

Age of Onset and Dimensions of Delinquency

Carolyn A. Smith
Alan J. Lizotte
Craig Rivera
Marvin D. Krohn
Terence P. Thornberry

Rochester Youth Development Study
Hindelang Criminal Justice Research Center
University at Albany
135 Western Avenue
Albany, NY 12222

Report Submitted to:

Office of Juvenile Justice and Delinquency Prevention
U.S. Department of Justice

October 1, 1998

Age of Onset and Dimensions of Delinquency

INTRODUCTION

Developmental perspectives in criminology take into account that delinquency is related to age and developmental changes in identifiable ways (Thornberry, 1997). An important issue within developmental perspectives is the age of onset of delinquency. Several researchers have argued that age of onset—that is, whether delinquency is initiated in childhood, or during adolescence—has important implications for understanding the causes and correlates of offending, as well as the characteristics of the criminal career later in the life course (Patterson, Capaldi, and Bank, 1991; Moffitt, 1997). Specifically, some researchers have argued that delinquents can be categorized into two general groups. The first group starts offending in childhood—they are referred to as early starters (Patterson et al., 1991) or life-course-persistent (Moffitt 1993; 1997) offenders. The second group starts offending in adolescence and they are referred to as late starters or adolescence-limited offenders.

The important point is that a distinction between offenders is made, based largely upon age of onset of delinquent offending. Age of onset, in turn, is often hypothesized to be related to several dimensions of the individual's criminal career. These dimensions include the frequency of offending, the duration of offending, including whether offending continues into adult life or is restricted to adolescence, the variety of different types of offenses committed, and the seriousness or violence of the offending.

Evaluating the extent to which onset groups differ in their delinquent propensities is important for understanding the causal factors that propel individuals into delinquency, since there is reason to believe that different causal factors may operate differently at different ages. This would have significant implications for policy and intervention, since a different set of influences and outcomes would have to be targeted at different ages. For example, early onset offenders may be more significantly affected by biological, psychological and family factors and processes. Later onset or adolescent onset offenders may be more susceptible to their social context, to peers, school, and social labeling (Moffitt, 1993, 1997; Patterson et al., 1991). Identification of

the former group may be important to the extent that interrupting their delinquency may have more payoff in terms of the amount and nature of delinquency prevented.

A precise definition of childhood or adolescent onset offenders, in terms of their actual age of onset, is difficult to construct. This is because the age ranges for 'early' and 'late' onset vary by study. On a theoretical level, early onset individuals are those who begin antisocial behavior sometime in childhood (e.g., Moffitt, 1993, 1997; Patterson et al., 1991), while late onset offenders begin delinquent activity in adolescence. In terms of empirical studies, however, early onset ranges from childhood (e.g., Loeber, Green, Lahey, Christ, and Frick, 1992) to early adolescence (see, for example, Loeber's 1982 review of the Cambridge Study), and late onset ranges from mid-adolescence to adulthood. Thornberry and Krohn (forthcoming), however, propose a slightly different way of approaching the issue. They state that age of onset should be viewed as lying on a continuum, as opposed to being a dichotomy. Drawing on data from the three projects of the Program of Research on the Causes and Correlates of Delinquency, the authors report that onset of delinquency appears to be continuously distributed. Although rare before age 9, onset "increases in a smooth function from age 9 through age 16" (p. 4). Thus, while noting that some individuals do begin antisocial behavior early, and others late, Thornberry and Krohn claim that onset should be viewed as being *earlier* or *later* (i.e., a continuum), rather than simply early or late. In this report we review the existing literature on whether earlier onset matters to the nature of delinquent careers and add to our understanding of the ramifications of this distinction for understanding dimensions of criminal activity in adolescence and early adulthood.

Whether viewed as discrete or continuous, there is general agreement that offenders who begin their offending careers earlier are the offenders who go on to have the most significant and serious criminal careers. More serious criminal careers can be thought of as unfolding along a number of dimensions including the frequency of offending, the length or duration of careers, the variety or versatility of offending, and the gravity of the offenses committed (Blumstein, Cohen, Roth, and Visher, 1986). A small empirical literature exists with respect to each of these

dimensions.

Frequency

In terms of frequency, it is generally hypothesized that early onset offenders will engage in more delinquency and crime throughout their life course (e.g., Moffitt, 1993, 1997; Patterson et al., 1991). There are several studies which have found empirical support for this hypothesis. Using data from the Cambridge Study in Delinquent Development, a longitudinal study of 411 London males, a pair of studies (Nagin, Farrington, and Moffitt, 1995; Nagin and Land, 1993) reported findings supportive of Moffitt's (1993, 1997) life-course-persistent type. Both studies identified a group consisting of 12% of the sample which showed a pattern of individual offending (based on convictions) that was high and stable from age 10 to 32 (except for a small peak at 18). This pattern was unique to this group. Related to this, in a review of Farrington's Cambridge study, Loeber (1982) pointed out that the results indicate a substantially higher level of delinquency in adult life for youths who begin delinquent involvement before age 15, as compared to those who begin after this age.

