Causes and Correlates of Delinquency (Terence P. Thornberry, Alan J. Lizotte, Margaret Farnworth, Marvin D. Krohn, and Sung Joon Jang at Albany, NY, and David Huizinga, Finn-Aage Esbensen, and Anne Wylie Weiher at Boulder, CO). Joyce Thompson's help is acknowledged in commenting on an early draft of the paper. Bruce Giroux and Phen Wong effectively assisted in the preparation of the findings.

A version of the paper was presented by the second author at the meeting of the American Society of Criminology, Baltimore, Maryland, November 1990. The paper was prepared under Grant No. 86-JN-CX-0009 from the Office of Juvenile Justice and Delinquency Prevention, Office of Justice Programs, United States Department of Justice. Points of view or opinions in this document are those of the authors and do not necessarily represent the official position or policies of the United States Department of Justice.

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tion in the seriousness of offending was prominent for the middle and oldest samples, while de-escalation was most prevalent in the oldest sample. The strength of association between the initial and later seriousness of offending appeared to increase with age. We classified offenders according to their pattern of seriousness of offending over time (called a dynamic classification of offenders). Many variables correlated with this measure, showing a covariation with both increases and decreases in the seriousness of offending over time. We noted major shifts in the correlates of offense seriousness between the three age samples—physical aggression and social withdrawal decreasing in strength, while school problem behaviors, peer deviance, and boys' positive attitude to deviancy increased in magnitude. Several factors were associated with the early initiation of offending (before age twelve), including social withdrawal and depression, positive attitude to problem behavior, association with deviant peers, and family problems. In contrast, the later onset of offending (between ages thirteen and fourteen), among other factors, was associated with low school motivation. Correlates of escalation were found for the two older samples but not for the youngest sample, and were particularly prominent in the area of school functioning, disruptive behaviors, positive attitude to deviant behavior, and some aspects of family functioning. Several variables were associated with desistance in offending, including low social withdrawal, low disruptive behavior, and positive motivational and attitudinal factors. The correlates of initiation were distinct from the processes explaining escalation, but were similar to the correlates of desistance. Finally, the paper discusses the relevance of the findings for preventive interventions.

I. INTRODUCTION

An important question in criminology is the nature of the covariation between independent measures and individuals' offending. Identifying putative causes from among known correlates of offending depends, among other factors, on how well given variables covary with offending both *concurrently* and *longitudinally*. Usually, researchers concurrently compare different categories of offenders to an independent variable. Less attention has been paid to the search for the more 'dynamic' covariation between independent variables and *changes* in offending *over time*. The longitudinal view on offending raises several developmental questions important to the understanding of putative causes of offending. Do independent variables have uniform effect on different processes, such as the initiation of offending, escalation, and desistance? Similarly, are correlates of offending the same for youngsters of different ages? Answers to these questions are relevant for preventive interventions.

Traditionally, most studies on juvenile offending have em-

ployed a between-group design in which nondelinquents and delinquents, sometimes categorized according to different levels of offenses, were compared on a given independent variable. The criterion for categorization could be the frequency and/or the seriousness (or type) of offenses committed. Although concurrent studies undoubtedly are useful in identifying relationships between independent variables and offending, such studies cannot investigate individuals who initiate offending, those who escalate in the seriousness of offenses, or those who de-escalate or desist.

Relatively little is known about changes in the seriousness of juveniles' offending as they grow up. Wolfgang *et al.*¹ demonstrated, by using official records, that the seriousness of index offenses gradually increases between ages ten and seventeen (after which it peaks at age twenty). Le Blanc and Fréchette,² on the basis of self-reports, also found an increase in the seriousness of offending during those years. What is unclear, however, is to what extent escalation in seriousness of offending can be observed in elementary school aged boys.

Given that changes in offense seriousness take place during the juvenile years, it is important to verify which concurrent correlates of offending also help to explain the variance in offending over time. Thus, instead of addressing the traditional question of between-group differences among offenders at a given point in time, the question has shifted to relating different levels of independent measures to temporal changes in offending. Qualitative improvements in our understanding about the temporal relationship between variables and delinquency may result from pursuit of these questions. In addition, it may help to narrow down the field of all known correlates to those variables which are possibly causal as well.

Not all causal variables, however, will necessarily covary with all forms of changes in offending. Instead, it may be that some variables are associated more closely with the initiation of offending than with either escalation or desistance.³ Other variables may better explain the variance in escalation or desistance than the variance in initiation of offending. In the field of substance use, Kandel *et al.*⁴

¹ M. WOLFGANG, T. THORNBERRY & R. FIGLIO, *FROM BOY TO MAN, FROM DELINQUENCY TO CRIME* (1987).

² M. LE BLANC & M. FRÉCHETTE, *MALE CRIMINAL ACTIVITY FROM CHILDHOOD THROUGH YOUTH* (1989).

³ *CRIMINAL CAREERS AND CAREER CRIMINALS* (A. Blumstein, J. Cohen, J. Roth & C. Visher eds. 1986) [hereinafter *CRIMINAL CAREERS*].

⁴ Kandel, Kessler & Margulies, *Antecedents of Adolescent Initiation into Stages of Drug Use*, 7 J. YOUTH & ADOLESCENCE 13 (1978).

showed that although peer factors played an important role in the initiation of marijuana use, parent variables were particularly associated with escalation to other illicit drugs. Similar studies on the correlates of initiation, escalation, and desistance in offending are rare.⁵ In criminology, attention has been drawn to the distinction between participation ("the fraction of a population becoming offenders") and differentiations among offenders, such as the frequency, seriousness and duration of offending, which may change over time.⁶

Not all criminologists agree that distinctions between participation (or initiation) and escalation and desistance are useful. For example, Hirschi and Gottfredson⁷ expressed that "there is nothing of particular etiological significance in the concepts of 'age of onset,' [and] 'age of desistance'—that there is nothing in these concepts not found in the concept of criminality itself."⁸ However, very few studies have sufficiently adequate longitudinal data to address the possible different etiologies of initiation, escalation, and desistance in offending.

Initiation, escalation, and desistance do not occur randomly throughout youngsters' lives; instead, there appear to be periods in which many youngsters initiate, other periods in which many escalate, and yet other periods in which de-escalation and desistance are more common.⁹ Hirschi and Gottfredson maintained that "the causes of crime are likely to be the same at any age."¹⁰ This notion of constancy of causes across different age groups has rarely been tested, however, and may highlight which correlates of offending (and substance use) are common among youngsters of several ages and which correlates are particularly pronounced for certain age groups.¹¹

If age-related shifts in correlates of offending can be confirmed, this will have an impact on theoretical explanations of delinquency. Increasingly, researchers have become aware that no single theory is

⁵ Loeber & Le Blanc, *Toward a Developmental Criminology*, in 12 CRIME & JUST.: A REVIEW OF RES. 375 (M. Tonry & N. Morris eds. 1990).

⁶ CRIMINAL CAREERS, *supra* note 3, at 17. Along these lines, Farrington & Hawkins, *Prediction of Participation, Early Onset, and Later Persistence in Officially Recorded Offending*, 1 CRIM. BEHAV. MENTAL HEALTH 1 (1991), compared the correlations of early versus late initiation, participation and desistance in offending.

⁷ Hirschi & Gottfredson, *Age and the Explanation of Crime*, 89 AM. J. SOC. 552 (1983).

⁸ *Id.* at 578.

⁹ Farrington, *Age and Crime*, in 7 CRIME & JUST.: AN ANNUAL REVIEW OF RES. 189 (M. Tonry & N. Morris eds. 1986).

¹⁰ Hirschi & Gottfredson, *supra* note 7, at 582.

¹¹ Hawkins, Lishner & Catalano, *Child Predictors and the Prevention of Adolescent Substance Abuse*, 56 NATIONAL INSTITUTE OF DRUG ABUSE RESEARCH MONOGRAPH SERIES 75 (1985).

likely to account for as complex a phenomenon as delinquency. Instead, researchers are paying more attention to possible age-related shifts in correlates and causes over time.¹² For example, parental influences are thought to play a more prominent role than peer influences in the early development of pre-delinquent disruptive behavior (such as oppositional behavior and physical aggression), but peer influences are thought to increase in importance over time.¹³

This paper presents the findings of the Pittsburgh Youth Study, a longitudinal study on the development of antisocial and prosocial behavior in 1,517 boys. These boys were first studied when they were in first, fourth, and seventh grades, respectively. Analyses are based on three subsequent follow-ups. The paper is a longitudinal view of the boys' offending careers, and presents a dynamic classification of offenders. In particular, the paper addresses the following questions: (1) What are the concurrent and longitudinal patterns of offense seriousness for boys in each of the three age samples? (2) What are the correlates of a dynamic classification of offenders accounting for changes in offending over time? (3) Which correlates of a dynamic classification of offenders are independent of offenders' age, and which correlates tend to increase or decrease with age? (4) What are the correlates of the initiation, escalation, and desistance in offending? (5) To what extent do initiation, escalation, and desistance in offending constitute different processes?

II. METHODS

A. SUBJECTS

The Pittsburgh Youth Study consists of three samples of boys who, when the study began, were in grades one, four, and seven. We labelled these groups the youngest, middle, and oldest samples, respectively.¹⁴ We randomly selected potential subjects from the list of all boys in these grades in the Pittsburgh public school system. Of those selected, 84% of the families consented to participate in the study, resulting in a sample of about 850 boys in each of the three grades. In the initial screening assessment, we collected information on the boys' antisocial and prosocial behavior from caretak-

¹² Farrington, *Stepping Stones to Adult Criminal Careers*, in *DEVELOPMENT OF ANTISOCIAL AND PROSOCIAL BEHAVIOR* 359 (D. Olweus, J. Block & M. Yarrow eds. 1986).

¹³ Loeber & Le Blanc, *Toward a Developmental Criminology*, *supra* note 5.

¹⁴ For a more extensive description of the subject acquisition, see Loeber, Stouthamer-Loeber, Van Kammen & Farrington, *Development of a New Measure of Self-Reported Antisocial Behavior for Young Children: Prevalence and Reliability*, in *CROSS NATIONAL RESEARCH IN SELF-REPORTED CRIME AND DELINQUENCY* 203 (M. Klein ed. 1989) [hereinafter Loeber, *Development of a New Measure*].

ers, teachers, and the boys themselves. We then calculated a risk score using the reports of potentially indictable offenses as a criterion. On the basis of the risk score, we selected a final sample for follow-up, which consisted of both the top 30% ($N = 250$) of the most antisocial youngsters in each grade and an equal number of boys randomly selected from the remainder. This resulted in three samples of about 500 boys (one sample for each of the grades) with whom we have conducted follow-up interviews every half year.

The subject characteristics, which have been previously described by Van Kammen *et al.*,¹⁵ include the following: about half of the boys were Afro-American and half were Caucasian; about 40% of the boys lived with a single parent; and between 36% and 47% of the parents received welfare. Subjects' participation rate remained high, with 94.1% of the original follow-up sample completing the fourth assessment when they were in grades three, six, and nine (modal ages eight, eleven, and fourteen, respectively). We used the term "caretaker" to identify the individual who claimed to have the principal responsibility in the household for the boy and who was the respondent in the interview. The caretaker was the biological, step, or adoptive mother in 91.4% of the cases; the aunt, grandmother, or foster mother in 4.0% of the cases; and a male in the remaining 4.6% of the cases.

Because adults and youngsters often perceive the same events very differently, care was taken to collect as much information about each topic as possible from more than one informant. For example, both the caretaker and the boy provided information about the caretakers' supervision of the boy.

Most of the assessments at Screening (S) had a six-month reference period (some concerned life time estimates); six-month reference periods were also used at assessments A, B, and C. Thus, the four contiguous assessment periods made it possible to examine changes in offending over time up to age eight for the boys in the youngest sample, up to age eleven for boys in the middle sample, and up to age fourteen for boys in the oldest sample.

