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Young children who commit crime: Epidemiology, developmental origins, risk factors, early interventions, and policy implications

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Abstract

An early onset of delinquency prior to age 13 years increases the risk of later serious, violent, and chronic offending by a factor of 2–3. Also child delinquents, compared to juveniles who start offending at a later age, tend to have longer delinquent careers. This article summarizes the report of the Office of Juvenile Justice and Delinquency Prevention's Study Group on Very Young Offenders, chaired by Rolf Loeber and David P. Farrington. The Study Group, consisting of 16 scholars and 23 coauthors, worked for 2 years on preparing a report, undertaking extensive secondary data analyses, and writing chapters in different speciality areas. The report consists of a state of the art review of the developmental background of child delinquents. The report also summarizes risk and protective factors in the individual, family, peer group, school, and neighborhood that affect that development. Lastly, the report renews relevant preventive and remedial interventions in the juvenile justice system, families, peer groups, schools, and neighborhoods, and makes a case for improvement in the integration of services for child delinquents. Policy recommendations are presented to improve methods of dealing with child delinquents by juvenile justice, child welfare, and mental health agencies.

The Study Group on Very Young Offenders was chaired by Rolf Loeber and David P. Farrington. We are much indebted to the study group members and their coauthors for their extraordinary efforts to make the study group report highly informative and practical. The initial members of the study group were Barbara J. Burns, John D. Coie, J. David Hawkins, James C. Howell, David Huizinga, Kate Keenan, Darnell F. Hawkins, David R. Offord, Howard N. Snyder, Terence P. Thornberry, and Gail A. Wasserman. They were later joined by Leena K. Augimeri, Brandon C. Welsh, and Janet K. Wiig. The study group members enlisted many coauthors to help them with their chapters, including Meda Chesney–Lind, Ick–Joong Chung, Anne Crawford, Erik K. Duku, Rachele C. Espiritu, Leyla Faw, Kenneth Goldberg, Andrea Hazen, Todd I. Herrenkohl, Karl G. Hill, Larry M. Kalb, Kelly Kelleher, Gordon Keeler, Kimberly Kempf–Leonard, Christopher J. Koegl, Marvin D. Krohn, John Landsverk, David LeMarquand, Marc Le Blanc, Ellen L. Lipman, Shari Miller–Johnson, Craig Rivera, and Angela Seracini. We also owe much to our informal group of advisors, including Alfred Blumstein, Dante Cicchetti, Nancy Crowell, Bernadine Dohrn, Joan McCord, and Christy Visher. We are also grateful to many colleagues and practitioners who gave us advice, including Menke Bol, Theo Dorelijers, Hans Heiner, Eric Joy, Willem Koops, Jim Reiland, Evelyn Wei, and Cathy Spatz Widom, and to over 100 attendees at the National Conference on Juvenile Justice conference in Minneapolis, Minnesota, who in March 1999 responded to our survey on very young offenders, and the attendees of the meeting on "Delinquents Under 10: Targeting the Young Offender," in Minneapolis, Minnesota, September–October 1999. Special thanks are due to Magda Stouthamer–Loeber for her continuing support and encouragement throughout the project. The Study Group on Very Young Offenders has been sponsored by the Office of Juvenile Justice and Delinquency Prevention (OJJDP; grant 95-JD-FX-0018). Points of view or opinions in this paper are ours and do not necessarily represent the official position of OJJDP. Throughout this project we received consistent encouragement and superior counsel from OJJDP's staff, particularly Barbara Allen–Hagen, Shay Bilchik, Betty Chemers, Charlotte Kerr, and John Wilson.

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Child delinquents have a 2- to 3-fold increased risk of becoming tomorrow's serious, violent, and chronic offenders. Child delinquents also tend to have a longer delinquency career than those with a later onset of offending. For these reasons alone, child delinquents constitute a disproportionate threat to the safety and property of citizens across the nation. The main aim of this paper is to summarize the results of the Study Group on Very Young Offenders, sponsored by the Office of Juvenile Justice and Delinquency Prevention (OJJDP). The principal aims of the Study Group were to advance knowledge about child delinquents, address factors that contribute to offending starting at an early age, and show what types of interventions are effective. We define child delinquents as children who have committed a delinquent act between ages 7 and 12 years inclusive.

The Study Group on Very Young Offenders consisted of 16 scholars on juvenile delinquency and child problem behaviors. They and 23 coauthors have worked for 2 years on the preparation of a volume, entitled *Child Delinquents: Development, Interventions, and Service Needs* (Loeber & Farrington, in press), through regular meetings, special data analyses, and the writing and joint revision of the chapters. The present paper presents highlights from that volume and discusses policy implications.

Juvenile offending is an enduring phenomenon in our society, and it persists from generation to generation of juveniles. Increasingly scholars (e.g., Cicchetti, 1993) have realized that juvenile delinquency, like many other forms of child problem behaviors that wax and wane with age, can best be studied from a developmental point of view. However, scholars differ in their developmental focus and their choice of specific high-risk categories of youth. Initially, pioneering work during the 1980s and 1990s focused on chronic offenders—that is, those with at least four or five arrests or convictions (e.g., Blumstein, Cohen, Roth, & Visher, 1986; Farrington, Ohlin, & Wilson, 1986). The main rationale for this was that chronic offenders are responsible for a disproportionately large amount of crime (and especially serious crime) in communities. Although valuable, the problem with this approach is that, without screening methods, chronic offenders become recognizable only when they have accrued multiple offenses, which usually is late in their criminal careers when they have already inflicted much harm and property loss on others and possibly are beginning to deescalate and desist. It is a waste of criminal justice resources to focus on offenders who are about to stop offending.

Focusing on an earlier stage of criminal careers, Loeber and Farrington (1998) published the results of the Study Group on Serious and Violent Juvenile Offenders, which summarized knowledge about development, risk factors, and interventions for serious and violent juvenile offenders. The Study Group concluded that many of these offenders began their careers of antisocial behavior before the teenage years, but that little was known about child delinquency and few resources were devoted to the prevention either of child delinquency or of escalation in the severity of offending after the onset of child delinquency. These conclusions from the first Study Group on Serious and Violent Juvenile Offenders led logically to the second Study Group on Very Young Offenders. Thus, scientific and policy concerns about serious crime have gradually moved the main focus earlier and earlier in life.

The second Study Group focused on child delinquents. As mentioned, child delinquents, compared to juveniles with a later onset of delinquents, are at risk of becoming serious, violent, and chronic offenders, and have longer delinquency careers (Espiritu, Huizinga, Crawford, & Loeber, in press; Farrington, Loeber, Elliott, Hawkins, Kandel, Klein, McCord, Rowe, & Tremblay, 1990; Krohn, Thornberry, Rivera, & Le Blanc, in press; Loeber, 1982, 1988; Loeber & Farrington, 1998; Moffitt, 1993). The main advantage of concentrating on child delinquents is the identification of and possible intervention with children at a much earlier age, *prior to* the accumulation of multiple offenses. In addition, the second Study Group focused on persistently disruptive children, who are not yet engaged in delinquent acts but whose behav-

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ior puts them at risk of becoming child delinquents. Disruptive child behaviors are defined first as a recurrent pattern of negativistic, defiant, disobedient, and hostile behavior toward authority figures, and second as a disturbance of children's conduct lasting at least 6 months (American Psychiatric Association, 1994).

Figure 1 summarizes the developmental links between the three groups of youth that concern us most. Children showing persistent disruptive behavior are likely to become child delinquents, while child delinquents are likely to become serious, violent, or chronic offenders. In summary, although many delinquency studies have focused on adolescence when the prevalence of delinquency usually peaks, the search for the early origins of serious, violent, and chronic offending necessarily focuses on the elementary school years and even the preschool years.

Many issues surrounding early onset and child delinquency are unclear. Not all early onset delinquents become chronic offenders. Therefore, the key question is who will and under what conditions. Also, we need to know whether early onset bodes equally ill for offenders from different ethnic or racial backgrounds, and for female as opposed to male offenders. Further, what are the causes of child delinquency, and are they different from the causes of a later onset of delinquency? Given the young age of child delinquents, what types of agencies, other than the juvenile justice system, are dealing with them, and how successful are their efforts in reducing early onset offending? What are the best intervention methods for child delinquents, and what are the best opportunities to prevent delinquency in this high-risk group?

Early Problem Behavior and Delinquency

How are child delinquents legally defined?