In another study, Loeber et al. (1992) examined both retrospective and prospective reports concerning the onset of disruptive child behaviors for clinic-referred male youths. The youths were separated into two groups according to their age at the time of first assessment for the study. Those in the younger group (7 to 9 years old, as opposed to 10 to 12 years old) had an earlier age of onset (measured retrospectively), and demonstrated the highest level of disruptive behavior from onset until one year after initial assessment. In another sample of males, Tolan (1987) reports that subjects with an early age of onset report a higher level of delinquent behavior and are more likely to be adjudicated.

Duration of Delinquent Career

The hypothesis here is that those offenders with an early onset of delinquency and/or antisocial behavior will desist from delinquency later, and are more likely to continue their delinquent career later into the life course in comparison to those with a later or adolescent onset. Loeber (1991) has offered support for this in reporting that early onset is one of several predictors

of continuity of antisocial behavior. The desistance rate appears relatively low in the group of offenders with early onset. Also, analyzing data from the Cambridge Study in Delinquent Development, Nagin and Farrington (1992) report an inverse association between age of onset and persistence of offending—the earlier the onset, the longer the offending—a finding which they attribute to persistent heterogeneity, or stable individual differences.

Variety of Offending

Discussing children who begin problem behavior very early in life, Loeber (1991: 394) notes that they “appear to be especially at risk for an antisocial career characterized by high rate, ‘versatile’ forms of offending (including property, violent, and other offenses), often accompanied by substance use.” However, Tolan and Thomas (1988) report a different finding regarding variety as a result of their study which involved a sample of 84 adolescent males and females, ranging in age from 16 to 18, selected from social science classes in a midwestern suburban high school. The authors find that early age of onset does not predict whether an individual will only use drugs or engage in a variety of delinquent behaviors. In other words, although there are some findings supporting the notion that earlier onset offenders commit a greater range of acts, there is less clarity about whether this range commonly includes drug use.

Seriousness/Violence

Finally, a hypothesis of the developmental criminologists is that earlier onset of antisocial and/or delinquent behavior is not only associated with a greater range of delinquent acts, but with more serious and violent offending (Moffitt, 1993, 1997; Patterson et al., 1991). As with the frequency hypothesis, there are several studies that provide empirical support for this position. For example, in the study involving clinic-referred boys discussed above, Loeber et al. (1992) found that their younger sample, who tended to have earlier onset, progressed from mild to more serious antisocial behavior more quickly than the older group. Also, Loeber (1988) has identified two paths which offenders may follow: an aggressive versatile path and a nonaggressive path. Those in the former group, in addition to other characteristics, are likely to have an early age of onset, and to engage in violent as well as other offenses. The latter group is comprised of those

youth who have a relatively late onset and display primarily non-aggressive conduct problems. In addition, using data from the Cambridge study, Farrington (1994) has reported that both troublesome and antisocial behavior between ages 8 and 10 are significant predictors of both being classified as aggressively assaultive in groups at age 18 (based on self-report) and of being convicted of violent offenses up to age 32. In a review of findings from the Denver Youth Survey, the Pittsburgh Youth Study, and the Rochester Youth Development Study, Huizinga, Loeber, and Thornberry (1994) state that early onset of antisocial behavior is related to both more serious and more extensive delinquency and drug use. Findings are not totally consistent, however. Based on interviews with 80 11- to 12-year-old delinquent children, Kruttschnitt and Dornfeld (1993) report that although age of onset predicts general levels of offending, it does not have a significant influence by itself on levels of serious offending.

In summary, there is evidence from a variety of studies that early onset is linked with later more frequent, persistent, serious, and varied offending. There is stronger evidence for longer duration of offending and more frequent offending among those who start early, in contrast to those who start later. Several of the studies use clinical assessments of conduct problems (e.g., Loeber et al., 1992), or official estimates of offending (e.g., Farrington, 1994). Designation by official agencies may produce artificial distinctions between different groups of offenders. For example, arrest may not coincide with the actual onset of offending, and it may lead, through societal reaction processes, to distinct consequences (Sampson and Laub, 1997). It is less clear that self-reported delinquency in general population samples differs among early and late offenders. There is less evidence about whether early onset offenders differ from later onset offenders in terms of the greater seriousness and greater versatility in their offending, including drug use.

Questions for Analysis

This study seeks to answer the following general questions from Rochester Youth Development Study data:

- 1) Do early onset offenders commit more crimes than later onset offenders?

- 2) Are early onset offenders more likely to persist in delinquency longer, and particularly to continue offending into early adulthood compared to later onset offenders?
- 3) Are early onset offenders more likely to engage in a wider variety of types of offenses, including drug use, than later onset offenders?
- 4) Are early onset offenders more likely to be involved in more serious and violent delinquency than later onset adolescents?

DATA AND METHODS

Sample

Data for the present investigation are drawn from the Rochester Youth Development Study, a multi-wave panel study examining the development of delinquent behavior and drug use in a high-risk, urban sample. This panel is based on an initial sample of 1,000 students selected from the seventh and eighth grades of the public schools in Rochester, New York during the 1987-1988 academic year. To ensure that serious delinquents are included in the study, we over-sampled males (75%), as well as students who lived in high arrest rate census tracts. Because the probabilities of living in a particular census tract and of selection are known, the sample is weighted to reflect the total seventh and eighth grade cohort.