B. MEASURES AT SCREENING (S)

1. Caretaker

In the screening interview, the caretaker completed a *Demographic Questionnaire* on the entire family. In addition, we adminis-

¹⁵ Van Kammen, Loeber & Stouthamer-Loeber, *Substance Use and Its Relationship to Conduct Problems and Delinquency in Young Boys*, 20 J. YOUTH & ADOLESCENCE (1991) (forthcoming).

tered an enlarged version of the *Child Behavior Checklist (Extended CBCL)*.¹⁶ The CBCL is a 112-item questionnaire concerning a wide range of child behavior problems, such as anxiety, depression, compulsions, oppositional behaviors, hyperactivity, and delinquency. It has been widely used and has adequate test-retest reliability;¹⁷ however, specific delinquent behaviors and concealing rather than aggressive antisocial behaviors (e.g., various forms of dishonesty and minor forms of property infraction) were under-represented in this scale. Therefore, we added eighty-eight items to cover concealing antisocial behaviors and most of the behaviors from the *Self-Reported Delinquency Scale*. The time frame for the *Extended CBCL* was the previous six months. In addition, we administered an 'ever' scale for twenty-one discrete antisocial items.

2. Teacher

Teachers completed an extended version of the *Teacher Report Form (Extended TRF)*, which is complementary to the CBCL.¹⁸ We also added twenty-three delinquent and concealing antisocial behavior items to this scale to increase its comparability with the child and caretaker reports. Both the TRF and the caretaker CBCL had the same time frame.

3. Child

We administered the revised versions of the National Youth Survey forty-item *Self-Reported Delinquency Scale (SRD)* to the boys in the oldest sample.¹⁹ For each question, the survey asked the boy whether or not he had ever engaged in a behavior, and if he had, how often he had done it in the previous six months. The interviewer discussed the half-year time frame at the beginning of the interview, and used personal events as well as dates (e.g., Christmas) to help delineate the appropriate time period.

For boys in the youngest and middle samples, we did not use the SRD questionnaire administered to the oldest boys, because we considered some of the questions too difficult for them to under-

¹⁶ T. ACHENBACH & C. EDELBROCK, *MANUAL FOR THE CHILD BEHAVIOR CHECKLIST AND REVISED CHILD BEHAVIOR PROFILE* (1983) [hereinafter T. ACHENBACH & C. EDELBROCK, *MANUAL*]; Achenbach & Edelbrock, *The Child Behavior Profile: II. Boys Aged 12-16 and Girls Aged 6-11*, 47 J. CONSULT. CLIN. PSYCHOL. 223 (1979); Achenbach, *The Child Behavior Profile: I. Boys Aged 6-11*, 46 J. CONSULT. CLIN. PSYCHOL. 478 (1978).

¹⁷ T. ACHENBACH & C. EDELBROCK, *MANUAL*, *supra* note 16.

¹⁸ Edelbrock & Achenbach, *The Teacher Version of the Child Behavior Profile I. Boys Aged 6-11*, 52 J. CONSULT. CLIN. PSYCHOL. 207 (1984).

¹⁹ D. ELLIOTT, D. HUIZINGA & S. AGETON, *EXPLAINING DELINQUENCY AND DRUG USE* (1985).

stand. In addition, not all items covered the type of antisocial activities in which these younger children were most likely to have engaged. Based on the SRD, we developed a thirty-three-item *Self-Reported Antisocial Behavior Scale (SRA)*²⁰ in which age-inappropriate items (e.g., joy-riding) or low frequency items were eliminated. To make their content less abstract, we modified the remaining questions from the SRD in a manner that more carefully defined specific situations or persons. For instance, the SRA included questions about theft in different locations instead of questions about stealing of objects of different values. Additionally, we changed the "hit to hurt" question in the SRD to refer to hitting specific victims such as teachers, caretakers, and siblings.

Some items in the SRA were preceded by a series of questions to determine whether or not the child understood the meaning of the behavior. As with the SRD for the older children, we collected information about the previous six months and lifetime. In addition, we administered the 112-item *Extended Youth Self-Report (Extended YSR)*, which measures various dimensions of psychopathology and is similar to the CBCL, to the boys in the oldest sample.²¹

C. MEASURES AT ASSESSMENTS A, B, AND C

The first follow-up interview at A for the caretakers and the boys was more extensive than the Screening assessment (S) and concerned the time frame of the previous six months. We repeated the following measures from the S assessment at A, B, and C: for the oldest boys, the *SRD Scale* and the *Extended YSR*; for the youngest boys, the *SRA*; for the caretaker, the *Extended CBCL*, and the *Demographic Questionnaire*; and for the teacher, the *Extended TRF*. For the middle sample of boys, we first administered the *SRD Scale* at A (and repeated it at B and C), thereby replacing the *SRA Scale* administered at S. In addition, at A, we extensively interviewed the boys and their caretakers about the boys' behavior, family interactions, and contacts with peers. Relevant measures will be mentioned when we review the constructs.

D. CONSTRUCTS

The following constructs feature in the analyses for this paper. In order to indicate how well items within a construct intercorrelate, we will mention Cronbach's α when appropriate. When few mea-

²⁰ Loeber, *Development of a New Measure*, *supra* note 14.

²¹ T. ACHENBACH & C. EDELBROCK, *MANUAL*, *supra* note 16.

surement items were available, average intercorrelations are presented instead.²²

1. *Offense Seriousness Classification*

The dependent variable used in the following analyses consists of an offense seriousness classification in which boys were classified according to the most serious level of offending reached either by S (*i.e.*, a lifetime estimate), or A, B, or C. The information used for these classifications comes from the boys' *SRD Scale* and *Antisocial Behavior Scale*, the caretakers' *Extended CBCL*, and the teachers' *Extended TRF*. We excluded status offenses and minor behaviors that were not likely to bring a boy in contact with the police.

With the severity ratings developed by Wolfgang *et al.*²³ as a guide, we made a distinction between three levels of seriousness of offending (and a nondelinquent level). *Level 0* denotes no offenses committed;²⁴ *Level 1* consists of *minor delinquency*, including minor forms of theft (*e.g.*, shoplifting and stealing an item worth less than \$5.00) and vandalism and fraud (*e.g.*, not paying for a bus ride). *Level 2* consists of *moderate delinquency*, which includes any theft over \$5, gang fighting, carrying weapons, and joyriding. *Level 3* consists of *serious delinquency*, which includes behaviors such as car theft, breaking and entering, strongarming, attacking to seriously hurt or kill, forced sex, and selling drugs.

2. *Dynamic Classification of Offenders*

An offense classification with four levels over four points in time can produce a large number of possible offense patterns. In order to reduce the 256 possible patterns, we settled on two classifications. We categorized subjects according to the highest level of offending they had ever committed up to S, and then by the worst offense they had committed in the 1.5 years covered by assessments A, B, and C. The double classification reduced the 256 possible change patterns to 16.

The next step was to classify the boys in mutually exclusive groups on the basis of their offense pattern over time. To reduce

²² Cronbach, *Coefficient Alpha and the Internal Structure of Tests*, 16 *PSYCHOMETRIKA* 297 (1951).

²³ M. WOLFGANG, R. FIGLIO, P. TRACY & S. SINGER, *THE NATIONAL SURVEY OF CRIME SEVERITY* (1985).

²⁴ Because the relatively trivial nature of some of the Level 1 items in the SRA Scale resulted in a high life time prevalence at S, subjects in the youngest and middle samples were required to have committed at least two of the Level 1 type of offenses in order to be considered delinquent.

the number of groups, we developed the following classification (see Figure 1). First, we formed three groups of stable individuals: *Stable Nondelinquents* (those who were nondelinquent at screening and at A, B, and C); *Stable Moderates* (those at Level 1 or 2 at screening who stayed at that level during A, B and C); and *Stable Highs* (those who continued offending at Level 3 during the whole period period).

We also formed two groups of offenders whose seriousness of offending increased over time. We labelled boys who were nondelinquent at S, but who started offending during A, B, or C, as the *Starters*. Similarly, we labelled boys who were already offending at S, and whose seriousness level of offending had increased over A, B, and C, as the *Escalators*. Further, we distinguished between two groups of boys whose offending decreased over time. We labelled boys whose level of seriousness of offending decreased, but continued to be delinquent at a lower level of seriousness as the *De-escalators*. Finally, we labelled boys delinquent at S, but who were not classified as delinquent at either A, B, or C, as the *Desistors*. Collectively, the seven groups will be referred to as the dynamic classification of offenders.

3. Other Variables

Physical Aggression (life-time) summarizes the boy's physical aggression, based on the "ever" assessment, S and A, using information from the caretaker and the teacher on the *Extended CBCL* and the *Extended TRF*, respectively. The construct is based on such items as "starts physical fights" and "hits teacher." For the youngest, middle, and oldest sample, the construct consisted of thirty-three, thirty, and twenty-nine questions, respectively (Cronbach's $\alpha(Y) = 0.70$; $\alpha(M) = 0.69$; $\alpha(O) = 0.66$; Y denotes the youngest sample, M the middle sample, and O the oldest sample).²⁵

Oppositional Defiant Symptom Score (previous six months) is based on the thirteen questions used in the DSM III-R diagnosis²⁶ of Oppositional Defiant Disorder (ODD), and is derived from *The Diagnostic Interview Schedule for Children (DISC-P)*²⁷ administered to the caretaker at A.

Attention Deficit Hyperactivity Symptom Score (previous six months). The fifteen questions used in the Attention-Deficit Hyperactivity Di-

²⁵ See Cronbach, *supra* note 22.

²⁶ AMERICAN PSYCHIATRIC ASSOCIATION, DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS (DSM-III-R) (1987).

²⁷ Costello, Edelbrock & Costello, *Validity of the NIMH Diagnostic Interview Schedule for Children: A Comparison Between Psychiatric and Pediatric Referrals*, 13 J. ABNORM. CHILD PSYCHOL. 579 (1985).

FIGURE 1
HIGHEST LEVEL OF OFFENSE SERIOUSNESS REACHED AT A, B, AND C
BY OFFENSE SERIOUSNESS LEVEL AT SCREENING

		Highest Level of Offense Seriousness Reached at A, B, and C			
Offense Level Ever at Screening		0	1	2	3
0	Nonde- linquent	Nonde- linquent	Starters		
1	Minor	Desistors	Stable	Escalators	
2	Moderate		De- escalators	Moderates	Stable Highs
3	Serious				

agnosis (ADHD) make up this construct. We computed the score in the same way and from the same source as the previous score.

Unaccountability (previous year) refers to the extent to which the boy makes himself less accountable to the adults as measured at S and A. The construct consists of eighteen items—twelve for the caretaker (*Extended CBCL*), two for the teacher (*Extended TRF*), and four for the boy (from the *Extended YSR*; oldest sample only). Examples of questions are: “stays out late at night,” “does not come straight home from school and you do not know where he is,” and “refuses to explain where he has been” ($\alpha(Y) = 0.74$; $\alpha(M) = 0.81$; $\alpha(O) = 0.81$).

Untrustworthiness (previous year) is based on twenty questions asked of the caretaker (*Extended CBCL*) and the teacher (*Extended TRF*) for the youngest and the middle samples, and twenty-two questions for the oldest sample on the *Extended YSR* (administered at S and A). The questions pertain to the caretaker’s and the teacher’s hesitation or endorsement that the boy cannot be trusted. Examples of questions are: “does not keep promises,” “says he is one place when he is somewhere else,” and “when confronted about his behavior is a ‘fast’ or a ‘smooth talker’ ” ($\alpha(Y) = 0.85$; $\alpha(M) = 0.88$; $\alpha(O) = 0.88$).

Manipulative Behavior (previous year) is based on sixteen questions asked of the caretaker (*Extended CBCL*) and the teacher (*Extended TRF*) at S and A. The construct summarizes how these adults perceive the boy as manipulative. Examples of questions are: "acts sneakily," "manipulates people," and "tells nasty things about others behind their backs" ($\alpha(Y) = 0.77$; $\alpha(M) = 0.81$; $\alpha(O) = 0.82$).