Child delinquents are not necessarily legally defined in the same way across states in the United States (Snyder & Sickmund, 1999; Wiig, in press). If child delinquents were defined according to the age of criminal responsibility, information for 1997 shows that this was age 6 years in North Carolina, age 7 years in Maryland, Massachusetts, and New York, age 8 years in Arizona, and age 10 years in the states of Arkansas, Colorado, Kansas, Minnesota, Mississippi, Pennsylvania, South Dakota, Texas, Vermont, and Wisconsin. The remaining states do not have a minimum age of criminal responsibility for children, but according to common law the minimum age is 7 years (Griffin, Torbert, & Szymanski, 1998). Canada has a minimum age of 12 years, with a minimum age of 14 years for juveniles' referral to adult court. England has a minimum age of 10 years. In this article, we define child delinquency as offending between the ages of 7 and 12 years inclusive.

What are important distinctions between problematic children?

We are particularly interested in three categories of problematic children up to age 12 years: (a) *serious child delinquents,* who have committed one or more of the following acts: homicide, aggravated assault, robbery, rape, or serious arson; (b) *other child delinquents* (excluding serious delinquents); and (c) *children showing persistent disruptive behavior,* who are at risk of offending.

We will briefly discuss the importance of these three groups.

Serious child delinquents. It has become increasingly clear that child delinquents can commit very serious crimes, that offenders up to age 12 years constitute a surprisingly high (10%) proportion of all juvenile cases (Butts & Snyder, 1997; Puzzanchera, 1998; Snyder, in press), and that the number of arrested child delinquents increased considerably between 1980 and 1997 (Snyder, 1997, in press).

Homicide. Rightly or wrongly, serious child delinquents are increasingly featured in the news media, especially after unusual and serious crimes committed in parental homes, schools, or the community (e.g., Gegax, Adler, & Pederson, 1998; Cowley, 1998; James & Jenks, 1996; Welch, Fenwick, & Roberts, 1997), including the recent murder by a 6-

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year-old boy who fired a gun and killed a classmate in school (Barboza, 2000).

Between 1980 and 1997, 27,000 murders were committed by juveniles; in about 2% of these cases (or about 600 murders), at least one of the identified offenders was age 12 years or less. Thus, murders by child delinquents are uncommon but are still large in absolute numbers. Weapons are frequently used by child offenders: guns were used in over half of the murders committed by child offenders (Snyder, in press). In the Pittsburgh Youth Study (Loeber, Farrington, Stouthamer–Loeber, & Van Kammen, 1998), juvenile gun owners had a lower age of onset of moderately serious delinquency (shoplifting, vandalism, minor fraud) than juveniles not owning guns (average onset age 9.2 vs. 10.3 years, respectively; Drinkwater, 1998). School killings are often featured in the media, but homicide at school committed by juveniles appears very rare (Kachur, Stennies, Powell, Modzeleski, Stephens, Murphy, Kresnow, Sleet, & Lowry, 1996), and appears particularly rare for children younger than age 13 years.

There are few studies of the background of children below age 13 years who committed homicide. In the majority of these cases (59%), the homicide is the first recorded offense, and in about a third of the cases (36%) the child's guardian or teachers described the offender as a discipline problem (Goetting, 1989; see also Cornell, Benedek, & Benedek, 1987, Heide, 1999).[1] It is clear that adolescent murderers are a heterogeneous group of offenders (Benedek & Cornell, 1989; Ewing, 1990; Hardwick & Rowton–Lee, 1996; Heide, 1999). Some commit murder as part of a criminal enterprise and others because of personal conflict, often with relatives or peers (Myers, Scott, Burgess, & Burgess, 1995; Rowley, Ewing, & Singer, 1987). Homicidal victims of child delinquents are mostly younger siblings and infants (Adelson, 1972; Ewing, 1990). Child delinquents rarely commit sexual homicides (Myers, & Blashfield, 1997), and it is very uncommon for them to kill more than one person. Children under age 9 years who kill, in contrast to older youth, "do not fully understand the concept of death" and "have great difficulties comprehending that their actions are irreversible" (Heide, 1999, p. 30).

Nonserious child delinquents. Most child delinquents commit less serious forms of delinquency, such as shoplifting of items of low monetary value, or other acts for which they rarely are prosecuted (e.g., cruelty to animals, setting fires). However, for some young children less serious delinquency is a stepping stone to more serious offending (e.g., Loeber & Dishion, 1983; Lipsey & Derzon, 1998; Loeber, Wung, Keenan, Giroux, Stouthamer–Loeber, Van Kammen, & Maughan, 1993). Better screening devices are needed to enable juvenile justice officials and others dealing with child delinquents to discriminate between those who will escalate to more serious offending and those who will not (Howell, in press-a).

Disruptive children. Many youth who become serious and violent offenders have a long history of nondelinquent, disruptive problem behaviors during childhood (Loeber & Farrington, 1998; Robins, 1966). Typical disruptive behaviors are serious and persistent disobedience, frequent lying, aggressive behaviors, minor forms of theft, truancy during elementary school, and early substance use. Longitudinal studies show that a quarter to a half of these disruptive children are at risk of becoming child delinquents (Loeber & Dishion, 1983; Offord, Lipman, & Duku, in press; Tremblay, Pihl, Vitaro, & Dobkin, 1994).

In addition, already early in life, disruptive children tend to show multiple problems in a diversity of areas, including, attention-deficit hyperactivity disorder (ADHD), ungovernability in the home, poor school performance, internalizing problems (e.g., depressed mood), and, at a later point, substance use, spousal abuse, and young parenthood (Espiritu et al., in press; Farrington, 1994; Loeber, Farring-

1. In contrast, adolescent murderers tend to have a history of one or more prior arrests (Bailey, 1996; Lewis, Moy, Jackson, Aaronson, Restifo, Serra, & Simos, 1985; Myers, Scott, Burgess, & Burgess, 1995).

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ton, et al., 1998; Offord et al., in press). Moreover, child delinquents are disproportionally victims of child abuse (Howell, in press-b; Wasserman & Seracini, in press; Wiig, in press).

Epidemiology

How prevalent are child delinquents?

Child delinquency is quite common. Two inner-city studies (Denver and Pittsburgh) show that at 11–12 years of age, about 10% of boys and girls have a police contact because of delinquency (Espiritu et al., in press). The total volume of child delinquents handled in the juvenile courts is large: in 1997 an estimated 181,300 delinquents were below age 13 years at the time of the court intake (Butts & Snyder, 1997; Puzzanchera, 1998; Snyder, in press). Disturbingly, the National Longitudinal Survey of Youth in 1997 found that 7% of all American 12-year-olds reported that they had carried a handgun in the past year (Puzzanchera, 2000). In summary, child delinquents constitute a surprisingly high danger and burden for society and for the juvenile courts.

Race differences. The rate of referral of African American child delinquents to the juvenile court in 1997 was 3 times higher than the referral rate for Caucasian child delinquents (Snyder, in press; Kempf–Leonard, Chesney–Lind, & Hawkins, in press). These differences in referral rates and disruptive behavior need to be examined in the context of children's exposure to risk factors, particularly in the worst inner-city neighborhoods and with regard to the greater police patrolling and likelihood of detection in these areas.

Sex differences. The male referral rate of child delinquents to the juvenile court in 1997 was over 3 times the female rate. Over the years, however, the sex gap has been narrowing. Between 1988 and 1997, court referrals of female child delinquents increased by 69%, compared with the male increase of 26% (Snyder, in press). Sex differences in disruptive child behavior already tend to emerge after age 2 years (Loeber & Hay, 1997). Studies confirm the generally held belief that already at an early age more boys than girls show disruptive behavior, such as aggression. However, the prevalence of indirect aggression (e.g., ostracizing others and spreading malicious rumors) is about the same for each gender, and if anything slightly higher for females (Offord et al., in press). Official records and self-reports of delinquent acts show that early onset offending is more common among males than females (Snyder, in press; Kempf–Leonard et al., in press). For example, self-reports of two inner-city samples of children below age 13 years show that 7–9% of boys and 3% of girls had committed serious aggravated assaults or robberies (Espiritu et al., in press).

What are the most common delinquent acts committed by child delinquents?

In general, child delinquents commit a similar pattern of delinquent acts to older delinquents (Espiritu et al., in press; Snyder, in press). However, the proportion of juvenile arrests involving child delinquents is highest for arson (35%), followed by sex offenses and vandalism (18–19%), larceny or theft, minor assault, burglary, and forcible rape (12–14%). The proportion of child delinquents arrested for status offenses (running away from home, curfew violation, liquor law violations) is lower (about 10%), but this may reflect current practices to avoid processing children under age 13 years for status offenses. National surveys report that 6–9% of children below age 13 years commit status offenses (Espiritu et al., in press). In summary, child delinquency is common and includes serious offenses, as well as status offenses.

Are there geographic concentrations of child delinquents?

It is likely that child delinquents are not randomly distributed across the nation, but the evidence for their concentration in certain states and cities is incomplete. Child delinquents in secure juvenile facilities are un-

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equally distributed across the nation, with the highest concentrations found in Florida, Georgia, Wyoming, South Dakota, and Alaska (Snyder, in press).

