

## Risk Factors and the Development of Disruptive and Antisocial Behaviour in Children

*Although some advances have been made in the treatment of antisocial behaviour, many professionals acknowledge the difficulty of turning youngsters around once their behaviour has become serious. Moreover, improved youngsters sometimes relapse after they are released from structured therapeutic environments. <sup>(1)</sup> This paper summarizes knowledge of developmental and risk factors that influence the course of antisocial and delinquent behaviour over time.*

### Risk Factors for Later Antisocial Child Behaviour

The term "risk" as used here has two elements. First, it implies that a child has been exposed to a risk factor, for example, delinquent acts by peers. Second, it implies that this exposure increases the likelihood that there will be a negative outcome, such as delinquency. Risk factors refer to earlier events, including children's early problem behaviour, that influence a later outcome, but this does not necessarily mean that the risk factor causes the outcome.

Overall, causation can be best demonstrated through experimentation, but there is limited opportunity for proper experimental research on antisocial child behaviour. Nevertheless, reviews of available intervention research<sup>(2)</sup> have found that when parents were trained to improve their poor child-rearing practices, aggressive child behaviour often decreased significantly. Moreover, if family influences have a causal effect, one can expect that more than one child in the family will be affected. This is borne out by research findings showing that antisocial behaviour is common among siblings of a known antisocial child.

### The Development of Different Manifestations of Problem Behaviours

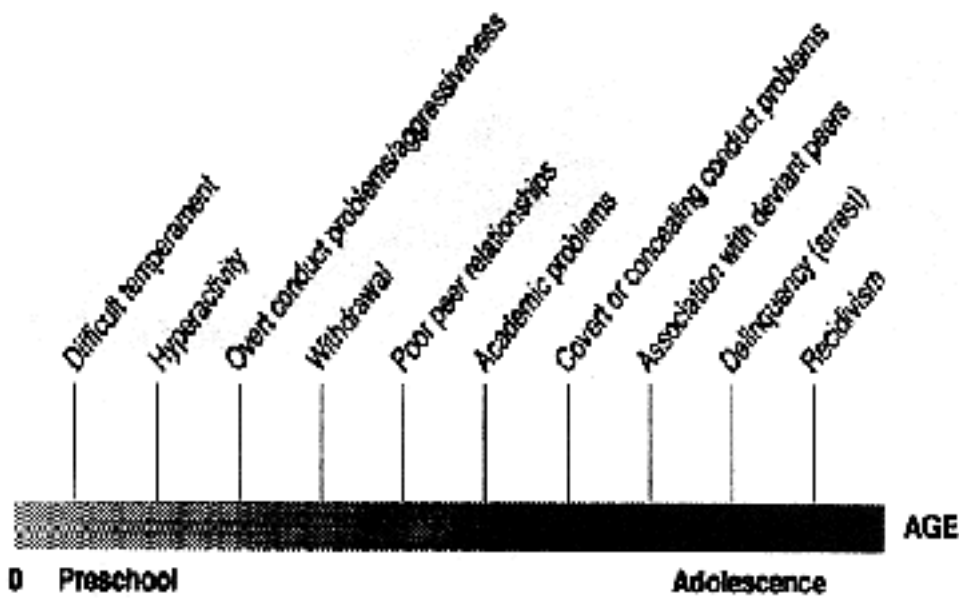
Disruptive, antisocial and delinquent behaviours can be a variety of acts that may vary in seriousness and may or may not violate criminal laws. What is striking is that the behaviours can present themselves in so many different forms at different ages.<sup>(3)</sup> Figure 1 shows the different manifestations of these behaviours in childhood and the approximate order in which they may occur.