Each adolescent and his or her parent were interviewed at six-month intervals over a four-and-a-half year period (Waves 1 through 9). Parental interviews were not done in Wave 9 because of funding problems, but were resumed in Waves 10 through 12. After a two-and-a-half year gap, adolescents and parents were interviewed once a year for the next three years (Waves 10 through 12). All interviews were conducted in private; most were face-to-face settings, but in later waves some long distance interviews had to be completed by telephone. Chronic truants and students who had left the Rochester schools were interviewed at their homes, as were most parents. Data on subjects were also collected from school, police, courts, and social service agencies. The Rochester project has had high rates of subject retention over the course of the study, with 85% of the subjects still in the panel 10 years after the study began. Analysis has shown that attrition has not resulted in loss of representativeness for groups of subjects who

remained in the study (Thornberry, Bjerregaard, and Miles, 1993).

The present analysis is based on data from 12 waves of interviews covering a 10-year time period from the time subjects were approximately 13 years old until they were about 22 years old. A total of 846 young adults were interviewed at Wave 12, of whom 72% were male and 28% were female. The number of subjects in the analyses presented here varies somewhat due to missing values for variables at some waves. The study design is summarized in Table 1.

(TABLE 1 ABOUT HERE)

Measures

Delinquent Outcomes

All the variables for this analysis come from our self-reported delinquency index. At each interview, subjects are asked which of a list of delinquent acts they have been involved in over the time period since their last interview, and how many acts in each category they have committed. Based on information about the most serious offense reported in each category, trained coders screened delinquency responses to remove trivial offenses that law enforcement officials would be likely to ignore. The general inventory has been divided into a number of indexes. *General delinquency* is a 30-item index which measures involvement in an assortment of delinquent activities, ranging from relatively non-serious acts such as public rowdiness to more serious ones, such as robbery or assault. *Serious delinquency* is an 8-item subset of the general index and includes both property and violent offenses, such as burglary, stealing a car, and attacking someone with a weapon. *Violent delinquency* is a 6-item subset of the general index that includes only violent acts against persons, such as hitting with intent to seriously injure. Last, *drug use* is a 10-item index measuring the use of several types of illicit drugs, ranging from marijuana to heroin.

In the analyses reported below, these outcome measures are cumulated across two distinct time and age periods. First, they were cumulated across Waves 1 through 9, a period of four-and-a-half years of mid-adolescence from the time the subjects were aged 13 to 17.5. Second, measures were cumulated across Waves 10 through 12, covering a measurement span of approximately four-and-a-half years from the time the subjects were 17.5 on average, until they

were on average 22 years of age. The second age period covers late adolescent to early adult delinquency.

There are some special issues in constructing the measures of delinquency for Wave 10. While the first nine interviews were conducted at six-month intervals, Waves 9 and 10 were separated by two-and-a-half years. To help recall, this time was divided into two periods in the interview. If the Wave 9 interview is considered month 1 and the Wave 10 interview month 30, Period 1 covered months 1 to 18 and Period 2 covered months 19 to 30. As in all our interviews, calendars noting birthdays, holidays, and other significant events were used to define these periods and to aid the respondent's memory.

The standard self-report questions were asked for Period 2 covering the 12 months immediately prior to the interview. That is, respondents were asked if they committed each act and, if so, how often. These questions initiate the annual time periods that separate the Waves 10 through 12 interviews.

Because of the slightly longer recall for Period 1, we used a different format. If the respondents indicated they had committed a particular act during that interval we used response categories to estimate the frequency of their involvement. Categories were: a) no involvement, b) 1-2 times, c) 3-10 times, d) 11-20 times, e) 21-50 times, and f) more than 50 times. In order to estimate the frequency for each item, we chose the midpoint of each category listed above: a) 0, b) 1, c) 6, d) 15, and e) 35. For the final category (more than 50 times), the median of the regular Wave 10 item for those subjects who reported a frequency greater than 50 was assigned. If no one reported a frequency greater than 50, 51 was assigned for this category.

A further set of delinquency measures was constructed based on these indices. These include *prevalence* (involved/not involved in these sets of behaviors in each period), *ever-variety* (how many different acts from total index were reported during each period), and *number of waves*—a count of the number of separate waves in which the subject reports involvement in

delinquent activities.¹ We also construct two measures of *incidence*.² These denote the number of instances of general, serious and violent delinquency, drug use and ever-variety offenses for those who remain active in Waves 1 through 9, and for those who remain active in Waves 10 through 12.