It is impossible to say whether the geographic concentration of child delinquents in those states reflects the prevalence of child delinquents, availability of residential and nonresidential services, or routine judicial practices unique to those states. However, we know that juvenile homicides (and probably other serious offenses) committed by juveniles of *any* age are concentrated in large cities (e.g., Los Angeles, Houston, Chicago, Detroit, New York; see Snyder & Sickmund, 1999). Since a high proportion of serious violent offenders start their delinquency careers at an early age, it follows that child delinquents probably are also concentrated in the same locations. This would agree with findings showing that the prevalence of aggression is particularly elevated in children from the lowest income groups and concentrated in inner-city children growing up in poverty (Offord et al., in press). We know that many of the child delinquents had been highly aggressive when younger (Lipsey & Derzon, 1998; Loeber & Dishion, 1983).

Has the prevalence of child delinquents increased in recent years?

Between 1988 and 1997, the number of arrested child delinquents only increased by 6%, although the number dealt with by the juvenile court increased by 33%, showing that law enforcement agencies were increasingly likely to refer child delinquents to the juvenile court. Over two-thirds (69%) of the practitioners we surveyed said that it is now more common than in the recent past for children to become delinquent at a very young age.[2] However, a comparison of self-reported delinquency over the past 20 years does not indicate any increase by young offenders in the United States (Espiritu et al., in press). Moreover, between 1980 and 1997 the number of murders by an offender up to age 12 years remained about the same, averaging about 30 per year (Snyder, in press).

Have child delinquents become more violent?

The recorded offense pattern of child delinquents changed between 1988 and 1997. During that period arrests for violent crimes increased by 45%, arrests for simple assaults increased by 79%, and arrests for weapons law violations increased by 76%. These increases in arrests parallel the increases in these behaviors seen for older juvenile offenders. However, the increases in violence and drug abuse violations by child delinquents has received scant attention so far. The number of violence cases involving child delinquents in the courts more than doubled (up 113%), and the number of drug offenses over the period increased even more (163%; Snyder, in press). It is debatable whether these changes reflect true secular changes in society or changes in prosecution practices in the juvenile justice system. Arrests of child delinquents for property crimes decreased by 17% between 1988 and 1997 (Snyder, in press).

Development

What is the developmental context of child delinquency?

Some children engage in minor delinquent acts for excitement, adventure, or other emotions common among children. For these children, offending may be considered as part of the context of child development in which youngsters learn prosocial behaviors by trial and error. This may be the case for a propor-

2. On March 22, 1999, Rolf Loeber, David P. Farrington, Darnell F. Hawkins, Melissa H. Sickmund, and Gail A. Wasserman made presentations describing the work of the OJJDP Study Group on Very Young Offenders at the 26th National Conference on Juvenile Justice in Minneapolis. During this session, a questionnaire was given out to the audience soliciting their opinions on eight policy issues relevant to child delinquents (see Loeber, Farrington, & Kalb, 1999). Out of about 150 persons in the audience, 111 completed the questionnaire. About three-quarters were juvenile justice workers (juvenile court officers, juvenile probation officers, prosecutors, public defenders, court administrators, child advocates, etc.), while one-quarter were mental health workers (psychologists, psychiatrists, social workers, court clinicians, etc.).

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tion of the early onset offenders. However, several important points should be kept in mind: (a) many of the children who come to the attention of the police and the court because of minor delinquent acts also, unknown to the juvenile justice system, engage in more serious acts (Snyder, 1998); (b) for some child offenders, early status offenses and delinquency are stepping stones in pathways to serious, violent, and chronic offending, particularly when the status offenses first appear at a young age (e.g., Loeber & Dishion, 1983; Lipsey & Derzon, 1998; Loeber et al., 1993); (c) about a quarter to a half of children who engage in disruptive behavior are at risk of escalating to delinquent acts (Farrington, 1991; Loeber & Dishion, 1983; Offord et al., in press; Tremblay et al., 1994); (d) about a third to two-thirds of child delinquents are at risk of escalating to serious delinquency (Hawkins, Laub, & Lauritsen, 1998; Lipsey & Derzon, 1998; Loeber & Dishion, 1983), and 40–60% run the risk of becoming chronic offenders (Blumstein, Farrington, & Moitra, 1965; Kempf–Leonard et al., in press); and (e) screening procedures are needed to distinguish prospectively (rather than after the fact) between those youth whose early offending is temporary and those who will either persist in offending over time or escalate to serious offenses (Howell, in press-a).

In summary, research findings support the notion that the development of offending is part of a broader pattern of deviant development that usually starts with disruptive nondelinquent behavior (see Figure 1). Although some of the predictions may refer to similar behaviors (e.g., aggression predicting violence), some types of disruptive behaviors may also predict different types of delinquent acts. For example, research shows that boys who are aggressive by 8–9 years of age, compared to nonaggressive boys, have 5 times as high a risk of engaging in property offenses by ages 12 and 13 years (Offord et al., in press).

What are developmental pathways to disruptive and delinquent behavior?

We hypothesize that disruptive behavior, status offenses, and delinquent acts of different severity levels are different manifestations of the same "underlying" deviancy, and children differ in the extent that they progress over time on developmental pathways to serious delinquent behaviors. The term *pathway* is defined as "a common pattern of development shared by a group of individuals which is distinct from the behavioral development experienced by other groups of individuals" (Loeber, 1991, p. 98). A key thesis is that a proportion of child delinquents develop into serious and violent offenders but that individuals' pathways leading to a similar outcome (i.e., serious and violent offending) can be diverse (called equifinality; Cicchetti & Rogosch, 1996).

Empirical work by Loeber and his colleagues, initially on the three samples of the Pittsburgh Youth Study and since then replicated in several other studies, has demonstrated three pathways in male disruptive and delinquent child behavior, as shown in Figure 2 (Kelley, Huizinga, Thornberry & Loeber, 1997; Loeber, Keenan, & Zhang, 1997; Loeber, DeLamatre, Keenan, & Zhang, 1998a; Loeber, Wei, Stouthamer–Loeber, Huizinga, & Thornberry, 1999; Loeber, Wung, et al., 1993; Tolan, 1998; Tolan & Gorman–Smith, 1998; Tolan, Gorman–Smith, & Loeber, in press): (a) an *overt* pathway, starting with minor aggression, followed by physical fighting, and followed in turn by violence; (b) a *covert* pathway prior to age 15 years, consisting of a sequence of minor covert behaviors (e.g., shoplifting), followed by property damage (fire setting or vandalism) and moderate to serious forms of delinquency; and (c) an *authority conflict* pathway prior to age 12 years, consisting of a sequence of stubborn behavior, defiance, and authority avoidance (truancy, running away, staying out late at night), and which, at the highest level, concerns behaviors that can be construed as status offenses.

Only a minority of boys, especially those with persistent problem behaviors, advance to the most serious level within a pathway. Boys can advance on one or more pathways at the same time. Those with an early onset of disruptive or delinquent behavior are more likely to progress to the highest level of a pathway (Tolan, 1998; Tolan & Gorman–Smith, 1998).

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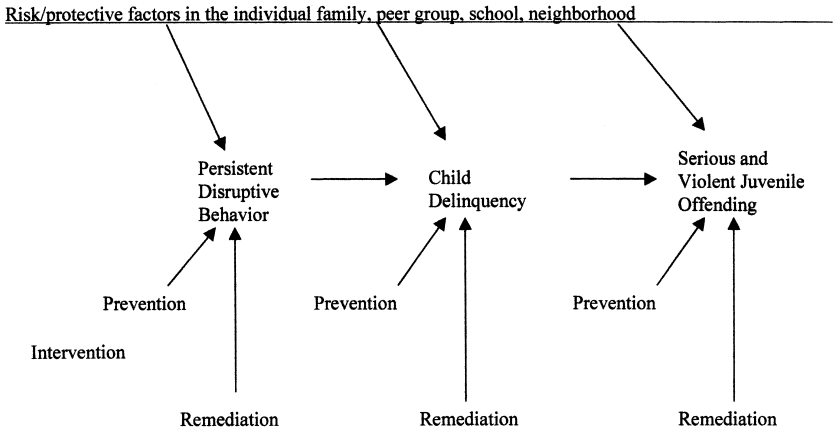


Figure 1. Relationship between risk and protective factors, development of child problem behavior, and interventions.