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## Figure 1

**Figure 1**

**Approximate Ordering of the Different Manifestations of Disruptive and Antisocial Behaviours in Childhood**

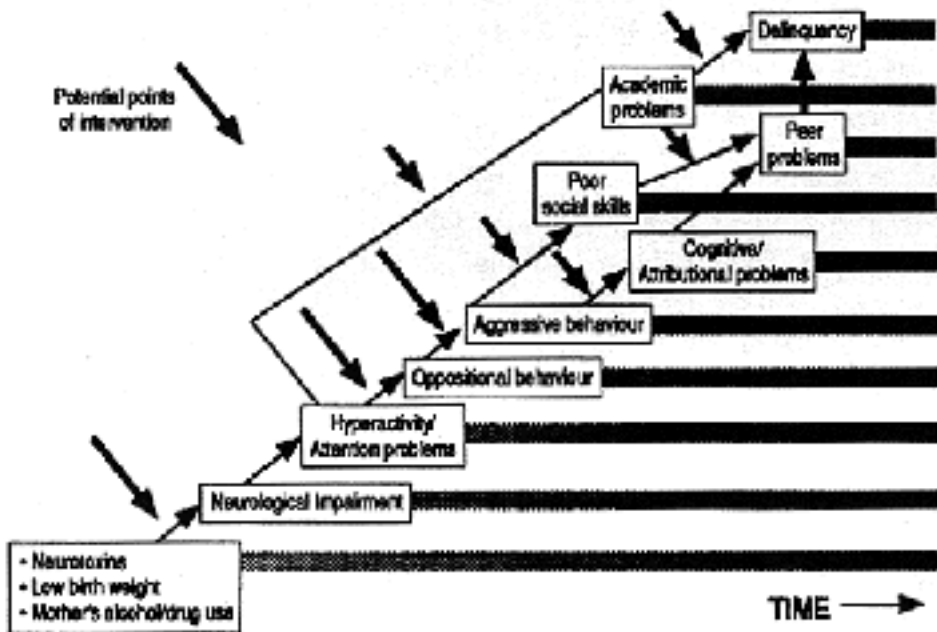


Even though disruptive and antisocial behaviours are presented differently at different ages, they may continue over time. This implies that, to some extent, those with disruptive problems at an early age are the same individuals who display problem behaviour of a different kind at a later age.

Rather than the different problem behaviours replacing one another as a child ages, they may be thought of as being "stacked." Figure 2 shows the hypothesized stacking of problem behaviours in a hyperactive and inattentive youngster who has been exposed to unfavourable conditions. Early risk factors associated with later hyperactivity and inattentiveness include exposure to neurotoxic substances (such as lead),<sup>(4)</sup> early malnutrition,<sup>(5)</sup> low birth weight,<sup>(6)</sup> and mother's substance use during pregnancy.<sup>(7)</sup>

**Figure 2**

**Figure 2** Hypothesized Maximum Developmental Sequence of Stacking of Problem Behaviours in Hyperactive/Inattentive Youngsters



These factors likely result in some neurological damage or impairment. Such a youngster is at risk of developing negative behaviour, including aggressive acts. These are often accompanied by poor social skills and cognitive problems that lead such youngsters to perceive more threats to themselves in the social environment (and therefore to be more aggressive) than other youngsters.<sup>(8)</sup>

The combination of aggression, poor social skills and cognitive problems predisposes such a child to poor peer relationships and rejection by peers. In addition, the impulsiveness and attention problems associated with hyperactivity put such a youngster at risk for underdeveloped reading abilities and academic failure.<sup>(9)</sup> Truancy may result and, coupled with other deficits, probably increases the likelihood that a child will initiate delinquent acts.

In an extreme form, the developmental stacking would include all of the problem behaviours listed. However, less extensive stacking is more common. Few children progress to the most serious levels or accumulate the greatest variety of behaviours. More often, youngsters follow this sequence of deviant behaviours to a lesser degree, reach a plateau or reverse to a less serious level.

### Empirical Evidence for Risk Factors in Early Child Behaviour

Some of the behaviours of youngsters are clear risk factors for later delinquency.<sup>(10)</sup> Among the strongest predictors of delinquency in boys are aggression, drug use and stealing. Less powerful, but still important predictors are truancy, lying and low educational achievement.

Studies agree that there is considerable continuity of antisocial behaviour over time, not only between early aggression and later aggression,<sup>(11)</sup> but also between different manifestations of antisocial behaviour, such as early aggression and later theft.<sup>(12)</sup>

Prediction is only one way of examining the relationship between risk factors and delinquency. It is equally important to look back to determine what percentage of offenders had a particular behavioural problem early in life: for example, to what extent have violent offenders been highly aggressive as youngsters? Loeber and Stouthamer-Loeber<sup>(13)</sup> summarized the available studies<sup>(14)</sup> and concluded that 70% to 90% of violent offenders had been highly aggressive when young.

### Patterns of Early Precursors

The discussion so far has concerned specific behaviours as precursors to later delinquency. Particular **patterns** of such behaviours are important too, both for risk exposure and risk identification. The patterns of frequency, variety, multiple settings and early onset are related to later deviancy.

The higher the **frequency** of an early behavioural problem displayed by a child, the greater the risk of later delinquency. Similarly, this risk increases with the **variety** of early behavioural problems.

The third pattern concerns whether the problem behaviour occurs in only one **setting** or several settings. Children are less at risk for later delinquency when they misbehave only in one setting than when their problem behaviour occurs in other settings as well.

Another important pattern refers to the **onset** of the problem behaviour. Early delinquent activities by boys and substance use by both boys and girls predict a high rate of offending and serious substance use, respectively.<sup>(15)</sup>

Some of the above patterns are interrelated: individuals scoring high on one usually score high on others.<sup>(16)</sup>

### Attention Deficit and Hyperactivity

Some children who are at risk for delinquency are much more active than others and have difficulty sitting still, finding it hard to control their impulses and to pay attention. This hyperactivity, impulsiveness and attention problem is referred to here as HIA.