Age of Onset

Age of onset was constructed in the following manner. During their initial interview, subjects were asked if they had ever engaged in each of the 30 delinquency items. If they had, they were then asked at what age had they first done so, and this was assigned as the age of onset. If they had not engaged in a particular behavior at that point, no age of onset was assigned. If the subject then reported this behavior at one of the subsequent prospective interviews from Wave 2 through Wave 9, his/her age at the time of the interview when it was first reported was assigned as the age of onset. For each subject, the earliest age of onset for all 30 items was assigned as the age of onset of general delinquency.³

Theoretically, early onset refers to the initiation of delinquency during childhood. However, many past studies have used age 12, 13 or even later as the cutoff for early onset since there are often very few early onset cases. In our data, we can distinguish three onset categories. We use age 10 or younger as the Very Early Onset category, the lowest age we can represent with sufficient cases. Early Onset is the middle group, reporting onset at age 11 or 12, which is a group often considered as early onset offenders in most prior research. The third onset category

¹ We use Waves 3 through 12 for this analysis because some boys in the later onset group start their delinquency at Wave 1, and in a few cases, Wave 2. In order to avoid counting the onset wave as one of the waves of active delinquency, we count the number of waves from Wave 3, which is post-onset for all respondents.

² In conducting significance tests, log transformations were performed to correct for skew in the incidence data for all outcomes with the exception of ever-variety and number of waves active. In order to provide a clearer picture of the magnitude of the difference in outcomes between the different age of onset groups, however, non-transformed means are presented in the tables.

³ In a very few cases respondents reported an onset prior to age 4. These were recoded to 4 years old. As a result, 4 is the lowest age of onset in this analysis.

is the later onset group, reporting onset between ages 13 and 14. In the total panel, 22% had an age of onset of age 10 or younger (very early onset); 25% had an age of onset of 11 or 12 (early onset) and 53% had an onset of 13 or 14 (later onset). Only subjects who reported the onset of delinquency in one of these time periods (i.e., age of onset less than age 15) were included in the analyses that follow. Only 14%, or 21 girls, reported onset prior to age 13; this did not provide sufficient statistical power to conduct the planned analysis, so the analysis to follow reports only on the males in the Rochester Study. There were 123 males in the very early onset group, 103 in the middle onset group, and 239 in the later onset group.⁴

ANALYSIS

There are four main goals of the following analysis. Our first goal is to determine if age of onset is related to whether or not the respondents are involved in later delinquency (prevalence). In addition, for those who are delinquent, we want to establish whether age of onset is related to the amount of delinquency they report (incidence). Second, we relate age of onset to the duration of delinquent activity, looking at the impact of early onset on the number of different waves that subjects remain active in delinquency over the entire period being considered. It is predicted that those males who have a very early onset of delinquency will be more delinquent overall, and continue delinquency for longer. The third goal is to examine the impact of early onset on the seriousness and violence of the delinquency respondents report, since two of the delinquency measures directly relate to more serious delinquency. Related to this, but somewhat more generally, our fourth goal is to investigate whether early age of onset is linked to involvement in a greater range or variety of delinquent acts, including drug use.

The first issue for analysis is the examination of whether early onset of delinquency is associated with greater overall involvement in delinquency during adolescence. Table 2 shows the percentage of boys who commit at least one delinquent act within each of four categories of

⁴ In some cases there is a slight overlap between age of onset and the time period covered by the delinquency measurement in Waves 1 to 9. We conducted an analysis using Wave 3 as the earliest wave of delinquency—clearly following age of onset for all individuals in the analysis—and the results were the same.

delinquency—general, serious, and violent delinquency, and drug use—during at least one wave between Waves 1 and 9. In general, the pattern is for the earlier onset groups to be more likely to be active over this period than those who onset later. Most of the sample report some involvement in general delinquency over this period, so the proportions are rather similar. However, the very early onset group is more likely to report serious and violent delinquency, particularly in contrast to the later onset group. For example, 60% of the earliest onset group are still actively engaged in serious delinquency in at least one wave. This compares to 57% of those in the middle onset group, and 43% of those in the later onset group. The pattern is somewhat different for drug use: 50% of the very early onset group use drugs, as do 58% of the middle onset group and 39% of the later onset group. Although the lowest rate of drug use is still in the later onset group, the highest rate is in the middle group, rather than the earliest onset group.

(TABLE 2 ABOUT HERE)

Table 3 is similar to Table 2, however, it looks at the prevalence of delinquency during the late adolescent/early adult time frame, Waves 10 to 12. The pattern observed here is different than that found in Table 2. Whereas very early onset and early onset offenders had similar prevalence rates during their teenage years, in later adolescence and early adulthood the very early onset group has significantly higher rates than either the early or late onset groups for three out of the four delinquency indices. For example, for serious offenses the middle and late onset groups have prevalence rates of 20% and 18%, respectively, whereas 34% of the earliest onset group report serious delinquency at older ages. This same pattern of significantly higher prevalence rates for very early onset offenders than for the other two groups is observed for violent and drug offenses. Seventy-six percent of those who onset the earliest end up using drugs much later in their young adult years.