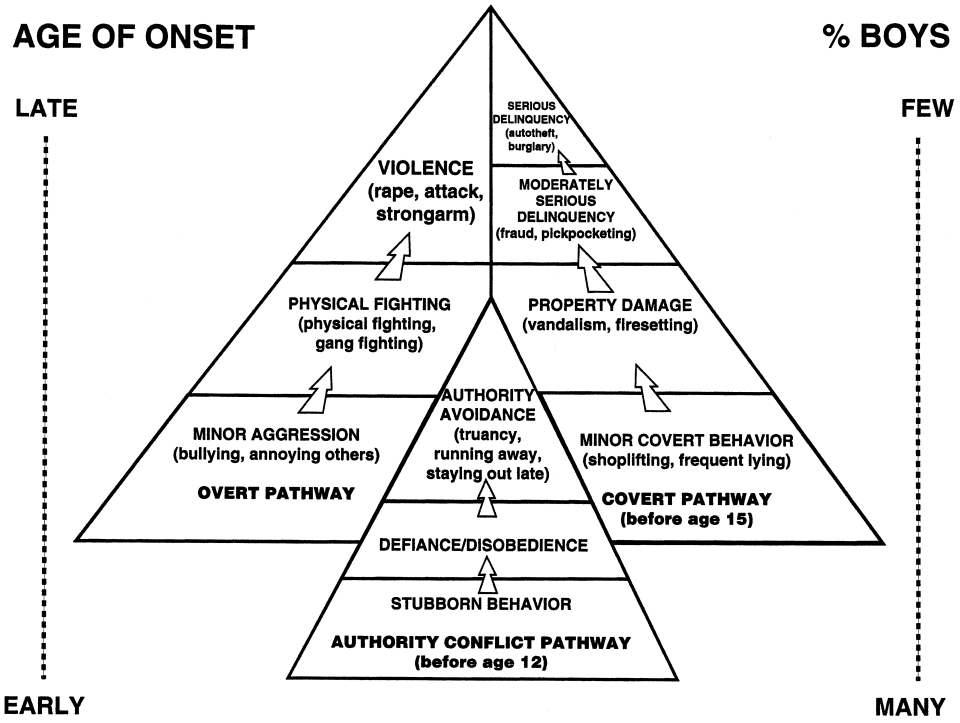


Figure 2. Three developmental pathways in disruptive behavior, status offenses, and delinquent acts (Loeber, Wei, et al., 1999).

Truancy, curfew violation, and running away from home all constitute the last step in the authority conflict pathway (Loeber et al., 1993) and denote avoidance of authority figures such as parents and teachers (Figure 2). Research findings show that boys' advancement in this pathway increases their risk of escalating in the overt or covert pathways leading to violence or serious property offenses, respectively (Loeber et al., 1993).

There are two qualitative changes that take place when children advance from the lower to the higher levels within pathways. First, there is *development of disruptive or delin-*

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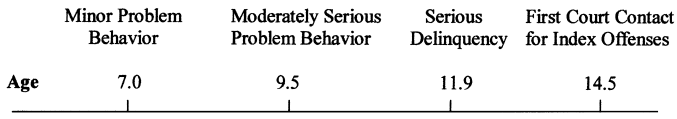


Figure 3. Age of onset of earlier problem behaviors for boys brought before the juvenile court for and index offense (Office of Juvenile Justice and Delinquency Prevention, 1998).

quent behavior starting in the home and spreading to the school and the community. Often, a developmental pathway towards serious offending starts with persistent disruptive behavior in the home, which then spreads to delinquent acts outside of the home—that is, at school and in the community. The reverse—that is, serious delinquent acts starting in the community (without prior disruptive behavior in the family home) and then spilling over into disruptive or delinquent behavior at home—appears rare. Second, there is *development from infliction of harm on relatives and peers to infliction of harm on strangers*. Typically, early disruptive behavior in the preschool period is directed at adults, especially parents and other caretakers, but often same-age and younger siblings and peers are victimized as well. For example, the majority of murders committed by child delinquents are of acquaintances and relatives. Usually during adolescence, youth start to inflict harm on strangers in the neighborhood close to the youth's home and then, as transportation becomes available, in neighborhoods further away from home.

The study of developmental pathways has shown that there is a relatively wide time window of opportunities for early intervention. For example, research (Office of Juvenile Justice and Delinquency Prevention, 1998) shows that the average age of boys first brought before the juvenile court for an index offense was 14.5 years (Figure 3). Most of these boys had a longstanding history of earlier problem behavior. The average age of onset of minor problem behavior (Step 1 in any of the pathways) for this category of offenders was 7.0 years. The average age of onset of moderately serious problem behavior (Step 2 in the pathways) was 9.5 years, while the average age of onset of serious delinquency was 11.9 years (Step 3 in the pathways). Thus, about 7 years elapsed between the onset of minor problem behavior and boys' first court appearance for an index offense. This means that there is a wide window of opportunity for intervention during the interim period. However, early intervention is preferable to prevent all the antisocial acts committed during this time period.

What are the consequences of an early onset of a delinquent career for the offenders?

There are many negative consequences for children who start their delinquency career early in life (Farrington et al., 1990). We list the most important ones:

1. It is likely that the repeated practice of disruptive behaviors and delinquent acts during a formative period of life contributes to the subsequent stability and continuation of such acts over time.
2. Desistance from offending is less likely for early onset offenders, especially for those who advance to the more serious forms of offending (Loeber, 1988).
3. Years of engaging in delinquency tend to rob youth of many opportunities to learn and practice prosocial behaviors.
4. Engaging in persistent disruptive behavior and delinquency often is associated with poor social skills, leading to major and continued disturbances in social relationships with relatives, peers, partners, and later, employers and coworkers in places of work.
5. Low interest and motivation in educational matters associated with early onset offending leads to major disruption in classrooms, exposure to remedial and often alternative special education services, and,

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eventually, to chronic truancy and early school dropout. The resulting poor educational achievement has negative effects on later employment opportunities and lifetime income.

6. Young male repeat offenders are more likely to become fathers at a young age and often are unable or unwilling to fulfill the father role or assume financial responsibilities for their partner and child. In addition, they often provide undesirable role models for their children (Wei & Stouthamer–Loeber, 1999).
7. Young aggressive delinquents have a high risk of depression and suicide (e.g., Lewis, Shanok, Grant, & Ritvo, 1983).
8. Young offenders often are at high risk of criminal victimization in the community and, as a consequence, have a relatively high likelihood of being killed or maimed for life (Loeber, DeLamatre, Tita, Cohen, Van Kammen, & Stouthamer–Loeber, 1999).
9. Early onset offenders often start using illicit substances at a young age (Le Blanc & Loeber, 1998), and children who use substances at an early age are at risk of becoming persistent substance abusers (Grant & Dawson, 1998).

In summary, early and persistent involvement in disruptive and delinquent behavior generates cumulative and cascading negative consequences for a person's life (Thornberry & Krohn, in press).

How early can we identify children at risk for child delinquency?

Some researchers have argued that we need to identify during the preschool years or in early childhood those who will later become child delinquents. Although in some ways it is laudable to conduct research on criteria that would facilitate such identification, there are several important complications attached to this strategy. The development of disruptive behavior and early forms of delinquency often takes years and is a function of juveniles' exposure to risk and protective factors during that period (see below). Thus, although some have proposed that "life-course persistent" offenders can be identified very early in life (Moffitt, 1993), this discrimination is far from perfect because many children show some problem behavior early in life. Childhood is a period in which most youth learn about what is good and bad, what is permissible and not permissible in the acquisition of goods, and how to solve interpersonal conflicts without resorting to violence. Childhood is also characterized by age-normative problem behaviors which most children give up as they grow up. Usually, in this period of trial and error learning, many children engage in problem behaviors of a relatively minor nature for a short time and, therefore, are not of major concern. The fact is, however, that currently we have few tools to distinguish between those young children who will continue with their problem behavior and those who will not (see, e.g., Walker, Severson, Stiller, Williams, Haring, Shinn, & Todis, 1988; Walker, Severson, Todis, Block–Pedego, Williams, Haring, & Barckley, 1990; Feil, Severson, & Walker, 1995, 1998). Third, it is unlikely that a single screening method would be of the greatest utility in identifying those at highest risk; instead, it is much more likely that screening methods applied in sequence over time would have a greater utility. Yet researchers are not in agreement about at what age(s) such screening should be accomplished (Le Blanc, 1998; Howell, in press-a).

What are early warning signs?

Generally, the foundations for both prosocial and disruptive behaviors are laid in the first 5 years of life (Keenan, in press). Deviations from normal developmental processes can be identified during this period. In subsequent years child behavior can undergo major changes, with some youth developing more serious disruptive and delinquent behavior and others who had an early onset of disruptive behavior eventually ceasing.

Some level of disruptive behavior is common during the preschool years, especially during the "terrible twos and threes" when many children of both sexes show high levels

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of aggression and noncompliance. However, the following are important warning signs of later problems: (a) disruptive behavior that is either more frequent or more severe than that of children of the same age; (b) disruptive behavior, such as temper tantrums and aggression, that persists beyond the first 2 to 3 years of life. However, the majority of early onset antisocial youth had a history of aggressive, inattentive, or sensation-seeking behavior in the preschool years. The reverse, however, is not true—the majority of preschoolers with behavior problems do not go on to become child delinquents.