Children rating high on HIA with few or no behavioural (conduct) problems are less at risk for later delinquency, but they may be at risk for such other problems as alcoholism.<sup>(17)</sup> However, when children display both HIA and conduct problems early in life, there is a very high risk of later delinquency.<sup>(18)</sup> Hyperactivity and its associated behaviours may act as a catalyst for the persistence of behavioural problems.<sup>(19)</sup>

Recent work has focused on the attention problems of known delinquents.<sup>(20)</sup> The cognitive handicaps of certain delinquents may slow down their learning not only of academic skills but also of prosocial behaviour and moral development.

## Some Biological Risk Factors

The HIA complex may be due to biological and genetic differences in children, but much more research is needed to clarify this. The problem is that since HIA often occurs in conjunction with conduct problems, it is difficult to distinguish causal factors unique to each.

Farrington and associates addressed this problem in the Cambridge Study in Delinquent Development, which followed boys from ages 8 to 24. The authors found that "HIA was particularly related to criminal parents, low intelligence and large family size, while C(onduct) P(roblem) was particularly related to poor supervision and poor parenting."<sup>(21)</sup>

These findings coincide with those of Loney and Milich<sup>(22)</sup> in the United States and McGee, Williams and Silva<sup>(23)</sup> in New Zealand. The conclusion is that HIA is much more closely associated with biological factors, while conduct problems, unlike HIA, are uniquely linked to socialization processes within families. Further verification and qualification of this conclusion are needed, however.

Other biological factors have been examined in recent years. Magnusson and colleagues<sup>(24)</sup> found that early onset of menarche in girls was associated with a higher rate of deviancy than later onset of menarche. The higher norm-breaking behaviour in the girls who matured early, however, tended to occur only when they associated more with older girls. It was not observed for girls who did not have such friendships.

Another important biological factor possibly involved in deviancy is the presence of toxic substances. This may retard or negatively influence neurological development, especially during the preschool years when the central nervous system matures.

Needleman and Bellinger<sup>(25)</sup> found that even low levels of lead could have dramatic effects on children. Those with high lead content were more distracted, hyperactive, impulsive and easily frustrated and had difficulty following simple instructions. Overall, the percentage of children who were functioning poorly was three times higher for the high lead group than for the low lead group. These findings have spurred increased awareness of the dangers of exposing children to even small doses of lead and other potentially toxic metals.

The reason for elaborating on these findings is to alert the reader to two important points. First, differences among children (in hyperactivity, impulsiveness or intelligence, for example) are sometimes interpreted as being the result of biological or genetic factors. However, these differences can also be caused by exposure to neurotoxic substances and by deficits in the children's social environment.

Second, even when successive generations of people show similar deviant behaviour (often interpreted as evidence of genetic effects), the explanation could be that all generations were exposed to the same persisting neurotoxins in the environment.

## Academic Problems

One study comparing the academic performance of delinquents and controls showed that, by second grade, 45% of the delinquents were behind in reading and 36% in writing.<sup>(26)</sup> Later problem behaviour such as drug use (often coupled with truancy) is known to be related to dropping out of school.<sup>(27)</sup>

In addition, Friedman, Glickman and Utada<sup>(28)</sup> found the severity of students' earlier drug use predicted failure to graduate. Incomplete schooling is often associated with disadvantages in the job market and frequently leads to higher unemployment. Together with preexisting criminal tendencies, this may increase the risk of subsequent delinquent involvement.<sup>(29)</sup>

## Social Risk Factors

Some risk factors are in the child's social environment - the family and peer group. Loeber and Stouthamer-Loeber<sup>(30)</sup> summarized studies in these areas. Research indicates that factors in the family are among the best predictors of later delinquency in offspring. Among these were parental child-rearing practices, such as supervision, and combinations of familial handicaps. Parents' non-involvement with their children, parental criminality, aggressiveness and deviant peers were moderately strong predictors. Weaker predictors were poor discipline, parental absence or broken home, socio-economic status and poor parental health.

Some family factors likely have a much more long-ranging effect than others. For example, a lapse in parental supervision for, say, a few weeks is less likely to lead to delinquency in youngsters. However, an extended period of poor supervision may increase the risk.

The present emphasis on family factors should not be misinterpreted. Many other social factors, such as peer influence, probably play an important role in delinquency. They are not emphasized here partly because work on their role in causing delinquency is not as far advanced.<sup>(31)</sup>

## Developmental Paths Toward Different Antisocial Outcomes

Various antisocial outcomes can develop from different paths of behaviour. Similarly, different paths apply to different individuals. The evidence for this is complex and incomplete. The following summary, therefore, provides merely a broad outline, serving as a base for further research.