(TABLE 3 ABOUT HERE)

Another way to look at the duration and persistence of delinquency among the three onset groups is to look at the number of different waves in which they report they are active offenders. Table 4 shows the number of waves that subjects in the early, middle, and late onset groups report

delinquency in Waves 3 through 12. In general, the table shows that the early onset group has the most active delinquents for more waves.⁵ However, the significant differences are between the earliest onset group and the other two onset groups. There are no statistically significant differences between the number of active waves for the middle and late onset groups. For example, those that onset between ages 4 and 10 average 5.7 waves of general delinquency, while those that onset at ages 11 and 12 are active for 4.8 waves and those that onset at 13 and 14 are active 5.1 waves.

(TABLE 4 ABOUT HERE)

The next issue for analysis is the overall amount of delinquency in the three onset groups. Table 5 shows the incidence of general delinquency, serious delinquency, violent delinquency and drug use for the subjects, cumulated over Waves 1 through 9. Only active offenders are included in this analysis so there are estimates of individual offending rates or lambda. It also shows the ever-variety measure for each of the onset groups. For general delinquency, the table shows that those who start offending earlier engage in more delinquent acts than those who start later. For example, those who initiate delinquency earliest (between ages 4 and 10) average about 136 acts of general delinquency during this four-and-a-half year period, while the middle group reports 95 general delinquencies on average, and the later onset group has 62 acts on average. The number of general delinquency acts falls quite consistently as age of onset increases. This pattern does not hold for serious and violent delinquency and drug use. For serious and violent delinquency the middle onset group is higher than the later onset group. Drug use is highest for the early onset group, although the middle and late onset group are not significantly different, and in fact the late onset group has a slightly higher total.

(TABLE 5 ABOUT HERE)

⁵ Once again, this is not because the time at risk is longer for those that onset the earliest. The counting of active waves begins at Wave 3 for all groups, which is after onset.

The ever-variety measure shows that the earlier the onset, the greater the number of different types of delinquent acts reported. Early onset boys averaged 7.4 different types of offenses, while the middle onset group reported 5.8 different offense types, and the late onset group reported on average 4.6 different offense types in the period between Waves 1 and 9. So, very early onset leads to more delinquency for general delinquency, drug use, and ever variety measures.

One might argue that, given the findings in Table 5, differences in reported delinquency between the early onset and later onset boys would decrease in the late adolescent/early adult period. Later in the life course those who remain active may reduce their delinquency, relative to those who started offending later. To test this notion, Table 6 shows the same analysis for Waves 10 through 12. The pattern of findings at the later ages is more similar to the findings on prevalence; that is, the earlier the onset, the higher the delinquency later in the life course. However, these findings are only statistically significant for serious and violent delinquency and for the ever-variety measure. The lack of statistical significance is probably attributable to statistical power rather than the lack of a true relationship. The other pattern that is evident in Table 6 is the distinction between the very early onset group and the early and late onset groups. Although most of the differences between the very early onset group and the early onset group are not statistically significant, it is clear that the early onset group is more similar to the late onset group in their incidence and variety of offending than they are to the very early onset group.

(TABLE 6 ABOUT HERE)

DISCUSSION

In summary, and consistent with the bulk of prior research, we find that males who report the onset of delinquent behavior in childhood—prior to age 11—are more likely to offend and to be more frequent, persistent, serious, and wide-ranging offenders in relation to those who start offending in the post-elementary school years (after 11). Those who start offending early are more likely to engage in frequent delinquency and to persist in delinquency during adolescence and into young adulthood. Early onset boys are more likely to report serious and violent

delinquency at later ages, but not during the earlier time period. In addition, the earliest onset boys report a wider variety of acts, including drug use. Clearly, there is greater potential for harmful impact of delinquency for those males who start to be delinquent in the elementary years. This finding is not an artifact of youth who are involved in the juvenile justice system from early ages, since these findings are based on the boy's own report.

In general, delinquency is lower in every category for those who are in the latest onset group. More differences are found between the earliest onset and latest onset group than any other pattern of difference. The earliest onset group is more involved in delinquency, commits more delinquent acts, more varied acts, is more drug involved, and is delinquent longer on average than those who start delinquency later. Moreover, there is a tendency for the very early onset group to commit significantly more serious and violent offenses than the middle and later onset groups at later ages. This suggests that early onset boys may represent a discrete "type" of offender, certainly in relation to their later careers. These findings raise the question of whether the earliest onset offenders are affected by different causal processes. We address in another report (Thornberry et al., 1998) the issue of whether some important causal factors in fact operate differently at different ages. It is likely that those children who start early on a delinquent life course have their delinquency reinforced not only by continuities in predispositions and initial causes, but by the consequences of delinquent behavior itself. These processes include alienation from prosocial commitments such as school, becoming enmeshed in delinquent peer networks, and detachment from parental influence (Moffitt, 1997; Thornberry and Krohn, forthcoming).

Theoretically, this suggests that attention should be given to the mediating factors that promote desistance from early onset offending. Our data join the research of others to suggest that a significant proportion of those displaying early delinquent tendencies do not go on to significant adolescent delinquency (Thornberry and Krohn, forthcoming). Separating early onset, and thus "high-risk" individuals, into groups of those who do and do not continue offending later would allow us to identify protective intervening factors that distinguish the two groups. Suggested factors and processes from the research literature include increased school investment,

increased attention from parental figures, more conventional peer groups and activities, or a formal intervention (Smith and Carlson, 1997). In future work we will look at the processes contributing to resilience and "turning points" for those boys who appeared to start on a delinquent course early in life.