In summary, in the case of many offenders disruptive behavior becomes apparent during the preschool years and certainly during the elementary school years (Keenan, in press). The question of "how early can we tell" is critical from a scientific as well as a policy standpoint. Specific early warning signs for the development of delinquency at a young age include overt acts, such as physical fighting, cruelty to people or animals, and not getting along with others; covert acts, such as frequent lying, theft, and fire setting; school problem behaviors including low school motivation; and substance use without parental permission (Lipsey & Derzon, 1998; Loeber, Green, Lahey, Frick, & McBurnett, 2000; Loeber, Stouthamer–Loeber, Van Kammen, & Farrington, 1991). In addition, repeated victimization plays a role in an unknown proportion of cases of child delinquents. This victimization may take the form of child abuse by adults or extended exposure to bullying by peers.

How different are early onset offenders?

Advances have been made in the theoretical underpinnings of the distinction between early and later onset offenders, particularly Moffitt's (1993) distinction between life course persistent and adolescent-limited delinquency, Patterson's coercion theory as it applies to early onset offending (Patterson, 1996; Patterson, Capaldi, & Bank, 1991), Thornberry and Krohn's interactional theory (Thornberry & Krohn, in press), and Gottfredson and Hirschi's (1990) self-control theory (for a review of these theories, see Krohn et al., in press). In addition, several other developmental theories contain aspects relevant to early onset offending: Sampson and Laub's age-graded theory of informal social control (1993), Elliott's integration of strain, social learning, and social control perspectives (Elliott, Ageton, & Canter, 1979; Elliott, Huizinga, & Ageton, 1985), and Catalano and Hawkins' Social Development Model (Catalano & Hawkins, 1996). Summaries of these theories can be found in Krohn et al. (in press) and Herrenkohl, Hawkins, Chung, Hill, and Battin–Pearson (in press).

Theoreticians such as Moffitt (1993) have argued cogently for the importance of the distinction between early and later onset of child problem behavior. However, what may be a somewhat clear concept for an individual child may not be so clear for populations of children. Are there differences evident in onset data for populations of children? And at what ages can such distinctions best be made?

First, studies do not always agree whether age 10 years or higher should be used as a cutoff to distinguish between early and later onset groups of youth (e.g., American Psychiatric Association, 1994; Farrington et al., 1990; Loeber & Farrington, 1998). Second, the onset of disruptive behaviors in populations of children is not stepwise but, instead, takes place gradually. This is revealed by the onset curves of serious delinquency for male persistent juvenile offenders in three inner-city, longitudinal studies (Loeber & Farrington, 1998). As shown in Figure 4, in Pittsburgh half of the persistent juvenile offenders experienced the *onset* of serious delinquency by ages 12–13 years. Two years later (ages 14–15 years) over 80% had begun to commit serious delinquency.

Figure 4 does not show the onset curves for disruptive child behavior (such as physical fighting) and nonserious forms of delinquency. For example, the onset curve for moderate to serious conduct disorder symptoms (e.g., theft, fire setting, cruelty to animals or people, physical fighting) in a clinic-referred sample of boys before the age of 13 years shows that by age 6 years over 40% already showed one or more of such symptoms, and this increased

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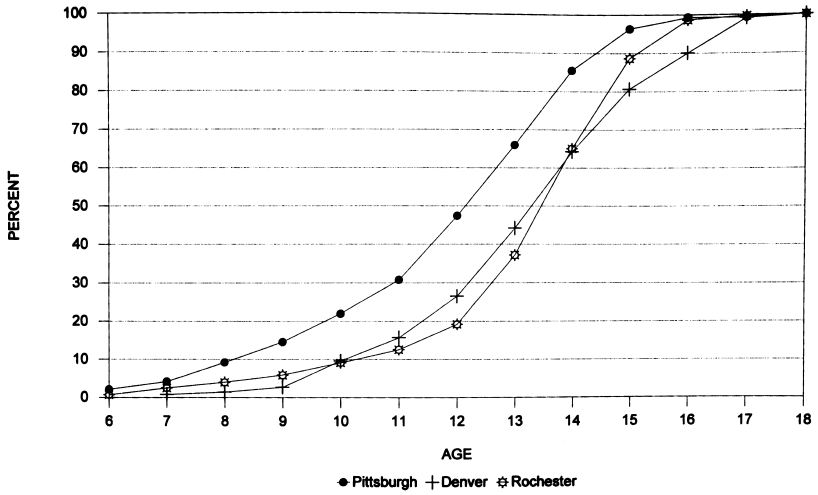


Figure 4. Cumulative onset of persistent serious and violent delinquency in three inner-city studies (Loeber & Farrington, 1998).

to almost 90% by age 10 years (Loeber, Mutchko, & Burke, 2000). In summary, research findings show that the onset of many conduct problems usually predates the onset of serious delinquency by several years (Loeber et al., 1993; Loeber & Stouthamer–Loeber, 1998; Loeber, Wei, Stouthamer–Loeber, Huizinga, & Thornberry, 1999b). Also, the findings do not support a simple dichotomy of early versus later onset in populations of children.

Population onset curves do not show individual children's trajectories in disruptive and delinquent behavior over time. Differences in the within-individual development of various problem behaviors are much better captured by the conceptualization of developmental pathways (Figure 2). The study of the onset of disruptive and delinquent child behavior is important, however. Even though the prevalence of delinquency peaks at ages 17–18 years, many of the most seriously delinquent offenders start their deviant career prior to adolescence.

Causes and Risk Factors

What are the causes of child offending?

Experts, as reported in the media, are not in agreement about the causes of serious crimes committed by child delinquents (Sleek, 1998). Many of the risk factors and predictors (and, possibly, the causes) of child delinquency tend to be partly different from the causes of juveniles' offending starting at a later age. For example, Loeber (1988), who focused on early precursor behaviors, postulated that juveniles who eventually commit both property and violent crime, compared to less serious offenders with an onset during adolescence, often begin showing the onset of conduct problems in the preschool years, and show aggressive and covert problem behaviors and hyperactive or impulsive behavior at a young age. These children often have educational problems, display poor social skills, and demonstrate poor relationships with peers and adults. Importantly, this group of juveniles has a lower remission rate than the later onset offenders. The male to female ratio is higher for early compared to later onset offenders. Further support for many of these propositions has come from several studies and one meta-analysis (see, e.g., Lipsey & Derzon, 1998; Loeber, Farrington, et al., 1998; Moffitt, 1993).

Many risk factors (listed in Table 1) are associated with child delinquency. An extensive summary of knowledge about these risk factors can be found in Loeber and Farrington (in press). That summary is inspired by Bron-

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Table 1. *Childhood risk factors for child delinquency and later serious and violent juvenile offending*

Child factors	Parents disagree on child discipline
Difficult temperament	Single parenthood
Impulsive behavior	Large family
Hyperactivity (but only when co-occurring with disruptive behavior)	High turn-over of caretakers
Impulsivity	Low socioeconomic status of the family
Substance use	Unemployed parent
Aggression	Poorly educated mother
Early onset disruptive behavior	Family members' carelessness in allowing children access to weapons, especially guns
Withdrawn behavior	School factors
Low intelligence	Poor academic performance
Lead toxicity	Old for grade
Family factors	Weak bonding to school
Parental antisocial or delinquent behavior	Low educational aspirations
Parental substance abuse	Low school motivation
Parents' poor child rearing practices	Poorly organized and functioning schools.
Poor supervision	Peer factors
Physical punishment	Association with deviant or delinquent siblings and peers
Poor communication	Rejection by peers
Poor parent–child relations	Neighborhood factors
Parental physical and sexual abuse	Neighborhood disadvantage and poverty
Parental neglect	Disorganized neighborhoods
Maternal depression	Availability of weapons
Mother's smoking during pregnancy	Media portrayal of violence
Teenage motherhood	

Note: Adapted from Loeber and Farrington (in press) and based on Hawkins et al. (1998), Lipsey and Derzon (1998), Loeber, Stouthamer–Loeber, Van Kammen, and Farrington (1991), and Loeber, Farrington, et al. (1998).

fenbrenner's (1979) conceptualization of the different spheres of influence that affect child behavior, such as the family, the peer group, and community. However, a more distinctive developmental model is preferable in which certain domains of risk factors (and possible causes) initially promote early forms of child deviancy, and in which subsequent deviant development is affected by additional domains of risk factors. Specifically, we hypothesize that the *initial* risk factors for child delinquency lie, first, within the individual child (such as impulsive behavior; see Tremblay & LeMarquand, in press) and, second, within the family (such as parents' child-rearing practices; see Keenan, in press, and Wasserman & Seracini, in press). Starting in the preschool years, and certainly from the elementary school period onward, the array of risk factors expands, because some children will be exposed to negative peer influences outside of the home (see Coie & Miller–Johnson, in press). Also during this period, some children will be exposed to additional risk factors situated within schools or in the community at large (see Herrenkohl et al., in press).