Self-Report of Depression (previous two weeks) is the total score of the thirteen items on the *Recent Mood and Feelings Questionnaire*²⁸ at A. The questions cover the symptoms necessary for making a diagnosis of Major Depression, according to DSM III-R ($(Y) = 0.80$; $(M) = 0.82$; $(O) = 0.84$).

Anxious/Fearful (previous year) is a measure of the boy's anxious and fearful problems and combines information from caretakers (*Extended CBCL*) and teachers (*Extended TRF*) at S and A. The scale consists of nine items from the internalizing scale on these measures. An endorsement of "sometimes" or "often" by either the caretaker or the teacher at S or at A resulted in a positive count for an item ($\alpha(Y) = 0.69$; $\alpha(M) = 0.65$; $\alpha(O) = 0.69$).

Withdrawal/Shyness (previous year) is a set of seven of the items concerned with the boys' withdrawal and shy behaviors and is constructed in the same way as the preceding construct ($\alpha(Y) = 0.57$; $\alpha(M) = 0.61$; $\alpha(O) = 0.57$).

Uninvolved in Organizations (previous year) uses information from the caretaker (*Extended CBCL*) at S and A on the number of organizations, clubs, and teams to which the boy belongs, and how active he is in these organizations. For the oldest sample, boys also provided this information in the *Extended YSR*. We averaged both the constructs from the different assessments, and, for the oldest sample, from different respondents (average intercorrelations: $(Y) = 0.62$; $(M) = 0.45$; $(O) = 0.52$).

Uninvolved in Jobs and Chores (previous year) uses information from the caretaker (*Extended CBCL*) from S and A on the number of jobs and chores the boy has, and how well he performs them. For the oldest sample, boys also provided this information in the *Extended YSR*. We averaged both the constructs from the different assessments, and, for the oldest sample, from different respondents (average intercorrelations: $(Y) = 0.45$; $(M) = 0.41$; $(O) = 0.29$).

Low Educational Achievement (previous year) combines judgments of caretakers (*Extended CBCL*), teachers (*Extended TRF*), and boys

²⁸ Costello & Angold, *Scales to Assess Child and Adolescent Depression: Checklists, Screens, and Nets*, 27 J. AM. ACAD. CHILD & ADOLESCENT PSYCHIATRY 726 (1988).

(*Extended YSR*, only in the oldest sample) on how well the boy performs in a maximum of seven academic subjects. We collected this information at S and at A. Each academic subject is rated on a four-point scale from failing to above average. Teacher ratings were made on a six-point scale. We first combined the two extreme scale points at both ends. We then averaged the ratings of all academic subjects by all informants at both assessments to arrive at a final score (average intercorrelations: (Y) = 0.56; (M) = 0.62; (O) = 0.49).

Truancy (life-time) represents the life-time estimate of boys' truancy, as measured through seven to eight questions, based on the boy's, the caretaker's, and the teacher's reports ($\alpha(Y) = 0.26$; $\alpha(M) = 0.56$; $\alpha(O) = 0.83$).

School Suspension (life-time) represents whether the boy was ever suspended from school, usually for misbehavior. Seven questions for the caretaker and the boy at S and A provided this information.

Low School Motivation (previous year). At S and A, teachers used a seven-point scale on the *Extended TRF* to report how hard the subject was working. To form this construct, we averaged the ratings of two different teachers at S and A. The two ratings correlated: (Y) = 0.54; (M) = 0.58; (O) = 0.46.

Negative Attitude to School (at A) consists of seven items tapping the boy's attitude and behavior towards school at A, such as "Do you try hard in school?;" "Do you think homework is a waste of time?;" and "Do you care what teachers think of you?" ($\alpha(Y) = 0.46$; $\alpha(M) = 0.48$; $\alpha(O) = 0.58$).

Positive Attitude to Problem Behavior (at A) is based on questions from the *Perception of Antisocial Behavior Scale* tapping the boy's opinion on whether it is right to engage in various problem behaviors, such as driving a car by oneself before the age of sixteen, smoking, or using fists to resolve a conflict. For the youngest sample, fifteen items make up this construct compared to eighteen items for the oldest sample ($\alpha(Y) = 0.76$; $\alpha(M) = 0.77$; $\alpha(O) = 0.84$).

Positive Attitude to Delinquency (at A) captured the boy's attitude to delinquent acts (nine questions for the youngest sample and eleven for the middle and the oldest samples) scored on a five-point scale on the *Attitude toward Delinquent Behavior Scale* ($\alpha(Y) = 0.82$; $\alpha(M) = 0.83$; $\alpha(O) = 0.87$).

Perceived Likelihood of Getting Caught (at A) was measured for the middle and the oldest samples only, and consisted of ten questions from the *Perceived Likelihood of Being Caught Scale*. It asked how likely

the boy thought it was that he would be caught by the police if he engaged in specific delinquent acts ($\alpha(M) = 0.91$; $\alpha(O) = 0.89$).

Peer Delinquency (previous six months) for the middle and the oldest samples summarizes the proportion of friends who engaged in eleven different forms of delinquency on the *Peer Delinquency Scale*, administered at A. The types of delinquency correspond to the items from the SRD. Examples of questions are: "How many of them (*i.e.*, friends) have gone into or tried to go into a building to steal something?" and "... attacked someone with a weapon with the idea of seriously hurting that person?" ($\alpha(M) = 0.84$; $\alpha(O) = 0.90$). For the youngest sample, the construct is based on nine items and asks for the proportion of friends engaged in the behavior, scaled on a three-point scale ($\alpha(Y) = 0.79$).

Bad friends (previous six months). This combined variable based on the caretaker's and the boy's report in response to the *Parents and Peers Scale* summarizes information on the boy's associating with bad friends at A (five items for the boy and caretaker, respectively). Examples of questions for the boy are: "Are there any children in your group of friends of whom your parents disapproved?;" and "Did any of the kids in your group of friends do things that your parents don't want you to do?" ($\alpha(Y) = 0.60$; $\alpha(M) = 0.71$; $\alpha(O) = 0.75$).

Low Peer Conventional Activities (previous six months) is based on the *Conventional Activities of Peers Scale*, which represents the proportion of peers who engaged in eight different conventional activities, such as being involved in athletics, obeying school rules, and participating in activities with the subject's family, as reported by the boys at A ($\alpha(Y) = 0.68$; $\alpha(M) = 0.72$; $\alpha(O) = 0.77$).

Negative Caretaker/Child Relationship (previous six months) is based on the *Child's Relationship with Caretaker/Siblings Scale*.²⁹ It consists of thirteen items measuring how often the boy perceived his relationship with his caretaker in positive or negative terms and sixteen items of the caretaker's report on his or her relationship with the boy. Caretakers completed an equivalent form of this scale. Examples of questions for the boy are: "How often have you thought your mother really bugged you a lot?;" and "How often have you liked being your mother's child?" Examples of questions for the caretaker are: "How often have you thought your child was a good child?;" and "How often have you wished he would just leave you alone?" ($\alpha(Y) = 0.73$; $\alpha(M) = 0.78$; $\alpha(O) = 0.84$).

²⁹ Stouthamer-Loeber, *Young Children's Verbal Misrepresentations of Reality*, in *CHILDREN'S INTERPERSONAL TRUST: SENSITIVITY TO LYING, DECEPTION AND PROMISE VIOLATION* (K. Rotenberg ed. 1991) (forthcoming).

Low Caretaker Enjoyment of Child (previous six months) consists of one question concerning how enjoyable activities with the child are, rated by the caretaker at A.

Family Not Close (previous six months) is based on five questions in the child's interview on the closeness of the child to his caretakers and the whole family at A. We asked only the middle and the oldest samples these questions ($\alpha(M) = 0.78$; $\alpha(O) = 0.83$).

Not Getting Along with Caretaker (previous six months) combines one item from the caretaker and one from the child on how well they get along with each other at A.

Single Parenthood. For this variable, children were classified as living with one parent or caretaker, or with two parents or caretakers, at A.

Caretaker's Poor Supervision of Child Outside of the Home (previous six months) is based on the caretaker's report, covered by four questions from the *Supervision/Involvement Scale*. The scale is based on our literature review of family factors related to delinquency,³⁰ on previous pilot work, on Moos' Family Environment scale,³¹ and on Skinner *et. al.*'s Family Assessment measure.³² Caretakers completed an equivalent form of this scale. An example is: "Do you know who your son's companions are when he is not at home?" ($\alpha(Y) = 0.57$; $\alpha(M) = 0.45$; $\alpha(O) = 0.62$).

Lax Discipline (previous six months). For the middle and the oldest samples, this construct combines two mini constructs, one based on the caretaker's report of his/her persistence in disciplining, and the other based on the boy's report on the same behavior on the *Discipline Scale*. This scale has evolved from previous pilot work at the Oregon Social Learning Center ($\alpha(M) = 0.55$; $\alpha(O) = 0.59$). For the youngest sample, only the caretaker's report was available ($\alpha(Y) = 0.48$). The questions, at A, addressed the degree to which the caretaker persisted with a disciplinary action in the face of the boy resisting such action, and were scored on a three-point frequency scale. An example of a question is: "If your mother asks you to do something and you don't do it right away, does your mother give up trying to get you to do it?"

Counter Control (previous six months). This construct summa-

³⁰ Loeber & Stouthamer-Loeber, *Family Factors as Correlates and Predictors of Juvenile Conduct Problems and Delinquency*, in 7 CRIME & JUST.: AN ANNUAL REVIEW OF RES. 29 (M. Tonry & N. Morris eds. 1986).

³¹ R. Moos & B. Moos, *Families*, in EVALUATING CORRECTIONAL AND COMMUNITY SETTINGS 263 (1975).

³² Skinner, Steinhauer & Santa-Barbara, *The Family Assessment Measure*, 2 CAN. J. COMM. MENTAL HEALTH 91 (1983).

izes eleven items of the caretaker's report at A, concerning whether the boy's behavior became worse when punished and whether the caretaker avoided disciplinary confrontations, based on the *Counter Control Scale*. Example questions are: "If you punish your son, does his behavior get worse?;" and "Do you think that your son will take it out on other children if you try to make him obey you?" ($\alpha(Y) = 0.78$; $\alpha(M) = 0.77$; $\alpha(O) = 0.81$).

Poor Communication about Child's Activities (previous six months) combines four questions from the caretaker and five questions from the boy at A on the *Revised Parent-Adolescent Communication Form*³³ administered at A. The construct concerns the caretaker's talking with the boy about his activities, with answer categories ranging from more than a month ago to yesterday/today. Example questions are: "When was the last time that you discussed with your son his plans for the coming day?;" and "In the past six months, about how often have you talked with your son about what he had actually done during the day?" ($\alpha(Y) = 0.67$; $\alpha(M) = 0.72$; $\alpha(O) = 0.76$).

Caretaker's Positive Attitude to Antisocial Behavior (at A) is based on the *Attitude to Antisocial Behavior Scale*, and summarizes how much of the time the caretaker considers it all right for the boy to display overt or concealing misbehavior, or to use alcohol, cigarettes, or drugs. It also asked about the caretaker's tolerance of the boy's choosing to associate with undesirable friends, carrying matches or a lighter, or rebelling against his parent(s) ($\alpha(Y) = 0.58$; $\alpha(M) = 0.69$; $\alpha(O) = 0.67$).

Afro-American. This construct indicates the African-American race of the study child. We coded the few Asians ($N = 11$) in the study as Caucasians.

Socio-Economic Status. We calculated socio-economic status by using Hollingshead's four factor index of social status.³⁴ We computed separate status scores for male and female caretakers, based on the occupation a person ordinarily pursues during gainful employment and level of education. If the family had two caretakers, we selected the highest status score. The score was dichotomized into unskilled and semiskilled workers versus skilled workers, business, technical, and professional workers.