Findings suggest that early onset is salient in terms of the extensiveness of social damage caused by these youth, and thus point to programs of early identification and referral to prevention services. However, we have very little systematic evaluative data on the role of early intervention programs for young delinquents. Some information suggests that early identification may result in iatrogenic effects which may promote rather than interrupt a delinquent course (McCord, 1990). There is emerging research on the salience of multifaceted programs to address the needs of children whose early developmental course suggests a profile of high risk for various negative outcomes (Loeber and Farrington, 1998). Preventing the acceleration of delinquency and other co-occurring problems in very young children is clearly an important policy and program priority (Howell, Krisberg, Hawkins, and Wilson, 1995).

This study contains a number of strengths and some limitations. Limitations include the nature of the early onset data, which is largely retrospective since the panel started when high-risk youth were already by and large involved in delinquency. More information about early delinquency and its precursors would clearly be illuminating and should be available in the Rochester intergenerational study that is now underway. We have not yet identified those children who desist from early delinquency and those factors and processes that protect them. We did not evaluate in this study the role of official identification as delinquent and the impact of adjudication on acceleration or desistance of delinquency. This represents a preliminary descriptive overview of the important issue and consequences of early onset over the entire course of the current study.

The strengths of the data for examining this issue however are manifold. The longitudinal design makes it possible to investigate a large span of the adolescent and early adult life course, a critical period for the acceleration and broadening of delinquent involvement. This representative

sample represents a diverse urban population of youth in which delinquency is clearly extensive. The study contains a wide range of delinquency measures, enabling us to evaluate the extensiveness, range and seriousness of the behaviors reported to us. We plan to continue to extend our knowledge about early onset offending, its predictors, its consequences, and its turning points.

References

- Blumstein, A., J. Cohen, J.A. Roth, and C.A. Visher (1986). *Criminal Careers and "Career Criminals"*. Washington, DC: National Academy Press.
- Farrington, D.P. (1994). Childhood, adolescent, and adult features of violent males. Pp. 215-240 in L.R. Huesmann (ed.), *Aggressive Behavior: Current Perspectives*. New York: Plenum Press.
- Howell, J.C., B.J. Krisberg, J.D. Hawkins, and J.J. Wilson (1995). *Sourcebook on Serious, Violent, and Chronic Juvenile Offenders*. Thousand Oaks, CA: Sage.
- Huizinga, D., R. Loeber, and T.P. Thornberry (1994). Urban delinquency and substance abuse: Initial findings. *Research Summary Series*, Office of Juvenile Justice and Delinquency Prevention, Washington, DC.
- Kruttschnitt, C. and M. Dornfeld (1993). Exposure to family violence: A partial explanation for initial and subsequent levels of delinquency? *Criminal Behaviour and Mental Health* 3:61-75.
- Loeber, R. (1982). The stability of antisocial and delinquent child behavior: A review. *Child Development* 53:1431-1446.
- Loeber, R. (1988). The natural histories of juvenile conduct problems, substance use and delinquency: Evidence for developmental progressions. Pp.73-124 in B. Lahey and A.E. Kazdin (eds.), *Advances in Clinical Child Psychology*, Vol. 11. New York: Plenum Press.
- Loeber, R. (1991). Antisocial behavior: More enduring than changeable? *Journal of the American Academy of Child and Adolescent Psychiatry* 30:393-396.
- Loeber, R. and D.P. Farrington (1998). *Never Too Early, Never Too Late: Risk Factors and Successful Interventions for Serious and Violent Juvenile Offenders*. Newbury Park, CA: Sage.
- Loeber, R., S.M. Green, B.B. Lahey, M.A.G. Christ, and P.J. Frick (1992). Developmental sequences in the age of onset of disruptive child behaviors. *Journal of Child and Family Studies* 1:21-41.
- McCord, J. (1990). Crime in moral and social contexts—The American Society of Criminology 1989 Presidential Address. *Criminology* 28:1-26.
- Moffitt, T.E. (1993). "Life-course-persistent" and "adolescence-limited" antisocial behavior: A developmental taxonomy. *Psychological Review* 100:674-701.
- Moffitt, T.E. (1997). Adolescence-limited and life-course-persistent offending: A complementary pair of developmental theories. Pp.11-54 in T.P. Thornberry (ed.), *Developmental Theories of Crime and Delinquency, Volume 7: Advances in Criminological Theory*. New Brunswick, NJ: Transaction Publishers.
- Nagin, D. and D. Farrington (1992). The onset and persistence of offending. *Criminology* 30:501-524.