Research findings agree that no single risk factor explains serious and violent offending. Instead, studies indicate that the higher the number of risk factors, the greater the likelihood of these outcomes later (summarized in Loeber & Farrington, 1998). Second, research also suggests that the risk of later offending is dependent on the number of risk factors *and* the number of protective or promotive factors (i.e., factors associated with a positive outcome). Recent research on the Pittsburgh Youth Study confirms that this is the case for risk domains (such as the individual child and the family; Stouthamer–Loeber, Loeber, Wei, Farrington, & Wikström, in press). As shown in Figure 5, there is an almost linear relationship between the number of promotive or risk domains and the likelihood of persistent serious offending 5 years later. In the youngest sample, first studied at age 7 years, *none* of the

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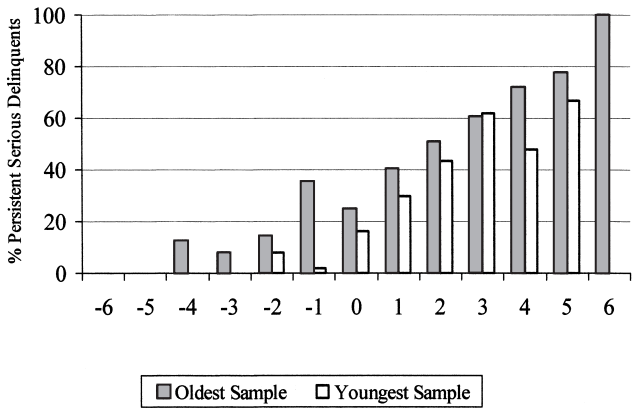


Figure 5. Prediction of male persistent serious offending as a function of the number of domains of risk and promotive factors (Stouthamer–Loeber et al., in press).

boys with a score of −2 or lower (meaning a preponderance of promotive domains) became a persistent serious offender later, compared to two thirds of those with a score of 5 (meaning a greater preponderance of risk domains). The results show that promotive domains may counteract the impact of risk domains.

Interventions

What are the opinions of practitioners about interventions with child delinquents?

Loeber, Farrington, and Kalb (1999) conducted a survey of practitioners' opinions about child delinquents. Nearly three quarters (71%) thought that there were effective ways of dealing with child delinquents to reduce their risk of offending in the future. However, only 3–6% thought that current juvenile court procedures were effective in achieving this aim, that current mental health programs were effective, or that current child welfare, dependency, and neglect programs were effective. Almost all practitioners (88%) agreed that there was an acute problem for juvenile courts concerning how best to deal with child delinquents.

Why do child delinquents pose a special challenge to agencies?

In the juvenile justice system, procedures for dealing with child delinquents are not always as straightforward as with older delinquents, and rules for interrogation and prosecution have been challenged (Geraghty, 1997; "Police Charge Methods," 1998; Wiig, in press). Child delinquents are often difficult to deal with in the juvenile courts, because of their less than average intelligence, poor understanding of court procedures, and general immaturity (Geraghty, 1997). Crucial issues are the degree to which child delinquents are competent enough to undergo the legal procedures of the juvenile court, whether they understand their own culpability, and whether they understand the reasons for sanctions.

In addition, judges' options for the disposition of child delinquents are often restricted because of characteristics of parents. More of the child delinquents, compared to later onset delinquents, come from dysfunctional families with one or more of the following: family disruption, especially a succession of different caretakers; parental antisocial behavior; parental substance use; mother's depression; and child abuse and neglect (Hennepin County Attorney's Office, 1995; Wasserman & Seracini, in press). These characteristics pose special challenges to agencies, such as the juvenile court, mental health clinics, schools, and child welfare agencies, dealing with these problematic children. Therefore, a lack of resources in the home environment increases the risk of child delinquents being institutionalized or permanently removed from the home.

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Developmentally informed interventions

Figure 1 schematically presents our model of developmentally informed interventions, consisting of three components: (a) problem behavior develops from persistent disruptive behavior to, first, child delinquency and, second, serious and violent juvenile offending; (b) this development is thought to be a function of risk and protective factors in the individual, family, peer group, school, and neighborhood; and (c) preventive and remedial interventions based on knowledge of (a) and (b) can reduce children's deviant behavior.

As shown in Figure 1, preventive interventions can be aimed, first, at the prevention of persistent disruptive behavior in children in general; second, at the prevention of child delinquency, particularly among persistent disruptive children; and, third, at the prevention of serious and violent juvenile offending, particularly among child delinquents. At the same time, remedial interventions to address current problem behaviors can be implemented at the level of either persistent disruptive behavior, child delinquency, or serious and violent juvenile offending. Both preventive and remedial interventions can be aimed at the reduction of child problem behavior *and* the reduction of risk factors in each domain of the individual child, family, peer group, school, and neighborhood. Interventions can also be aimed at promoting protective factors in each of the domains associated with prosocial behavior.

Are interventions for child delinquents taking place sufficiently early?

We saw that three key aspects that justify an early and preventive approach to child delinquency are clear from the preceding (Keenan, in press). First, the foundations for developing prosocial and antisocial behavior are established in the first 5 years of life. Second, some preschool children engage in very serious antisocial behavior. Third, in some cases disruptive behavior problems occurring as early as age 2–3 years predicted child delinquency between ages 7 and 12 years.

Is this knowledge generally translated into early preventive interventions? Overall, society appears more prepared to carry the huge costs of dealing with serious and violent juvenile offenders in adolescence and adulthood rather than to take cost-effective preventive measures in childhood (Children's Secretariat, 1999). Currently, most juvenile justice resources are spent on adolescent juvenile offenders rather than on child delinquents, and are not spent in proportion to the risk of long-term serious outcomes. The same typically applies to schools, where most of the resources of special education and behavior management are funneled into middle and high schools, rather than elementary schools or preschools. Similarly, programs for child delinquents undertaken by welfare agencies often are directed at children whose disruptive behavior is already persistent. We strongly argue that professionals in schools and those working with families should shift their perception of an "early intervention" time frame from elementary school to infancy and toddlerhood.

Of all known interventions to reduce juvenile delinquency, preventive interventions that focus on child delinquents probably will take the largest "bite" out of crime. Yet, as we will show later, the responses of institutions dealing with child delinquents (the juvenile justice system, mental health, child welfare and child protection agencies, schools, parents) often are inadequate on their own and fail to intercept the life course of high-rate offending that commonly follows child offending. In summary, a reorientation of agencies toward "early" prevention is urgently needed to redirect resources to deal with youth at a younger age. This needs to be accomplished along with interventions for serious forms of delinquency by juveniles of any age.

Effectiveness of interventions

One of the important issues is whether preventive and remedial interventions (Figure 1) are effective in reducing the likelihood of long-term serious problem behaviors (e.g., serious and violent offending) and are effective

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in reducing current disruptive behavior. We will briefly discuss interventions by each of the principal agencies that deal with child delinquents and with children with persistent disruptive behavior.

Juvenile justice. In practice, children are referred to the juvenile court if (a) their offense is thought to be sufficiently serious (which depends on the judgment of a police officer or a court intake officer); and (b) they are old enough to be held criminally responsible (this applies only to those states which have statutes to that effect). If these conditions are not met, children may either be sent back home (with or without a message to their parent; see Espiritu et al., in press) or be classified as dependent, resulting in a referral to Children and Youth Services. National figures about the prevalence of these referrals are not available.

Snyder (in press), in reviewing the response of the juvenile court to child delinquents, found that the number of child delinquency cases that resulted in formal court-ordered probation increased by 73% between 1980 and 1997, while placements of child delinquents to residential facilities increased by 49%. Juvenile courts in 1997 placed nearly 23,000 child delinquents on formal, court-ordered probation and placed another 7,000 child delinquents in a residential facility for committing a delinquent act. In addition, 18,000 child delinquents were held in secure detention facilities in 1997, an increase of 47% compared to 1988. Residential placement for status offenses is relatively more common among child delinquents compared to older delinquents. According to the Census of Juveniles in Residential Placement in 1997, 19% of child delinquents were held for a status offense (all of the above and truancy), compared with 6% of older juveniles (Snyder, in press). There are no evaluations of the effects of juvenile court actions upon the recidivism of child delinquents, nor is it clear whether some actions by the juvenile court are more effective than other actions.