Many of the constructs were not normally distributed; for that reason, where appropriate, they were dichotomized as close as pos-

³³ For the basis of this form, see Barnes & Olson, *Parent-Adolescent Communication*, in *FAMILY INVENTORIES* 55-70 (D. Olson, H. McCubbin, H. Barnes, A. Larsen, M. Muxen & W. Wilson eds. 1982); R. Moos & B. Moos, *supra* note 31; Skinner, *supra* note 32.

³⁴ A. HOLLINGSHEAD, *FOUR FACTOR INDEX OF SOCIAL STATUS* (1975).

sible at the 75% percentile for each sample to identify for each variable the 25% of the subjects with the most negative or least favorable attribute.

III. ANALYSES

We used two types of analyses: Chi-square analyses for tables with more than four cells, with Cramer's V as an index of association, and Relative Improvement over Chance (RIOC) for two-by-two tables.³⁵ We preferred RIOC over ϕ , because it corrects for both chance and maximum possible predictions in tables. The maximum possible predictions are particularly a problem when the prevalence of an independent variable differs from the prevalence of a dependent variable. RIOC varies from 0 to 1 for variables positively correlated with an independent variable and from -1 to 0 for negative correlates. RIOC compared with chi-square is less dependent on sample size and can be relatively large in tables with small N 's in which a chi-square would not necessarily reach statistical significance. In the present study, N 's varied dependent on the types of comparison between independent and dependent variables and the age of the subjects. We conservatively included for mention in the text only those RIOCs equal to or larger than 0.25.

IV. RESULTS

A. OFFENSE SERIOUSNESS

Our first question addressed how many boys from the youngest, middle, and oldest samples engaged in different levels of offense seriousness at screening (S) and in phases A, B and C. We first examined the lifetime levels of seriousness of offending at S. We hypothesized that the proportion of nondelinquents would be high for the youngest sample, intermediate for the middle sample, and lowest for the oldest sample; at the same time, we expected that the proportion of serious offenders would be lowest in the youngest sample, intermediate in the middle sample, and highest in the oldest sample. The top part of Figure 2 confirms these expectations: at S, the largest proportion of the youngest sample fell into the nondelin-

³⁵ Copas & Loeber, *Relative Improvement Over Chance (RIOC) for 2x2 Tables*, 43 BRIT. J. MATH. STAT. PSYCHOLOGY 293 (1990); Farrington & Loeber, *Relative Improvement Over Chance (RIOC) and Phi as Measure of Predictive Efficiency and Strength of Association in 2x2 Tables*, 5 J. QUANT. CRIMINOLOGY 201 (1989).

The formula for RIOC is:

$$\text{RIOC} = (\text{total correct} - \text{chance correct}) / (\text{maximum correct} - \text{chance correct}).$$

For the simplest formula to calculate RIOC, see Farrington & Loeber, this note, at 205.

quent category (63.8%), with increasingly smaller proportions of subjects displaying the more serious offense levels. Substantially more delinquents were in the middle sample than in the youngest sample; 32.7% of the boys in the middle sample had committed minor offenses, 16.5% had committed moderately serious offenses, and 15.6% had committed serious offenses. For the oldest sample, the nondelinquents were the smallest group (21.3%), with 30.2% of the boys having committed at least one serious form of delinquency.

In what direction did seriousness of offending change over a one-and-a-half year interval (phases A, B and C)? We hypothesized that more of the youngest sample would become delinquent, and that a higher proportion of them would engage in more serious delinquent acts. A comparison between the top and the bottom part of Figure 2 shows that, from Phase S to Phases A, B, and C, the percent of nondelinquents in the youngest sample fell from 63.8% to 37%. In that period, the proportion of moderate and serious delinquents nearly doubled. For the middle sample, a shift occurred from predominantly minor offending at S, to equal proportions of moderate and serious offending between phases A and C. For the oldest sample, the least amount of change occurred in offense seriousness, except that the proportion of boys involved in minor offenses decreased, while the proportion of boys involved in moderate offenses increased from 22.5% to 31.8%.

1. Offense Seriousness Over Time

Moving from between-group comparisons to within-subject comparisons, the next question addressed how many boys in each of the three samples continued to offend at the same level of offense seriousness and how many escalated or de-escalated over time. Furthermore, if a change did occur, was it mainly movement to adjacent levels of offense seriousness? Table 1 shows the results for the three samples. The highest percentages in Table 1 were at the diagonal, demonstrating, for example, that 65.7% of the boys in the oldest sample who were nondelinquent at S remained nondelinquent by C. Stability percentages for different seriousness levels of offending varied from 31.3% to 51.9% in the three samples.

Table 1 also shows the number of nondelinquent boys at S who initiated offending over the next two years. As expected, a larger proportion of the youngest sample, compared to the middle and oldest sample, moved out of nonoffending into higher levels. The largest proportion of those who moved out of Level 0 (no delinquency), moved to Level 1 (minor delinquency), but Level 2 (moderate delinquency) followed closely, especially for the oldest sample.

FIGURE 2
PERCENT OF BOYS IN EACH OF THE FOUR LEVELS OF DELINQUENCY
SERIOUSNESS

■ YOUNGEST SAMPLE ▨ MIDDLE SAMPLE □ OLDEST SAMPLE

TABLE 1
HIGHEST LEVEL OF OFFENSE SERIOUSNESS REACHED IN A, B, OR C
BY DELINQUENCY LEVEL AT SCREENING.

Highest level ever at Screening	Highest level reached at A, B, or C			
	0	1	2	3
<u>Youngest Sample</u>				
0 Nondelinquency N=321	156 (48.6)	90 (28.0)	48 (15.0)	26 (8.1)
1 Minor delinquency N=107	22 (20.6)	44 (41.1)	29 (27.1)	12 (11.2)
2 Moderate Delinquency N=45	4 (8.9)	13 (28.9)	19 (42.2)	9 (20.0)
3 Serious Delinquency N=30	4 (13.3)	9 (30.0)	7 (23.3)	10 (33.3)
chi-square (9) = 75.09*** Cramer's <i>V</i> = .22				
<u>Middle Sample</u>				
0 Nondelinquency N=179	108 (60.3)	33 (18.4)	22 (12.3)	16 (8.9)
1 Minor Delinquency N=166	33 (19.9)	52 (31.3)	43 (25.9)	39 (22.3)
2 Moderate Delinquency N=84	7 (8.3)	15 (17.9)	29 (34.5)	32 (38.1)
3 Serious Delinquency N=79	6 (7.6)	15 (19.0)	17 (21.5)	41 (51.9)
chi-square (9) = 159.68 *** Cramer's <i>V</i> = .32				
<u>Oldest Sample</u>				
0 Nondelinquency N=108	71 (65.7)	15 (13.9)	14 (13.0)	8 (7.4)
1 Minor delinquency N=131	24 (18.3)	47 (35.9)	37 (28.2)	23 (17.6)
2 Moderate delinquency N=114	16 (14.0)	12 (10.5)	56 (49.1)	30 (26.3)
3 Serious delinquency N=153	8 (5.2)	19 (12.4)	54 (35.3)	72 (47.1)
chi-square (9) = 206.75 *** Cramer's <i>V</i> = .40				

The numbers in parentheses are percentages of the row totals.

A small proportion of the initiation group in all three samples reached Level 3 (serious delinquency).

For those boys moving from Level 1 or 2 to a higher level, the probability of reaching Level 3 was higher for those initially at Level 2 than for those initially at Level 1. Thus, the adjacent level of offending was generally the most likely level to which boys moved over time. The same tendency could be observed for those boys decreasing their offense seriousness level over time. Generally, the higher the initial level of offending, the smaller the proportion that returned to a nondelinquent status.

A comparison of Cramer's V s for the three samples in Table 1 shows a trend for the association between seriousness of offending at S and seriousness of offending at A, B, and C to increase from the youngest to the middle and oldest samples (from 0.22 to 0.32 and 0.40, respectively). This implies that the prediction of future offense seriousness on the basis of past seriousness improved with age.³⁶

2. *Dynamic Classification of Offenders*

We now return to the dynamic classification of offenders previously referred to and summarized in Figure 1, which is based on the assessments from S to C. Figure 3 diagrams the distribution of individuals in the seven groups which make up the dynamic classification of offenders (*i.e.*, Stable Nondelinquents, Starters, Stable Moderates, Escalators, Stable Highs, De-escalators, and Desistors). In the youngest sample, 31.0% remained Nondelinquent by C; 32.6% were Starters; 12.5% were Stable Moderates; 9.9% were Escalators; 2.0% were Stable Highs; and the remaining groups each constituted less than 7% of the sample. The middle sample had a much smaller proportion of Nondelinquents and Starters. The Escalators were the largest group (22.4%) of the middle sample, which also had a Stable High group that was about four times as large as that for the youngest sample (8.1 vs. 2.0%). In the oldest sample, the proportions of Stable Moderates (20.4%) and Stable Highs (14.2%) were larger than in the middle sample (15.9% and 8.1%, respectively).

In summary, initiation in offending was much more common between ages 7 and 8 than between ages 10-11 or 13-14. Escalation

³⁶ It should be noted that, with the exception of only a few questions, we used virtually identical self-reports of delinquency in the different samples. The information from parents and teachers about the boys' delinquent acts was the same across the three samples.

FIGURE 3
PERCENT OF BOYS IN EACH OF THE CATEGORIES OF THE DYNAMIC CLASSIFICATION OF OFFENDERS

in offending was more characteristic for the 10-11 year-olds and the 13-14 year-olds than for the 7-8 year-olds. The percentage of Stable Moderates and Stable High offenders increased with age, being highest for the 13-14 year-olds. The proportion of De-escalators increased across the different age groups, while the percent of Desistors increased from age 7-8 to age 10-11, but then stabilized.

B. CORRELATES OF THE DYNAMIC CLASSIFICATION OF OFFENDERS

We selected a number of variables which have generally been related to delinquency (in the literature). We then asked what kind of relationships can be expected between the independent variables and the dynamic classification of offenders. For each of the following analyses, we first calculated the overall chi-square of the 7 by 2 table and Cramer's *V*. We were particularly interested to see if the independent variables covaried with the dynamic classification of offenders in a particular way (*i.e.*, where the prevalence of the negative attribute was low among the Stable Nondelinquents, higher for the Starters, higher still for the Stable Moderates, even higher for the Escalators, and highest for the Stable Highs). At the same time, we expected that the prevalence of the negative attribute in the De-escalators would be lower than for the Stable Highs, while the prevalence for the Desistors would be lower than the De-escalators and the Stable Highs. We realized that these are optimal expectations. At a minimum, we expected: (a) a significant association between the negative attribute and the dynamic classification of offenders; and (b) a *peak profile* (as in Figure 4) in which a lower proportion of the Stable Nondelinquents and the Desistors, compared with the Stable Highs, would have the negative attribute.

As an illustration, Figure 4 shows that the relationship between Physical Aggression and the dynamic classification of offenders followed the expected relationship for the oldest sample. Only 1.4% of the Nondelinquents were perceived by adult caretakers to have a high score on Physical Aggression, compared with 13.5% of the Starters, 19.4% of the Stable Moderates, 30.0% of the Escalators, and 44.4% of the Stable Highs. As expected, the prevalence of Physical Aggression decreased to 25.9% of the De-escalators, and 12.5% of the Desistors. Similar profiles of prevalence rates of offending appeared for Physical Aggression for the youngest and the middle samples, except that the peak occurred for the De-escalators in the middle sample.