- Nagin, D., D. Farrington, and T.E. Moffitt (1995). Life-course trajectories of different types of offenders. *Criminology* 33:111-139.
- Nagin, D. and K. Land (1993). Age, criminal careers, and population heterogeneity: Specification and estimation of a nonparametric mixed poisson model. *Criminology* 31:327-362.
- Patterson, G.R., D. Capaldi, and L. Bank (1991). An early starter model for predicting delinquency. Pp.11-54 in D.J. Pepler and K.H. Rubin (eds.), *The Development and Treatment of Childhood Aggression*. Hillsdale, NJ: Erlbaum.
- Sampson, R.J. and J.H. Laub (1997). A life-course theory of cumulative disadvantage and the stability of delinquency. Pp.133-161 in T.P. Thornberry (ed.), *Developmental Theories of Crime and Delinquency, Volume 7: Advances in Criminological Theory*. New Brunswick, NJ: Transaction Publishers.
- Smith, C.A. and B. Carlson (1997). Stress, coping, and resilience in children and youth. *Social Service Review* 71:231-256.
- Thornberry, T.P. (1997). Introduction: Some advantages of developmental and life-course perspectives for the study of crime and delinquency. Pp.1-10 in T.P. Thornberry (ed.), *Developmental Theories of Crime and Delinquency, Volume 7: Advances in Criminological Theory*. New Brunswick, NJ: Transaction Publishers.
- Thornberry, T.P., B. Bjerregaard, and W. Miles (1993). The consequences of respondent attrition in panel studies: A simulation based on the Rochester Youth Development Study. *Journal of Quantitative Criminology* 9:127-158.
- Thornberry, T.P. and M.D. Krohn (Forthcoming). The development of delinquency: An interactional perspective. In S.O. White (ed.), *Handbook of Law and Social Science: Youth and Justice*. New York: Plenum.
- Thornberry, T.P., M.D. Krohn, and S. Bushway (1998). Predicting desistance using measures of onset. Report submitted to Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice. Washington, DC.
- Tolan, P.H. (1987). Implications of age of onset for delinquency risk. *Journal of Abnormal Child Psychology* 15:47-65.
- Tolan, P.H. and Thomas, P. (1988). Correlates of delinquency participation and persistence. *Criminal Justice and Behavior* 15:306-322.