Child delinquents, compared to older offenders, often have special needs and pose many challenges to the juvenile justice system. Very young children, compared to older children, are often less well equipped to comprehend their own culpability and the consequences of their actions. Also, there are large individual differences in the cognitive functioning of older children, with some, because of immaturity or low intelligence, lagging behind their age-mates. We mentioned that states differ very much in the minimum age of criminal responsibility. It is not clear how rigorously these age cutoffs are enforced or followed, and what mechanisms are in place to deal with those children who, although at or above the cutoff, are not competent in one or several ways.

Thus, child delinquents in the juvenile court have a need to be assessed for their competence before being processed through the juvenile justice system (Wiig, in press). In the court and also in their contact with the police and probation departments, child delinquents need to have an advocate, especially in case of the absence or impairment of their parents. Once program decisions are made, child delinquents need to be protected from the negative and criminogenic influences of older delinquent youth in institutions or in delinquency programs outside of institutions. The juvenile justice system also has a responsibility to protect child delinquents from physical and sexual abuse in institutions. Importantly, child delinquents have a need to benefit from the least intrusive program to reduce the risk of disruptive behavior escalating to delinquency and to reduce the risk of early onset, first-time offenders becoming recidivists.

Legislation. Several countries have new juvenile justice acts (e.g., Canada and England) or have such acts in the making (United States). Currently, the effectiveness of legislation to reduce recidivism of child delinquents is far from clear. Some politicians have suggested stiffer legal sanctions for child delinquents within the juvenile court. Others have proposed transfer of juvenile offenders to the adult court. However, in both cases it is unclear to what extent these measures are appropriate for what types of offenses, appropriate to what minimum age, and whether legal

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sanctions are effective for child delinquents. Also, proposals have been put forward to make parents more legally responsible for the lawbreaking of their children, and especially to provide sanctions for parents who do not prevent children' access to guns (Seelye, 1999). Theoretically, parents who are deficient in their supervision of their child (or practice poor child-rearing methods, such as harsh punishment) could be forced by court order or legislation to participate in parent training (Wiig, in press). The effectiveness of such compulsory methods, however, remains uncertain.

Child welfare agencies. Children with persisting disruptive or delinquent behavior, such as curfew violations, truancy, and underage drinking, can be referred to child welfare agencies. However, often these agencies appear understaffed and overloaded with child abuse investigations. When children are not physically at risk (which applies to the majority of child delinquents), they are given a low priority, resulting in a lack of programs to prevent further offending. For example, Augimeri, Koegl, and Goldberg (in press) conducted a survey of directors of child welfare in 13 provinces and territories in Canada. The results indicated that "the emphasis in child welfare is on child protection, not offending behavior *per se*. For example, child welfare assesses only the child's need of protection from parental abuse or neglect. Furthermore, we found no consistent tracking of the number of referrals child welfare receives from the police for children under 12 who commit offenses." Although such a survey appears not available in the United States, it is our impression that the same applies in this country.

Parents. Keenan (in press), in reviewing early child disruptive behaviors, concluded that such behaviors are the most common source of referral of preschool children for mental health services. Parenting practices are among the most powerful predictors of later outcomes in children and constitute opportunities for interventions (Wasserman & Seracini, in press). Effective interventions for disruptive and delinquent juveniles include parent management training (PMT), functional family therapy, and multisystemic therapy (MST), although the latter two programs still need to be evaluated with child delinquents (Alexander, Barton, Schiavo, & Parsons, 1976; Borduin, Cone, Mann, Henggeler, Fucci, Blaske, & Williams, 1995; Kazdin, 1995).

In addition, interventions targeted on known and malleable risk factors within the family have been developed and evaluated, such as marital conflict and violence and child abuse, but the effectiveness of these interventions in preventing or reducing disruptive or delinquent behavior in young children remains to be established. Stimulant medication for ADHD often can reduce both off-task behavior of children and disruptive behavior. Often such medication is used in conjunction with family intervention aimed at increasing skills both of the parents and the child. However, there is no empirical evidence that medication alone prevents delinquency in childhood or prevents serious and violent offending later (Wasserman & Seracini, in press).

Peers. Demonstrated peer interventions in schools have largely focused on the reduction of bullying and associated aggression (e.g., Conduct Problems Prevention Research Group, 1999a, 1999b). Interventions to reduce rejection by peers remain to be undertaken (Coie & Miller–Johnson, in press). Not all peer-focused interventions are beneficial. An example is programs that bring delinquent or highly disruptive children together for group therapy (Dishion, McCord, & Poulin, 1999). Knowledge about the effectiveness of routine interventions is an absolute necessity to eliminate interventions that can have deleterious effects. The more widely used interventions are, the more urgent is this knowledge. Peer interventions can be best undertaken in conjunction with other types of programs, such a training program for parents, as has been undertaken in the Fast Track Project (Coie & Miller–Johnson, in press).

Schools. Herrenkohl et al. (in press) reviewed school programs and found several interven-

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tions with demonstrated effectiveness in reducing child disruptive behavior. Examples are the Good Behavior Game (Kellam & Rebok, 1992; Kellam, Rebok, Ialongo, & Mayer, 1994), the Seattle Social Development Project (Hawkins, Catalano, Morrison, O'Donnell, Abbott, & Day, 1992; Hawkins, Von Cleve, & Catalano, 1991; Hawkins, Catalano, Kosterman, Abbott, & Hill, 1999; O'Donnell, Hawkins, Catalano, Abbott, & Day, 1995), the Child Development Program, and Fast Track (Conduct Problems Prevention Research Group, 1999a, 1999b; Greenberg, 1998). Most of the programs aim at increasing social skills and improving conflict resolution, especially by promoting skills that are incompatible with aggression. Some programs also improve teachers' teaching skills (e.g., the Seattle Social Development Project). Several programs have been evaluated for elementary and middle school students, such as the Second Step curriculum (Grossman, Neckerman, Koepsell, Asher, Liu, Beland, Frey, & Rivara, 1997) and the Responding in Peaceful and Positive Ways curriculum (Farrell & Meyer, 1997, 1998).

Community. Increasingly, interventions are aimed at reducing risk factors in communities. An example is the Communities That Care program (Hawkins & Catalano, 1992). However, the effectiveness of community programs in reducing persistent disruptive child behavior and preventing child delinquency and later serious and violent offending remains to be evaluated.

Cost–benefit analysis of programs

Welsh (in press) reviewed cost–benefit analyses of programs to prevent or intervene with children showing persistent disruptive behavior. Most intervention programs have not been evaluated using cost–benefit analysis. However, this type of analysis is needed if the benefits of the programs are to be properly evaluated. For several programs, the monetary benefits exceed the monetary costs. This is true, for example, for home visits to disadvantaged women in pregnancy and with infant children (e.g., Olds, Henderson, Cole, Eckenrode, Kitzman, Luckey, Pettitt, Sidora, Morris, & Powers, 1998), for preschool intellectual enrichment programs (e.g., Schweinhart, Barnes, & Weikart, 1993), and for child skills training (Hawkins et al., 1999). More cost–benefit analyses of prevention and intervention programs for child delinquents should be carried out.

The need for integrated services

Child delinquents, because of their misbehavior, often are seen by a greater variety of agencies than later onset offenders, including the juvenile justice system, schools, child welfare and child welfare agencies, and mental health clinics (Augimeri, et. al., in press; Herrenkohl et al., in press; Wasserman & Seracini, in press; Wiig, in press). In addition, child delinquents frequently have other problems such as learning difficulties, ADHD, mood problems, and exposure to child abuse and neglect. Different agencies also provide remedial services to child delinquents in these areas. Together, this means that child delinquents consume during their youth a disproportionately large amount of funds and resources of several agencies.

Our survey of practitioners (Loeber et al., 1999) indicated that they were almost unanimous (99%) in agreeing that more integration between agencies (juvenile justice, child welfare, mental health, schools, etc.) was needed to deal with very young offenders. However, such integrated programs are extremely rare. Of the few programs for child delinquents that came to our attention, those in the cities of Toronto and Minneapolis achieved a successful integration of services for child delinquents (Augimeri et al., in press; Howell, in press-b), but their effectiveness in reducing recidivism and preventing serious and violent juvenile offending remains to be evaluated.

There are three possible models for improving coordination between different agencies. First, an interagency coordinating council could be set up, including representatives from all the different agencies. Second, a single agency (i.e., a Community Assessment Center) could be set up to coordinate service provision from different agencies, to provide

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a single point of entry for all children, and to track the progress of all children in an integrated case management system. Third, wraparound services could be established, in which one person is designated to be responsible for coordinating all service provision for each family. The Toronto and Minneapolis projects were more like the second model, including integrated service delivery teams in the projects.