Table 2 shows the relationships between several other child behaviors and the dynamic classification of offenders, and it demon-

FIGURE 4
RELATIONSHIP BETWEEN PHYSICAL AGGRESSION AND THE DYNAMIC
CLASSIFICATION OF OFFENDERS IN THE OLDEST SAMPLE

TABLE 2
CORRELATES OF THE DYNAMIC CLASSIFICATION OF OFFENDERS

	(A) Stable Non- delinquents	(B) Starters	(C) Stable Moderates	(D) Escalators	(E) Stable Highs	(F) De-escalators	(G) Desistors	Cramer's V (A-G)	Initiation RIOC (A,B)	Escalation RIOC (C,D)	Desistance RIOC (F,G)
Child Characteristics											
Physical aggression											
Y	7.1	24.4	28.6	38.0	90.0	51.7	10.0	.38***	.56	.13	.67
M	4.6	15.5	25.9	43.8	51.2	59.6	21.7	.40***	.48	.29	.47
O	1.4	13.5	19.4	30.0	44.4	25.9	12.5	.30***	.75	.20	.41
Oppositional defiant symptom score											
Y	12.9	22.1	34.9	40.0	30.0	44.8	16.7	.25***	.27	.06	.45
M	4.6	22.5	29.6	40.5	46.3	42.6	10.9	.34***	.61	.18	.60
O	2.8	18.9	30.1	29.5	35.7	36.1	8.3	.28***	.66	-.01	.68
Attention deficit/hyperactivity symptom score											
Y	11.0	27.0	38.1	46.0	40.0	24.1	6.7	.29***	.43	.08	.56
M	7.4	18.3	32.1	39.6	39.0	40.4	15.2	.30***	.37	.12	.46
O	1.4	24.3	30.1	38.6	31.4	31.3	8.3	.29***	.85	.12	.64
Unaccountability											
Y	5.1	19.5	23.8	30.0	60.0	34.5	20.0	.29***	.59	.10	.26
M	2.8	7.0	11.1	23.2	31.7	14.9	.0	.29***	.38	.39	IN
O	.0	8.1	15.5	13.3	30.6	20.0	8.3	.25***	IN	.07	.47
Untrustworthiness											
Y	7.7	22.6	31.7	44.0	50.0	37.9	23.3	.30***	.50	.15	.24
M	4.6	22.5	25.9	47.3	56.5	48.9	15.2	.40***	.61	.32	.53
O	4.2	27.0	32.0	34.4	62.5	44.7	8.3	.38***	.65	.03	.74
Manipulative behavior											
Y	17.3	37.2	46.0	56.0	60.0	58.6	26.7	.30***	.37	.11	.37
M	3.7	8.5	32.1	37.5	56.1	38.3	15.2	.39***	.34	.09	.43
O	.0	10.8	26.2	22.2	50.0	20.0	10.4	.35***	IN	-.08	.37
Depression											
Y	14.7	22.1	34.9	28.0	50.0	34.5	26.7	.19**	.20	-.10	.13
M	8.3	25.4	28.4	30.9	31.7	23.4	15.2	.21**	.45	.05	.21
O	14.1	16.2	23.3	25.6	39.4	24.7	8.3	.21**	.05	.04	.56

TABLE 2 (continued)

	(A) Stable Non- delinquents	(B) Starters	(C) Stable Moderates	(D) Escalators	(E) Stable Highs	(F) De-escalators	(G) Desistors	Cramer's V (A - G)	Initiation RIOC (A,B)	Escalation RIOC (C,D)	Desistance RIOC (F,G)
Anxious/fearful											
Y	19.2	21.3	17.5	28.0	20.0	17.2	20.0	.07	.05	.21	-.07
M	29.6	22.5	33.3	33.0	24.4	36.2	23.9	-.10	-.10	-.01	.21
O	21.1	16.2	30.1	24.4	29.2	22.4	20.8	-.10	-.09	-.10	.04
Withdrawal/shyness											
Y	14.1	23.8	34.9	28.0	30.0	44.8	16.7	.21**	.26	.10	.45
M	19.4	29.6	30.9	31.3	41.5	46.8	23.9	.18*	.17	.01	.33
O	23.9	21.6	34.0	34.4	34.7	23.5	27.1	.12	-.03	.01	-.09
Uninvolved in organizations											
Y	46.2	59.8	57.1	56.0	90.0	41.4	56.7	.16*	.14	-.01	-.15
M	31.5	36.6	33.3	28.6	48.8	31.9	23.9	.12	.06	-.09	.14
O	16.9	29.7	24.3	24.4	30.6	18.8	22.9	.11	.21	.00	-.13
Uninvolved in jobs/chores											
Y	23.7	25.0	22.2	38.0	50.0	17.2	23.3	.13	.03	.24	-.15
M	25.0	28.2	18.5	26.8	19.5	27.7	30.4	.09	.05	.21	-.05
O	22.5	24.3	22.3	18.9	30.6	23.5	25.0	.08	.03	-.08	-.04
Afro-American											
Y	49.0	54.6	69.8	76.0	90.0	44.8	63.3	.21***	.06	.13	-.21
M	42.6	57.1	53.1	58.9	87.8	53.2	54.3	.23***	.17	.06	-.01
O	40.8	67.6	45.6	60.0	76.4	57.6	66.7	.23***	.35	.16	-.09
School Behavior and Attitudes											
Low educational achievement											
Y	20.5	23.8	25.4	40.0	60.0	24.1	10.0	.19**	.08	.20	.41
M	11.1	19.7	23.5	36.6	39.0	38.3	8.7	.27***	.24	.25	.63
O	14.1	24.3	17.5	30.0	45.8	24.7	12.5	.24***	.20	.25	.38
Truancy											
Y	12.8	22.0	30.2	46.0	50.0	37.9	23.3	.25***	.27	.19	.24
M	13.0	32.4	29.6	46.4	63.4	51.1	19.6	.33***	.37	.25	.45
O	19.7	51.4	62.1	63.3	87.5	82.4	27.1	.47***	.35	.02	.57

TABLE 2 (continued)

	(A) Stable Non- delinquents	(B) Starters	(C) Stable Moderates	(D) Escalators	(E) Stable Highs	(F) De-escalators	(G) Desistors	Cramer's V (A - G)	Initiation RIOC (A,B)	Escalation RIOC (C,D)	Desistance RIOC (F,G)
School Suspension											
Y	5.1	17.1	31.7	42.0	60.0	44.8	20.0	.36***	.54	.13	.38
M	17.6	38.0	50.6	73.2	80.5	68.1	34.8	.44***	.32	.26	.34
O	28.2	51.4	62.1	73.3	93.1	78.8	43.8	.42***	.24	.18	.37
Low school motivation											
Y	14.1	18.9	25.4	44.0	50.0	20.7	16.7	.23***	.15	.24	.11
M	15.9	25.4	19.8	42.9	41.5	46.8	13.0	.28***	.19	.40	.57
O	5.6	21.6	13.9	33.3	43.1	32.9	10.4	.30***	.49	.40	.58
Negative attitude to school											
Y	25.8	20.5	36.5	28.6	30.0	32.1	6.7	.16*	-.12	-.11	.65
M	14.8	23.9	23.5	37.6	24.4	30.4	23.9	.18*	.20	.26	.12
O	9.9	16.2	28.2	32.2	45.1	22.4	8.3	.27***	.18	.06	.52
Attitudes to Antisocial Behavior											
Positive attitude to problem behaviors											
Y	14.7	27.0	36.5	38.0	50.0	27.6	13.3	.22***	.30	.02	.34
M	12.0	25.4	23.5	41.8	34.1	38.3	17.4	.25***	.31	.31	.38
O	5.6	10.8	26.2	33.3	48.6	23.5	6.3	.32***	.24	.11	.64
Positive attitude to delinquency											
Y	15.4	22.4	28.6	32.0	20.0	24.1	26.7	.13	.19	.05	-.05
M	19.4	23.9	24.7	40.9	31.7	29.8	13.0	.20**	.08	.27	.39
O	8.5	13.5	27.2	37.8	42.3	24.7	16.7	.25***	.17	.15	.24
Perceived likelihood of getting caught											
M	8.3	33.8	22.2	27.3	31.7	34.0	21.7	.21***	.55	.12	.22
O	9.9	13.5	27.2	25.6	39.4	28.2	12.5	.22***	.11	-.03	.45
Peer Factors											
Peer delinquency											
Y	11.3	25.5	45.8	49.0	25.0	28.6	13.3	.31***	.39	.03	.36
M	2.0	18.0	25.7	36.0	53.8	22.2	7.0	.37***	.75	.19	.53
O	7.4	5.6	18.9	29.6	52.9	22.1	7.0	.36***	.09	.21	.58

TABLE 2 (continued)

(A) Stable Non- delinquents		(B) Starters	(C) Stable Moderates	(D) Escalators	(E) Stable Highs	(F) De-escalators	(G) Desistors	Cramer's V (A - G)	Initiation RIOC (A,B)	Escalation RIOC (C,D)	Desistance RIOC (F,G)
Bad friends											
Y	20.4	23.6	29.0	32.0	30.0	37.9	13.3	.13	.07	.04	.48
M	10.4	24.3	23.5	34.9	37.5	31.9	13.0	.23***	.35	.22	.42
O	8.6	19.4	26.2	33.0	49.3	28.6	8.3	.29***	.30	.11	.61
Low peer conventional activities											
Y	17.8	21.9	26.7	39.6	33.3	34.5	27.6	.16	.11	.18	.11
M	19.8	30.0	24.1	21.1	35.9	31.9	19.6	.13	.17	-.08	.24
O	10.1	16.2	35.3	23.9	32.9	23.8	21.3	.19**	.17	-.18	.07
Family Factors											
Negative caretaker-child relationship											
Y	13.5	25.3	36.5	36.7	60.0	37.9	20.0	.24***	.31	.00	.31
M	5.6	26.8	19.8	39.1	46.3	34.0	15.2	.31***	.60	.36	.38
O	5.6	21.6	31.1	27.7	37.7	29.8	12.5	.24***	.49	-.06	.47
Low caretaker enjoyment of child											
Y	20.0	28.4	36.5	32.0	10.0	34.5	30.0	.14	.18	-.06	.07
M	16.8	31.0	29.6	28.2	39.0	34.0	11.1	.18*	.25	-.03	.51
O	21.1	18.9	37.9	32.2	34.8	38.6	25.0	.15	-.04	-.07	.26
Family not close											
M	15.7	21.1	30.9	23.6	22.0	27.7	19.6	.12	.12	-.16	.17
O	12.7	16.2	40.8	25.6	33.8	22.4	18.8	.22***	.09	-.21	.11
Not getting along with caretaker											
Y	13.2	20.8	29.5	27.1	30.0	17.2	21.4	.14	.23	-.04	-.11
M	9.4	18.8	30.4	34.6	42.5	36.2	15.9	.26***	.28	.07	.40
O	11.3	16.7	26.5	26.7	31.3	35.4	18.8	.18*	.14	.00	.36
Single parenthood											
Y	39.7	36.8	52.4	64.0	90.0	55.2	30.0	.23***	-.04	.15	.29
M	25.0	45.1	25.9	50.0	43.9	36.2	37.0	.21**	.24	.35	-.01
O	40.8	51.4	31.1	41.1	59.2	51.8	50.0	.19**	.12	.13	.02

TABLE 2 (continued)