Table 1
 Research Design
 Rochester Youth Development Study

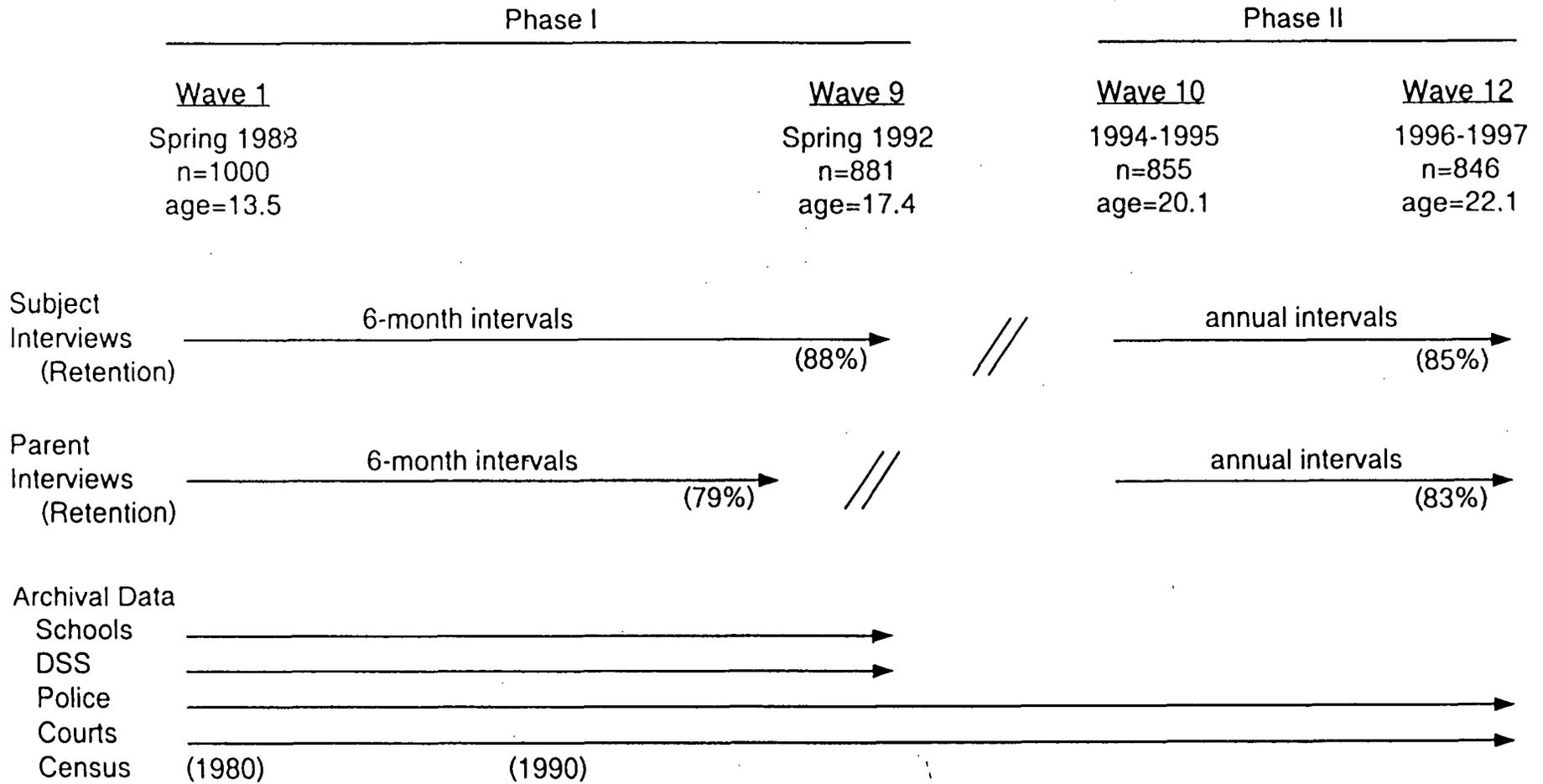


Table 2. Prevalence of Delinquency, Waves 1 through 9, By Age of Onset Group (in percentages)

	Onset Group		
	<u>4-10 Years</u> (n=109)	<u>11-12 Years</u> (n=85)	<u>13-14 Years</u> (n=210)
General*	100 ^c	98	95
Serious**	60 ^c	57 ^b	43
Violent*	88 ^c	84	75
Drug Use**	50	58 ^b	39

* = Overall-F statistic significant at the .05 level

** = Overall-F statistic significant at the .01 level

^a = 4-10 onset group significantly different from the 11-12 group

^b = 11-12 onset group significantly different from the 13-14 group

^c = 4-10 onset group significantly different from the 13-14 group

Table 3. Prevalence of Delinquency, Waves 10 through 12, By Age of Onset Group (in percentages)

	Onset Group		
	<u>4-10 Years</u> (n=98)	<u>11-12 Years</u> (n=81)	<u>13-14 Years</u> (n=201)
General*	87 ^c	78	73
Serious**	34 ^{a, c}	20	18
Violent**	55 ^{a, c}	36	35
Drug Use**	76 ^{a, c}	58	58

* = Overall-F statistic significant at the .05 level

** = Overall-F statistic significant at the .01 level

^a = 4-10 onset group significantly different from the 11-12 group

^b = 11-12 onset group significantly different from the 13-14 group

^c = 4-10 onset group significantly different from the 13-14 group

Table 4. Number of Waves Active Delinquency, Waves 3 through 12, By Age of Onset Group

	Onset Group		
	<u>4-10 Years</u> (n=123)	<u>11-12 Years</u> (n=103)	<u>13-14 Years</u> (n=239)
General	5.7 ^a	4.8	5.1
Serious**	2.5 ^c	2.0	1.7
Violent	2.9 ^c	2.3	2.3
Drug Use*	3.4 ^c	2.7	2.5

* = Overall-F statistic significant at the .05 level

** = Overall-F statistic significant at the .01 level

^a = 4-10 onset group significantly different from the 11-12 group

^b = 11-12 onset group significantly different from the 13-14 group

^c = 4-10 onset group significantly different from the 13-14 group

Table 5. Frequency of Delinquency, Waves 1 through 9, By Age of Onset Group

	Onset Group		
	<u>4-10 Years</u>	<u>11-12 Years</u>	<u>13-14 Years</u>
General**	135.6 ^c (n=109)	95.2 (n=83)	62.0 (n=198)
Serious	15.0 (n=66)	20.3 ^b (n=49)	9.6 (n=90)
Violent**	21.6 ^a (n=96)	27.6 ^b (n=71)	13.0 (n=158)
Drug Use**	174.6 ^{a,c} (n=55)	59.8 (n=49)	96.5 (n=82)
Ever-Variety**	7.4 ^{a,c} (n=109)	5.8 ^b (n=83)	4.6 (n=198)

* = Overall-F statistic significant at the .05 level

** = Overall-F statistic significant at the .01 level

^a = 4-10 onset group significantly different from the 11-12 group

^b = 11-12 onset group significantly different from the 13-14 group

^c = 4-10 onset group significantly different from the 13-14 group

Table 6. Frequency of Delinquency, Waves 10 through 12, By Age of Onset Group

	Onset Group		
	<u>4-10 Years</u>	<u>11-12 Years</u>	<u>13-14 Years</u>
General	311.8 (n=86)	235.5 (n=63)	220.3 (n=145)
Serious**	17.7 ^c (n=34)	9.5 (n=16)	5.2 (n=37)
Violent*	21.7 ^c (n=54)	10.5 (n=30)	7.1 (n=71)
Drug Use	439.3 (n=75)	325.5 (n=47)	369.0 (n=117)
Ever-Variety**	4.9 ^{a, c} (n=86)	3.7 (n=63)	3.6 (n=145)

* = Overall-F statistic significant at the .05 level

** = Overall-F statistic significant at the .01 level

^a = 4-10 onset group significantly different from the 11-12 group

^b = 11-12 onset group significantly different from the 13-14 group

^c = 4-10 onset group significantly different from the 13-14 group