The need for a comprehensive strategy to reduce child delinquency

The need for the integration of services is all the more important because of changing manifestations of disruptive or delinquent behavior as children grow up (Figure 1). Therefore, a comprehensive strategy within and across agencies is needed. The Study Group on Very Young Offenders was inspired by OJJDP's Comprehensive Strategy for Serious, Violent, and Chronic Juvenile Offenders (Howell, 1995; Howell, in press-b; Howell, Krisberg, Hawkins, & Wilson, 1995; Wilson & Howell, 1993). The conceptual and practical thrust of this strategy lies in an integration of forces in the family and core social institutions (schools, religious institutions, and community organizations) in their roles of developing capable, mature, and responsible youth.

One of the strengths of the Comprehensive Strategy is its orientation to promote prevention as the most cost-effective approach to dealing with juvenile delinquency, and its emphasis on intervening immediately and effectively when delinquent behavior occurs, to prevent delinquents from becoming chronic offenders or progressively committing more serious and violent crimes. A second strength is that it views the juvenile justice system as a second screen, after family and core institutions, to deal with those child delinquents who cannot be handled by other systems. The Comprehensive Strategy aims to improve the juvenile justice system response to delinquent offenders through a system of graduated sanctions, based on risk and needs assessments (Howell, in press-b). Attached to these assessments is a continuum of treatment alternatives that includes immediate intervention, intermediate sanctions, community-based corrections including restitution and community service, and secure corrections including community confinement and incarceration in training schools. In summary, the Comprehensive Strategy offers a promising approach to integrate the efforts of different institutions in society in their efforts to prevent and deal with child delinquents effectively.

Are there effective screening methods to identify high risk child delinquents?

Our practitioner survey indicated that the vast majority (85%) agreed that better screening instruments were needed to discriminate between child delinquents who are at high risk of becoming serious and violent juvenile offenders and those who are not. Currently, a few screening methods for child delinquents are available, but, although they are based on known risk factors, their predictive utility remains to be evaluated (Howell, in press-a). One of the most promising is the EARL-20B, developed in Toronto, which is an empirically based screening instrument constructed to "red flag" certain areas of the child and family's life for services, help match services with the child's level of risk, and promote multidisciplinary team assessment of the risk of aggression and violence (Augimeri, Goldberg, & Koegl, 1999). More research is needed on the development of screening instruments to identify child delinquents who are likely to escalate in the future. It is important to establish how early and how accurately future serious and violent juvenile offenders can be predicted.

Policy Implications

Child delinquents constitute a population not usually recognized as needing services to prevent them becoming tomorrow's serious, violent, and chronic offenders. The Study Group's work has clear implications for policymakers on town, city, county, state, and federal levels. The policymakers referred to here are those who can influence the day to day and long-term operation of agencies or their funding to maintain, improve, or create new programs.

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The Study Group indirectly also addresses the "frontline" workers who everyday deal with child delinquents and children with persistent disruptive behavior, and whose voices and concerns should be heard by policymakers.

The Study Group focused on three interlinked categories of children, who should receive *more attention* from policymakers: (a) very serious offenders at ages 7–12 years (committing homicide, robbery, rape, aggravated assault, or serious arson); (b) identified offenders at ages 7–12 years (excluding very serious offenders); (c) children with persistent disruptive behavior up to age 12 years who are at risk of offending but who have not been identified as offenders.

There are several key reasons why policymakers should be concerned about child delinquents and children with persistent disruptive behavior: (a) child delinquents are a significant public health risk, (b) better information is needed about child delinquents, (c) child delinquents are highly costly to taxpayers and society, and (d) early intervention with child delinquents is essential. We will briefly discuss each of these points.

Child delinquents are a significant public health risk

Child delinquents and children with persistent disruptive behavior constitute a serious public health risk of a magnitude that is directly comparable to other, more widely recognized public health risks. As mentioned, child delinquents, compared to later onset offenders, have 2–3 times the risk of becoming tomorrow's serious offenders. To put this in perspective, this risk is about the same as that of adults developing coronary heart disease when they have high blood pressure (Gordon & Shurtleff, 1973, cited in Kahn & Sempos, 1989). To return to child problem behavior and risk factors, Stouthamer–Loeber et al. (in press) found that children with three risk domains more than protective domains, compared to children with a balance of fewer risk domains, have an 8-fold increase in the likelihood of becoming a persistent serious delinquent in adolescence.

In summary, the risk of some children becoming serious offenders is as high as other more widely known public health threats. What is different is that such risks for children are not general public knowledge and, consequently, are rarely acted on to prevent the development of serious, violent, and chronic offending.

Better information is needed about child delinquents

The question is whether we as a society have the information about child delinquents that is needed to reduce this pervasive social problem. Such knowledge is crucial for the planning of services for child offenders at an early stage in children's delinquency careers. Specifically, information addressing the following questions is important: Are child delinquents included in national, regional, or citywide surveys of offenders or victims? How common are very serious child delinquents? Are they qualitatively or quantitatively different from other child delinquents?

Currently, we know less about children in the United States than about farm animals. Information about the numbers of animals (such as cattle, pigs, sheep, and goats) and their offspring is collected monthly and is readily available on the World Wide Web for each state and for the whole country (http://jan.mannlib.cornell.edu/reports/nassr/livestock/pct-bbc/). In contrast, the Study Group noted the absence of annual surveys of the prevalence of persistent disruptive children in elementary schools. In addition, there appears to be no consistent tracking of the number of referrals child welfare offices receive from the police for children under 12 years of age who commit delinquent acts. On the other hand, annual police reports of juvenile delinquency are available. However, it is not clear how accurate and comprehensive this information is collected on child delinquents because of differences among jurisdictions in the minimal age of criminal responsibility of children and, possibly, differences in police recording practices of delinquent acts committed by children.

There is an urgent need for policymakers to step forward and insist on informing our

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society in a timely fashion about (a) the prevalence of child delinquency and persistent disruptive behaviors, (b) the proportion of such children who receive services for their problem behaviors, (c) the proportion of risk factors for these children that are routinely targeted for intervention, and (d) the dissemination of effective and replicated interventions.

Child delinquents are highly costly to taxpayers and society

Child delinquents tend to be highly costly to society because of the number of interventions they receive from different agencies, such as special school services, services by child welfare agencies, mental health agencies, and family counseling services. Child delinquents are likely to receive service from the *majority* of agencies dealing with children. Although not all of these children are engaged by all of these services at the same time, many of the young problematic children require the attention and intervention of a succession of several of the agencies.

Given the barriers that often exist between different agencies and given poor data sharing among agencies, it is highly likely that assessments are duplicated. Also, many practitioners complain about the lack of an integrated and coordinated approach by multiple agencies trying to deal with the multiple problems of child delinquents. Although precise figures are needed, the cost of unintegrated and uncoordinated services must be higher than that of integrated services. Also, the effectiveness of unintegrated services can be expected to be lower than that of integrated services, especially when well-planned and evaluated services are used.

The other major aspect of cost is the fact that 6 in 10 child delinquents become later chronic offenders (Blumstein, et al. 1985). We know that the cost to society of a single high-risk youth engaging in 4 years of offending as a juvenile and 10 years as an adult ranged from $1.7 to $2.3 million (in 1997 dollars; Cohen, 1998). Given that many of these high-rate offenders start their delinquent and disruptive career early in life, we can safely assume that the cost to society of child delinquents is considerable.

Early intervention with child delinquents is essential

Currently, there is a whole array of effective interventions to reduce persistent disruptive child behavior and early onset delinquency. Also, there are well-tested interventions to prevent delinquent juveniles from escalating to serious, violent, and chronic offending. Much needed, however, are evaluations of well-tried integrated programs for child delinquents, such as the ones developed in Minneapolis and in Toronto (Howell, in press-a).

Policymakers tend to fund more plentiful programs for adolescent than for child delinquents, and for programs that confine serious adolescent offenders in costly institutions rather than prevent high-risk children from becoming tomorrow's incarcerated offenders. We do not imply that adolescent delinquents should be ignored and that all the attention and funds should be given to child delinquents. Instead, we make a case for a more effective balance of resources so that the roots of adolescent serious delinquency can be addressed better in childhood than is the case now.

Unfortunately, policymakers appear rarely cognizant of the efficacy and cost effectiveness of alternative interventions. We find that very often policymakers do not choose to fund prevention methods that can benefit juveniles in general, and taxpayers and citizens in particular. As a parallel, nowadays no policymaker in his or her right mind would argue that an optimal public health strategy to deal with nicotine addiction is the removal of a cancerous lungs in large numbers of affected smokers. Fortunately, prevention strategies have been developed and are now widely endorsed and enforced. The same type of strategies that are applied to smoking and other public health risks should be undertaken now to prevent serious and violent juvenile delinquency by focusing on early risk factors associated with child delinquency and persistent disruptive child behavior. In more and more communities, the increase in the number of

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child delinquents (and disruptive youth) is reaching the level of critical mass—the point at which system professionals and policymakers realize that the problem has become too large to be ignored and that special programs are needed. The time for action is now.

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