(A) Stable Non- delinquents	(B) Starters	(C) Stable Moderates	(D) Escalators	(E) Stable Highs	(F) De-escalators	(G) Destors	Cramer's V (A - G)	Initiation RIOC (A,B)	Escalation RIOC (C,D)	Desistance RIOC (F,G)
Low socio-economic status										
Y	20.9	34.4	37.0	60.0	41.4	36.7	.17*	.14	.04	.06
M	14.6	25.3	37.6	43.6	26.7	24.4	.21**	.28	.16	.04
O	29.4	22.8	29.5	35.8	30.4	20.8	.10	-.05	.14	.13
Caretaker's Child Rearing and Attitudes										
Poor supervision										
Y	26.0	33.3	40.0	70.0	41.4	33.3	.15	.14	.08	.11
M	16.0	27.2	36.4	41.5	29.8	23.9	.18*	.25	.16	.11
O	7.0	15.5	20.5	31.9	30.1	14.6	.20**	.42	.13	.40
Lax discipline										
Y	18.1	25.4	26.0	10.0	24.1	20.0	.08	.09	.01	.09
M	20.8	33.3	28.2	31.7	29.8	13.0	.09	.10	-.10	.39
O	11.3	23.5	21.3	26.1	22.9	12.5	.10	.00	-.05	.35
Counter control										
Y	19.5	38.7	46.0	50.0	37.9	10.0	.23***	.16	.08	.58
M	20.4	30.9	36.0	39.0	38.3	19.6	.17*	.04	.09	.33
O	9.9	34.0	22.7	42.0	36.9	10.4	.25***	.41	-.18	.62
Poor communication about child's activities										
Y	21.1	31.7	31.1	33.3	35.7	27.6	.12	.01	-.01	.13
M	19.0	25.9	20.9	36.6	31.9	13.0	.17*	.26	-.13	.42
O	14.1	27.5	27.6	35.3	28.0	20.8	.16	.00	.00	.18
Caretaker's positive attitude to antisocial behavior										
Y	19.9	46.8	32.0	70.0	34.5	30.0	.22***	.19	-.16	.07
M	26.9	25.9	23.4	12.2	36.2	21.7	.13	-.09	-.06	.25
O	21.1	28.2	27.3	27.1	23.8	39.6	.12	-.04	-.01	.34

Note: Y = Youngest Sample; M = Middle Sample; O = Oldest Sample; RIOC = Relative Improvement Over Chance; IN = Insufficient N; Significance levels for Chi-square: * $p < .05$; ** $p < .01$; *** $p < .001$.

strates that many of these relationships followed the expected peak profile. The following held across the three samples: Unaccountability, Untrustworthiness, Manipulative Behavior, Depression, Afro-American Race, Low Educational Achievement, Truancy, School Suspension, Negative Caretaker-Child Relationship, Poor Supervision, and Counter Control.³⁷

In addition, we found the peak profile with the highest percentage for the Stable Highs in two out of the three samples for Socio-economic Status (youngest and middle samples), Oppositional Defiant Symptom Score, Peer Delinquency, Bad Friends, Single Parenthood (middle and oldest samples), Physical Aggression, Low School Motivation, and Positive Attitude to Problem Behavior (youngest and oldest samples). For a few variables, we observed the peak profile for a single sample only: for the youngest sample (Caretaker's Positive Attitude to Antisocial Behavior), the middle sample (Low Caretaker Enjoyment of Child, Not Getting Along with Caretaker, Poor Communication about Child's Activities), and the oldest sample (Negative Attitude to School, Positive Attitude to Delinquency, Perceived Likelihood of Getting Caught).

In a few instances, we found no significant relationship (see Table 2, Cramer's *V*) between a variable and the dynamic classification of offenders in all three samples. Examples are the caretaker's and teacher's reports of the boys' Anxious/Fearful Behaviors, and the boys' being Uninvolved in Jobs/Chores. In other instances, we observed significant relationships for some but not other samples, which we will discuss in the next section.

Depending on the variable, the peak profile differed as to the proportion of Stable High offenders identified. In the youngest sample, 90% of the Stable High offenders (*N* = 10) scored high on Physical Aggression, were Afro-American, were Uninvolved in Organizations, or came from Single Parent households. The Stable Highs for the middle (*N* = 41) and the oldest (*N* = 72) samples appeared more diverse: less than 40% scored high on the Attention Deficit/Hyperactivity Symptom Score; only about 50% were high on Physical Aggression; about 60% scored high on Untrustworthiness; and about 80% were Afro-American. About 90% of the Stable Highs in the oldest sample had been truant or suspended from school.

³⁷ Yet in a few instances, the prevalence of Stable Highs was not very different from either that of the Escalators or the De-escalators.

C. AGE-SPECIFIC CORRELATES OF THE DYNAMIC CLASSIFICATION OF OFFENDERS

We next analyzed which variables were related to the dynamic classification of offenders across the three age groups, and which variables increased or decreased with age in their strength of relationship to the offender classification. The following analyses are exploratory, because some constructs consisted of *slightly* different numbers of items for some of the samples. Table 2 lists the Cramer's *V*s, based on the overall chi-squares (reflecting the strength of association between the independent variables and the dynamic classification of offenders) which can be compared among the samples due to similar *N*'s.

Age-related findings are summarized in Figure 5.³⁸ Several variables were similar in strength across the youngest, middle, and oldest samples, including two measures of disruptive behavior (Attention Deficit/Hyperactivity Symptom Score, Unaccountability), Depression, Afro-American Race, School Suspension, Peer Delinquency, and Single Parenthood. Another set of variables, although also significantly associated with the dynamic classification of offenders for each of the three samples, varied in strength of association, with the strongest correlation usually occurring for the middle sample (this applied to Oppositional Defiant Symptom Score, Manipulative Behavior, Low Educational Achievement, Not Getting Along with Caretaker, Negative Caretaker/Child Relationship, and Counter Control).³⁹

For another set of variables, the association with the dynamic classification of offenders *decreased* in strength, especially between the middle and the oldest samples. This decreased occurred for Physical Aggression, Withdrawal/Shyness, Socio-Economic Status, and Caretaker's Positive Attitude to Antisocial Behavior (where the decrease occurred between the youngest and the two older samples).

Another set of variables *increased* in strength from the youngest to the middle sample and then levelled off or continued to increase for the oldest sample. This pattern particularly applied to school related behaviors (*e.g.*, Truancy, Low School Motivation, Negative Attitude to School), Untrustworthiness, attitudes to deviance (Posi-

³⁸ Omitted were those variables which had been measured only for the middle and the oldest samples—Perceived Likelihood of Getting Caught and Family Not Close.

³⁹ In addition, some aspects of caretaker-child interactions were mostly relevant for the middle sample only—Low Caretaker Enjoyment of the Child and Poor Communication about Child Activity.

FIGURE 5
STRENGTH OF THE CORRELATES OF THE DYNAMIC CLASSIFICATION
OF OFFENDERS FOR THE THREE SAMPLES

Youngest sample

(age 7-8)

Middle sample

(age 10-11)

Oldest sample

(age 13-14)

Similar strength across the three age samples

Attention deficit/hyperactivity symptom score
 Unaccountability
 Depression
 Afro-American
 School suspension*
 Peer delinquency
 Single parenthood

Variable strength across the three age samples

Oppositional defiant symptom score*
 Manipulative behavior*
 Low educational achievement*
 Not getting along with caretaker*
 Negative caretaker/child relationship*
 Counter control

Decreasing strength from youngest to oldest sample

Physical aggression
 Withdrawal/shyness
 Caretaker's positive attitude to antisocial behavior
 Socio-economic status

Increasing strength from youngest to oldest sample

Truancy
 Low school motivation
 Negative attitude to school
 Untrustworthiness
 Positive Attitude to Problem Behavior
 Positive Attitude to Delinquency
 Bad friends
 Poor supervision

* Strongest relationship for middle sample.

tive Attitude to Problem Behavior, Positive Attitude to Delinquency), having Bad Friends, and Poor Supervision.

D. CORRELATES OF INITIATION, ESCALATION, AND DESISTANCE

We then sought to determine the correlates of initiation, escalation, and desistance.

1. Initiation

For the process of initiation, we compared the Starters with the Stable Nondelinquents in Table 2. Figure 6 summarizes from Table 2 which factors were particularly associated with initiation and for what age sample (using a cut-off of 0.25 for the RIOC as the criterion). Several disruptive behaviors were associated with initiation in all three samples: Physical Aggression, Oppositional/Defiant Symptom Score, Attention Deficit/Hyperactivity Symptom Score, Untrustworthiness, and Truancy. Also, Negative Caretaker-Child Relationship was associated with initiation in offending in all three samples.

For both the youngest and the middle samples, the following variables were also significantly associated with initiation: School Suspension, Positive Attitude to Problem Behavior, and Peer Delinquency. Both the boys' association with Bad Friends, and the caretakers' Poor Supervision were related to initiation of offending in the middle and the oldest samples. Withdrawal/Shyness was exclusively associated with initiation in the youngest sample. Initiation was associated with the following variables in the middle sample only: Depression; and several problems or handicaps within the family (Low Caretaker Enjoyment of Child, Not Getting Along with Caretaker, Low Socio-Economic Status, and Poor Communication about Child's Activities). For the oldest sample only, Low School Motivation, Counter Control, and Afro-American race were related to the initiation of offending.

We note some quite distinct differences between Stable Nondelinquents and Starters. For example, the Starters in the youngest sample were three times as likely to be aggressive as the Nondelinquents (24.4% vs. 7.1%); for the middle sample, the Starters were over four times as likely to be oppositional (22.5% vs. 4.6%); and the Starters in the oldest sample were seventeen times as likely to have a high Attention Deficit/Hyperactivity Symptom Score as the Nondelinquents (24.3% vs. 1.4%). With regard to school behaviors, Starters in the middle and oldest samples were two-to-three times more likely to be truant than Nondelinquents. Moreover, two-

FIGURE 6**CORRELATES OF INITIATION OF OFFENDING FOR THE THREE SAMPLES**Youngest Sample

(age 7-8)

Middle Sample

(age 10-11)

Oldest sample

(age 13-14)

Across-age effects

Physical aggression
 Oppositional defiant symptom score
 Attention deficit/hyperactivity symptom score
 Untrustworthiness
 Truancy
 Negative caretaker-child relationship

School suspension
 Positive attitude to problem behavior
 Peer delinquency

Poor supervision
 Bad friends

Age-specific effects

Withdrawal/shyness

Depression
 Low caretaker
 enjoyment of child
 Not getting along with
 caretaker
 Low socio-economic
 status
 Poor communication
 about child's
 activities

Low school motivation
 Counter control
 Afro-American

FIGURE 7
CORRELATES OF ESCALATION IN OFFENDING FOR THE THREE
SAMPLES

Youngest Sample
 (age 7-8)

Middle Sample
 (age 10-11)

Oldest Sample
 (age 13-14)

Across-age effect

Low educational achievement
 Low school motivation

Age-specific effects

Physical aggression
 Unaccountability
 Untrustworthiness
 Truancy
 School suspension
 Negative attitude to
 school
 Positive attitude to
 problem behavior
 Positive attitude to
 delinquency
 Negative caretaker-
 child relation
 Single parenthood

to-four times more Starters had a poor relationship with their caretakers than Nondelinquents.

In summary, one set of factors, mostly consisting of disruptive behaviors, was associated with initiation of offending across the three samples. In addition, a distinction appeared between variables associated with early initiation, prior to age 12, and variables associated with later initiation. For early initiation, several social and affective problems (*e.g.*, Withdrawal/Shyness and Depression), and family factors (including Low Socio-Economic Status) appeared relevant. Low School Motivation, Counter Control, and Afro-American race were particularly associated with late onset (ages 13-14).

2. *Escalation*

For the process of escalation, we compared the Stable Moderates with the Escalators in Table 2. Figure 7 summarizes from Table 2 the correlates of escalation. It shows that school factors (Low Educational Achievement and Low School Motivation) were related to escalation in the middle and the oldest samples. Otherwise, most correlates for escalation were found for the middle sample: various

disruptive behaviors (Physical Aggression, Unaccountability, Untrustworthiness, Manipulative Behavior, Truancy); favorable attitudes to deviance (Negative Attitude to School, Positive Attitude to Problem Behavior, Positive Attitude to Delinquency); and some family characteristics (Negative Caretaker-Child Relationship and Single Parenthood).

Table 2 also shows that the differences between the Escalators and the Stable Moderates were not very great. For example, 43.8% of the Escalators scored high on Physical Aggression in the middle sample, compared with 25.9% of the Stable Moderates.

In summary, correlates of escalation were not found for the youngest sample and were fewer in number for the older samples than the correlates of initiation. Correlates of escalation were associated with lower levels of scholastic achievement and motivation, higher disruptive behavior, positive orientation toward deviance, and some family factors, but not with peer factors.

3. *Desistance*

For the process of desistance, we compared De-escalators with Desistors in Table 2.⁴⁰ Figure 8 summarizes from Table 2 those variables associated with desistance in offending. Desistance was related to low disruptive behaviors in the three samples (Low Physical Aggression, Low Oppositional Defiant Symptom Score, Low Attention Deficit/Hyperactivity Symptom Score), including the absence of covert acts (Accountability and Low Manipulative Behavior). Desistance was also related to behavior and attitudes toward school (Low School Suspension and Good Educational Achievement). Also related to desistance across the three samples were a Negative Attitude to Problem Behavior, associating with conforming friends (Low Peer Delinquency, Few Bad Friends), and few problems between the boys and their caretakers (Positive Caretaker-Child Relationship, and Low Counter Control).

For the youngest and middle samples, Low Withdrawal/Shyness was also associated with desistance in offending. For the middle and the oldest samples, Trustworthiness, Low Truancy, Good School Motivation, Caretaker Enjoyment of Child, Getting Along with the Caretaker, and the caretaker's Strict Discipline were associated with desistance. In addition, several variables were relevant for single samples; for the youngest sample, these were the

⁴⁰ For de-escalation, we could also have compared the Stable Highs with the De-escalators and the Desistors combined, but the small number of Stable Highs in the youngest sample made this less feasible.

FIGURE 8
CORRELATES OF DESISTANCE IN OFFENDING FOR THE THREE
SAMPLES

<u>Youngest Sample</u>	<u>Middle Sample</u>	<u>Oldest Sample</u>
(age 7-8)	(age 10-11)	(age 13-14)

Across-age effects

Low physical aggression
 Low oppositional defiant symptom score
 Low attention deficit/hyperactivity symptom score
 Accountability
 Low manipulative behavior
 Good educational achievement
 Low school suspension
 Negative attitude to problem behavior
 Low peer delinquency
 Few bad friends
 Positive caretaker-child relationship
 Low countercontrol

Low withdrawal/shyness

Trustworthiness
 Low truancy
 Good school motivation
 Caretaker enjoyment of child
 Getting along with caretaker
 Strict discipline

Age-specific effects

Positive attitude to school
 Two-parent family

Neg. attitude to del.
 Good communication
 about child's activ.

Low depression
 Positive attitude to school
 Good supervision

boys' Positive Attitude to School and being from a Two Parent Family. Uniquely associated with desistance in the middle sample were the boys' Negative Attitude to Delinquency, and Good Communication about the Child's Activities. Finally, for the oldest sample, the boys' low score on Depression, their Positive Attitude to School, and the caretakers' Good Supervision were also associated with desistance in offending. The Caretaker's Positive Attitude to Antisocial Behavior was negatively related to desistance in the middle sample, but positively related to desistance in the oldest sample.

Overall, large differences existed between the proportions of De-escalators and Desistors on these variables. For instance, 51.7% of the De-escalators in the youngest sample were seen as aggressive, compared to 10% of the Desistors. In the oldest sample, 44.7% of the De-escalators were seen as untrustworthy, compared to 8.3% of the Desistors. The same ratio was found for Truancy, whereas the ratio for the other variables ranged between two and three.

The fact that variables from several domains were related to the dynamic classification of offenders should not imply that Desistors have the same level of negative attributes as Stable Nondelinquents. A statistical comparison between Desistors and Stable Nondelinquents (not listed in Table 2) showed instead that Desistors displayed a prevalence of negative attributes that was significantly higher than that of Stable Nondelinquents in terms of Physical Aggression (middle and oldest samples), Unaccountability, Negative Attitude to School (youngest sample), Untrustworthiness, School Suspension (youngest and middle samples), Manipulative Behavior (middle and oldest samples), Perceived Likelihood of Getting Caught (middle sample), and being Afro-American (oldest sample).

In summary, many correlates of desistance applied to the three age samples, and included low disruptive behavior, good educational achievement, negative attitude to problem behavior, association with conforming peers, and positive interactions between the boy and his caretaker. Factors associated with early desistance (prior to age 12) were the boys' low withdrawal and shyness, positive attitude to school, negative attitude to delinquency, and several positive family factors (living in a two-parent family and good communication about the child's activities). Factors associated with later desistance (ages 13-14) were the boys not being depressed, their positive attitude to school, and the caretakers' good supervision of boys' activities outside of the home.

E. DISTINCTIONS BETWEEN THE CORRELATES OF INITIATION,
ESCALATION AND DESISTANCE

One can argue that because many of the correlates of initiation were the same as the correlates of escalation and desistance, distinctions between the three processes are unwarranted. We can explore this argument in at least three ways: first, by examining which correlates applied to one process but not another; second, by examining whether correlates are equally strongly related to each process; and third, by examining how correlates of one process covaried with correlates of the other processes.

We first examined the extent to which variables associated with one type of process were also correlated with the other process(es). Some variables were associated with initiation but *not* with escalation, including Oppositional Defiant Symptom Score, Attention Deficit/Hyperactivity Symptom Score (all three samples), Manipulative Behavior, Peer Delinquency (youngest and middle samples), Withdrawal/Shyness (youngest sample), Depression, Perceived Likelihood of Getting Caught, Low Caretaker Enjoyment of the Child, Not Getting Along with the Caretaker, Low Socio-Economic Status, Poor Communication about the Child's Activities (middle sample), Bad Friends, Poor Supervision (middle and oldest samples), Afro-American race, and Counter Control (oldest sample). The magnitude of RIOCs for those variables associated with initiation but not with escalation tended to be substantial: sixteen out of the twenty-three RIOCs exceeded 0.30.

In contrast, some variables were associated with escalation in offending but *not* with initiation. These variables were a Negative Attitude to School, a Positive Attitude to Delinquency, and Single Parenthood (all middle sample). Only one variable (Afro-American race) was associated with initiation but *not* with either escalation or desistance (oldest sample), while Strict Discipline was associated with desistance in offending (middle and oldest samples) but *not* with either initiation or escalation. Only two out of the five relevant RIOCs, however, exceeded 0.30. Thus, although some factors were uniquely associated with one of the three processes, the findings rarely applied to all three samples and were not consistently strong. The distinction between the correlates of initiation and escalation was more pronounced than that between initiation and desistance.

The second approach to possible distinctions between initiation, escalation, and desistance focuses on the magnitude of associations. For that purpose, we computed *t*-tests to compare the RIOCs for initiation, escalation, and desistance across the three samples.

The results showed that the association between independent variables and initiation (Mean RIOC = 0.25) was significantly different from that with escalation (Mean RIOC = 0.12) and desistance (Mean RIOC = 0.30).⁴¹ We also performed separate t-tests on each sample, and confirmed these results with the exception that the magnitudes of the RIOCs pertaining to initiation and desistance were significantly different for the oldest sample only. Thus, even though several of the correlates of initiation, escalation, and desistance were the same, they differed in strength, especially for the oldest sample.

Finally, we analyzed the extent to which the magnitude of RIOCs for initiation covaried with the RIOCs for escalation and desistance, respectively. In other words, we sought to determine the extent to which a strong association between an independent variable and initiation coincided with a strong association between that variable and, for example, desistance. For that purpose, we correlated the RIOCs of initiation with those of escalation and desistance, respectively. The RIOCs for initiation were significantly correlated with escalation only for the middle sample ($r = 0.45$, $p < 0.05$) and marginally for the oldest sample ($r = 0.31$, $p < 0.10$), and those of escalation were not significantly related to those of desistance. The RIOCs for initiation were correlated with the RIOCs for desistance for the middle sample ($r = 0.45$, $p < 0.01$) and the oldest sample ($r = 0.56$, $p < 0.001$), but not for the youngest sample. Thus, variables that are positively related to initiation tend to be negatively related to desistance in the two older samples.

In summary, the distinction between initiation and escalation was observed for types of correlates, the magnitude of the RIOCs, and the lack of covariation between the RIOCs. The similarity between initiation and desistance was greater than between initiation and escalation or between escalation and desistance, and was greater than for older children.

V. DISCUSSION

The results of our study should be interpreted with some caution. Data were collected over a period of only two years, thus presenting a rather narrow window on offending and its correlates. Whether desistance was really permanent beyond that period remains to be seen. In addition, the classification of seriousness of offenses selected here necessarily set a limit to how finely distinc-

⁴¹ For all samples, initiation vs. escalation: $t(97) = 6.46$, $p < .001$; escalation vs. desistance: $t(99) = 7.71$, $p < 0.001$; initiation vs. desistance: $t(96) = -2.29$, $p < 0.02$.

tions between different levels of seriousness could be made. As youngsters grow older, there may be a need to distinguish more levels of seriousness.

A. PATTERNS OF OFFENSE SERIOUSNESS OVER TIME

The initiation of offending in the youngest sample, between ages 7 and 8, was remarkably high. That age group and those aged 10-11 also tended to experience an escalation in offense seriousness. This trend agrees with research conducted on slightly older adolescents.⁴² The proportion of boys who desisted was highest among the 10-11 and the 13-14 year olds. With age, there was a notable increase in those whose offense seriousness remained stable at the moderate or high levels. Either with escalation or desistance, boys were more likely to move over time to an adjacent level than a nonadjacent level of offense seriousness.

Overall, the correlation between the offense classification at S and the classification across A, B, and C dramatically increased from the youngest to the oldest samples. We interpret this to mean that as youngsters grow older, the predictability of future offense status improves considerably. This interpretation agrees with reviews of disruptive behavior in juveniles that demonstrate that as youngsters grow older they diverge—some solidify their delinquent behavior and others solidify their prosocial behavior.⁴³

B. CORRELATES OF THE DYNAMIC CLASSIFICATION OF OFFENDERS

We found strikingly similar patterns for the relationship between many variables measuring child deviance or disadvantage and the dynamic classification of offenders. The findings on the peak profile (Figure 3) covered such diverse domains as child problem behavior, educational achievement and school behaviors, some parenting behaviors, and the boy's interaction with the caretaker in the home. This implies that the higher prevalence of an attribute was associated with a worsening in offending or with stable offending at a higher level, while the presence of a lower level of an attribute was associated with an improvement in offending or with stable offending at a lower level of seriousness. Exceptions were Anxious/Fearful behaviors, Lack of Involvement with Jobs and Chores,

⁴² Le Blanc, Côté & Loeber, *Temporal Paths in Delinquency: Stability, Regression and Progression Analyzed with Panel Data from an Adolescent and a Delinquent Male Sample*, 10 CAN. J. CRIMINOLOGY 23 (1991).

⁴³ Loeber, *Development and Risk Factors of Juvenile Antisocial Behavior and Delinquency*, 10 CLINICAL PSYCHOL. REV. 1 (1990).

and the caretaker's Lax Discipline, which were not related to the dynamic classification of offenders.

One may argue that many of the variables that covaried with the dynamic classification of offenders were other child problem behaviors. We know from cross-sectional correlational studies that offending is correlated with other problem behaviors such as oppositional behavior and untrustworthiness.⁴⁴ In that sense, the present longitudinal findings extend the cross-sectional finding. They demonstrate that high levels of certain disruptive behavior problems are associated with *increases* in offense seriousness, while low levels on the same variables are associated with *decreases* in the seriousness of offending.

It is also important to note that the covariation between variables and the dynamic classification of offenders applied to non-disruptive juvenile behaviors such as Depression, Low Educational Achievement, and Low School Motivation. In addition, the profile of relationships was also observed for variables which in our measurements were very distinct from offending, such as a Negative Caretaker/Child Relationship and Poor Supervision. This covariation may underscore the possible causal nature of this last set of variables.

We found that, although the presence of many of the variables of concern (*e.g.*, family and peer variables) was as low in the Desistors as in the Nondelinquents, the Desistors tended to have elevated levels of disruptive behavior. The findings, although mostly concurrent here, suggest that the level of disruptive behaviors of the Desistors is in part the result of their *history* of prior offending. We know from Baicker-McKee's study⁴⁵ that a proportion of presumed Desistors eventually relapse and that the presence of disruptive behaviors by themselves or in conjunction with other risk factors contributes to the relapse; however, these issues need further study.

C. AGE-SPECIFIC CORRELATES

Several variables correlated equally well with the dynamic classification of offenders across the different age samples, including the

⁴⁴ Quay, *Classification*, in *PSYCHOPATHOLOGICAL DISORDERS OF CHILDHOOD 1* (H. Quay & J. Werry eds. 1979); Loeber & Lahey, *Recommendations for Research on Disruptive Behavior Disorders of Childhood and Adolescence*, in 12 *ADVANCES IN CLINICAL CHILD PSYCHOL.* 221 (B. Lahey & A. Kazdin eds. 1989); Loeber & Schmalting, *Empirical Evidence for Overt and Covert Patterns of Antisocial Conduct Problems: A Metaanalysis*, 13 *J. ABNORM. CHILD PSYCHOL.* 337 (1985).

⁴⁵ Baicker-McKee, *Saints, Sinners and Prodigal Sons: An Investigation of Continuities and Discontinuities in Antisocial Development* (1990) (unpublished dissertation, University of Virginia, Charlottesville, VA).

boys' disruptive and depressed behavior, their association with delinquent peers, and a negative caretaker-child relationship. Some of these variables may persist over long periods of time, while other variables may emerge at some point. Either way, it is possible that, once present, these variables enhance the risk of boys' offending, irrespective of their age, at least for the time frames studied here (*i.e.*, ages 7-8, 10-11, and 12-13).

We noted several shifts in the strength of relationships between variables and the dynamic classification of offenders. Physical Aggression and Withdrawal/Shyness decreased in importance over time between the middle and the oldest samples. However, other variables increased in importance over time, such as boys' negative behaviors, motivation, and attitudes concerning school, their positive attitudes to deviancy, and their association with bad friends.

It could be argued that the findings are influenced by the internal reliability of the constructs at different ages. However, judging from the Cronbach's α 's calculated for the constructs, this does not seem to have been the case. The findings agree with the Hawkins *et al.* social development model,⁴⁶ in which, over time, social influences in the home overlap with social influences from the school, and later with social influences from peers.

D. CORRELATES OF INITIATION

Many of the factors associated with the initiation of offending in this study have already been identified as predictors of delinquency. However, it was not clear whether the predictors applied to the initial steps toward offending as well.⁴⁷ This study, although not strictly predictive, confirmed that several disruptive behaviors were associated with initiation in offending, such as physical aggression, oppositional behavior, attention deficit/ hyperactivity, and several covert disruptive behaviors. Disruptive behaviors were also associated with truancy and a poor caretaker-child relationship. All these results were replicated across the three age samples. The findings on attention deficits and hyperactivity agree with other studies that show they are related to early onset and a more serious course of

⁴⁶ Farrington & Hawkins, *Prediction of Participation, Early Onset, and Later Persistence in Officially Recorded Offending*, 1 CRIM. BEHAV. MENTAL HEALTH 1 (1991); Hawkins, Lishner & Catalano, *Child Predictors and the Prevention of Adolescent Substance Abuse*, 56 NATIONAL INSTITUTE OF DRUG ABUSE RESEARCH MONOGRAPH SERIES 75 (1985).

⁴⁷ Loeber, *The Stability of Antisocial and Delinquent Child Behavior: A Review*, 53 CHILD DEV. 1431 (1982); Loeber & Stouthamer-Loeber, *Prediction*, in HANDBOOK OF JUVENILE DELINQUENCY 325 (H. Quay ed. 1987).

offending.⁴⁸

Of all the family process variables measured, negative interactions between caretakers and their children, and poor supervision and noninvolvement were significantly associated with initiation of offending. These findings underscore the importance of the interactions children have with caretakers in the emergence of offending, and confirm the importance of these sources of influence as reported in other longitudinal samples.⁴⁹

The present findings also highlight the relevance of affective (also called internalizing) behaviors (*e.g.*, withdrawn/shy behaviors and depression) as important correlates of the initiation in offending. Our results agree with findings reported elsewhere on the importance of social withdrawn and shy behaviors for subsequent substance use by youngsters and for other forms of maladjustment.⁵⁰ Other studies have reported a concurrent link between depression and conduct disorder,⁵¹ but have not demonstrated, as was shown here, that a high level of depression was associated with the initiation of offending.

Researchers have emphasized the role that peers play in inducing nondelinquents to engage in various forms of law breaking.⁵² This role is confirmed by the present findings, showing the relevance of peer variables as reported by the caretakers and the boys.

Finally, the results clarified which factors are particularly associated with an early, compared to a later, onset of offending. This is important because early onset (*i.e.*, before age 11-12) is associated with serious, varied, and frequent offending later, which has been

⁴⁸ See, *e.g.*, Farrington, Loeber & Van Kammen, *Long-Term Criminal Outcomes of Hyperactivity-Impulsivity-Attention Deficit and Conduct Problems in Childhood*, in STRAIGHT AND DEVIANT PATHWAYS FROM CHILDHOOD TO ADULTHOOD 62 (L. Robins & M. Rutter eds. 1990).

⁴⁹ Kolvin, Miller, Fleeting & Kolvin, *Social and Parenting Factors Affecting Criminal-Offense Rates: Findings from the Newcastle Thousand Family Study (1947-1980)*, 152 BRIT. J. PSYCHIATRY 80 (1988); Langner, McCarthy, Gersten, Simcha-Fagan & Eisenberg, *Factors in Children's Behavior and Mental Health Over Time: The Family Research Project*, 1 RES. IN COMMUNITY AND MENTAL HEALTH 127 (1979); Loeber & Stouthamer-Loeber, *Family Factors*, *supra* note 30; Loeber & Stouthamer-Loeber, *Prediction*, in HANDBOOK OF JUVENILE DELINQUENCY 325 (H. Quay ed. 1987); McCord, *Some Child-Rearing Antecedents of Criminal Behavior in Adult Men*, 37 J. PERSONALITY SOC. PSYCHOL. 1477 (1979).

⁵⁰ Ensminger, Brown & Kellam, *Sex Differences in Antecedents of Substance Use Among Adolescents*, 38 J. SOC. ISSUES 25 (1982); Moskowitz & Schwartzman, *Life Paths of Aggressive and Withdrawn Children*, in PERSONALITY PSYCHOLOGY: RECENT TRENDS AND EMERGING DIRECTIONS 99 (D. Buss & H. Cantor eds. 1988).

⁵¹ Puig-Antich, *Major Depression and Conduct Disorder in Prepuberty*, 21 J. AM. ACAD. CHILD PSYCHIATRY 118 (1982).

⁵² D. ELLIOTT, D. HUIZINGA & S. AGETON, *EXPLAINING DELINQUENCY AND DRUG USE* (1985).

demonstrated with this sample and in other research.⁵³ In the present study, several factors were associated with the early onset of offending (before age 12), such as the boys' high disruptive behavior, poor social and affective behavior (withdrawal/shyness and depression), association with deviant peers, and problems within the family. In comparison, the later onset of offending (between ages 13 and 14) was not significantly associated with deviant peers, but more with low school motivation, and Afro-American race (aside from the presence of disruptive behavior which was associated with initiation for all three samples).

E. CORRELATES OF ESCALATION

Some overlap occurred between the correlates of escalation and those of initiation and desistance, but the number of significant findings for escalation was lower. All positive instances, however, were limited mostly to the middle sample and in a few instances to the oldest sample, indicating a gap in our understanding about which factors are responsible for escalation in younger boys.

Correlates of escalation were particularly prominent in the area of the boys' school functioning. In addition, certain disruptive behaviors, such as the presence of physical aggression and covert disruptive acts, were also associated with escalation. Attitudinal variables showing acceptance of deviant behavior and some aspects of family functioning were also prominent.

In summary, as youngsters' seriousness of offenses increases over time, they appear to dissociate themselves from community norms of desirable behavior, they have more conflicts with schools, identify less with conventional educational goals, and experience more tension with their caretaker.

F. CORRELATES OF DESISTANCE

Several variables were associated with desistance across more than one of the samples: low social withdrawal or shyness and low disruptive behavior. In addition, motivational and attitudinal factors, as well as strict discipline, were associated with desistance in the two older samples. It remains to be seen whether these behaviors are concomitant with changes in offense seriousness or precursors of such changes.

⁵³ Farrington, Loeber, Elliott, Hawkins, Kandel, Klein, McCord, Rowe & Tremblay, *Advancing Knowledge About the Onset of Delinquency and Crime*, in 13 *ADVANCES IN CLINICAL CHILD PSYCHOL.* 283 (B. Lahey & A. Kazdin eds. 1990); Loeber, *The Stability of Antisocial and Delinquent Child Behavior: A Review*, 53 *CHILD DEVELOPMENT* 1431 (1982).

For a few variables, we observed age-specific associations with desistance. Some of the factors associated with desistance prior to age twelve concerned the boys' scholastic performance and perception of school aims, while other factors concerned his relationship within the family home (Caretaker Enjoyment of the Child). The latter continued to be of importance for desistance after age twelve and was complemented by the boys' association with nondelinquent peers. In addition, the absence of depression was associated with desistance in the older age group.

In summary, over time a shift in the factors associated with desistance occurred: early desistance was related to a decrease in other disruptive behavior and a firming of school adjustment. The role of family-related, peer-related, and affective adjustment was clearest for desistance in boys aged ten and older.

G. DO THE CORRELATES OF INITIATION, ESCALATION, AND DESISTANCE REPRESENT DIFFERENT PROCESSES?

We addressed this question in three ways, by comparing the extent that the same correlates applied to initiation, escalation, or desistance. Many of the correlates of initiation did not apply to escalation, while a few of the correlates of escalation did not apply to initiation. We interpret these findings to mean that certain variables may serve as triggers for the boys' crossing the threshold to offending, but that other factors influence whether delinquent boys will escalate in the seriousness of offenses.

Analyses comparing the strength of association between the various variables and initiation and escalation showed significantly stronger associations with initiation than with escalation. Similarly, correlational analyses showed that the RIOCs for initiation were not correlated with the RIOCs for escalation. These findings further strengthen the notion that the processes that may explain initiation and escalation are to a large extent distinct. In contrast, we found that most of the variables associated with initiation were also associated with desistance. Initiation and desistance appear to reflect the positive and negative aspects of a similar process.

VI. CONCLUSION AND IMPLICATIONS

The specification of delinquency processes is the first step toward building a firm body of empirical knowledge of the etiology of delinquency, relevant for the next generation of prevention studies. Prevention, as defined here, concerns the reduction of juveniles' initiation in offending and the reduction in the likelihood of their esca-

lating to more serious forms of delinquency. We suggest that the present results, particularly when confirmed by more extensive longitudinal findings, have a direct bearing on preventive interventions. The following are some tentative conclusions derived from the findings in the study:

- Some correlates of offending appear to be of a constant strength across late childhood and early adolescence, and may trigger off the initiation of offending at any time during that period.

- Other correlates of offending, especially those concerning school factors, appear to increase in importance over time, and will need to be incorporated in preventive programs in order to enhance their effectiveness.

- The correlates of early initiation only partly overlap with those of late initiation and, therefore, this needs to be taken into account in a prevention strategy for different age groups of boys.

- Prevention efforts will be enhanced if they address the factors associated with both initiation and escalation.

We consider the present study an initial exploration. When more follow-up data become available for analyses, we will attempt to replicate many of the current, mostly cross-sectional findings from the middle and oldest samples by means of the extended follow-up data of the youngest sample. We should also use multivariate techniques (in future analyses) to reduce and summarize the data and examine the relative importance of variables. These techniques are particularly important, because prior research has shown the cumulative effects of risk factors in producing deviant outcomes in juveniles.⁵⁴ In addition, we need to study the prospective effect of changes in the independent variables in relation to changes in offending. We anticipate that such replication and refined analyses will further identify those correlates of offending which are likely to be causal as well as the different processes leading to offending.

⁵⁴ Loeber & Stouthamer-Loeber, *Family Factors*, *supra* note 30.