Antisocial behaviour patterns in adulthood are not all the same. Studies of psychopathology identify the following groups:

- the versatiles - those who engage in violent and property crime with or without drug offences or drug abuse;
- exclusive property offenders - those who engage in property crime only, with or without substance offences or drug abuse; and
- exclusive substance abusers.- those who engage in substance abuse only (and may have been arrested as a result), but who do not substantially engage in criminal acts.

Loeber,<sup>(32)</sup> using available evidence, concluded that each of these three antisocial outcomes develops from a different path.

### The Aggressive/Versatile Path

Individuals on this path have the highest likelihood of becoming versatile offenders. Typically, behavioural problems begin early, particularly in the preschool years. Youngsters develop aggressive and non-aggressive covert behaviours (such as truancy, substance use, stealing), and many show attention problems, impulsiveness and hyperactivity. They are more likely to have impaired social skills and poor relationships with both adults and peers. Their problem behaviour is often not confined to just one setting, the home environment, but also occurs in school. The combination of disruptive behaviour in school and attention problems puts them at risk for academic frustrations and failure in school, which in turn increase their risk of dropping out of school.

Youngsters on this path are most likely to develop new problem behaviours and less likely to stop old ones, especially when they have advanced to the more serious behaviours. Significantly more boys than girls follow the aggressive/versatile path.

### The Non-Aggressive Path

Individuals on this path usually do not begin their antisocial behaviour until late childhood or early adolescence, and therefore much later than those on the aggressive/versatile path. Typically, the antisocial behaviour of these children is not aggressive and is usually limited to covert behaviours, such as theft, lying, truancy and substance use.

Hyperactivity and its associated features appear less frequently in this group. Moreover, unlike the versatile children, many of these youngsters have good relationships with their parents until their problem behaviour appears. They also appear popular and accepted among their peers. Indeed, many of their antisocial problems occur in the company of peers. Although some youngsters on the non-aggressive path have academic problems, these problems usually appear to stem more from a refusal to participate in academic work than from inherent difficulties in learning.

More youngsters on this path appear to stop their antisocial behaviour than the versatile, and more stop sometime during adolescence. This is not to say that all non-aggressive youngsters end their antisocial behaviour early. Recidivist property offenders and white-collar criminals are thought to evolve from this group.

Individuals in this group appear at risk for drug offences and various forms of substance abuse. The proportion of females is higher for this path than the previous one, although boys still predominate.

### The Exclusive Substance-Abuse Path

A large proportion of alcoholics and other drug abusers did not display serious antisocial behaviour when

they were young.<sup>(33)</sup> Substance use probably begins later than that of versatile, usually sometime in early to middle adolescence. Further explanations about the characteristics of this path are needed.

This summary of developmental paths is necessarily sketchy because certain aspects have not been adequately researched. It mainly serves to point out the developmental nature of antisocial behaviour, which varies among individuals. Moreover, risk factors and processes promoting deviant behaviour in one path are not entirely the same as those promoting deviancy in another path.

It should be kept in mind that some individuals do not progress from less serious to more serious antisocial acts, and others' behaviour will de-escalate over time. As a rule of thumb, the further an individual has progressed to more serious antisocial acts, the less likely he or she will reverse to a non-deviant lifestyle.

## Vulnerability

Despite the impression so far that children's antisocial development is equally likely to occur at any of the different phases of the growing-up years, this is not the case. Some major conclusions based on available research are outlined below.

- The prevalence of youngsters who engage in aggressive behaviour gradually decreases from the preschool period to adolescence.<sup>(34)</sup> Thus, it appears that a proportion of youngsters, certainly boys, grow out of their aggressive behaviour.
- For boys, physically aggressive behavioural patterns rarely emerge for the first time in late childhood or adolescence. More often, such behaviour has been evident earlier.
- It follows that there is a greater chance of incorrectly labelling boys as being at risk for later deviance when aggression early in life is used as a predictor. The chances of mislabelling would be less if aggression at later points in a child's life were considered.
- Certain behavioural patterns probably form before early adolescence. The chances of a child growing out of early behavioural problems decrease after early adolescence.
- The prevalence of youngsters who engage in non-aggressive, concealing, antisocial acts increases from the late elementary-school years into adulthood. This is the case for such behaviours as theft, truancy, vandalism and substance use.<sup>(35)</sup>

## Critical Periods Critical Periods of Malleability

For several reasons, it is helpful to know about the developmental changes in antisocial behaviour. First, it helps to distinguish better between deviant and normal behaviour. Second, it shows at what periods most change takes place in a youngster's behaviour (in order to focus on critical periods during which new problem behaviours can be influenced). And third, knowledge of developmental trends and of periods when change is more or less likely to occur are important for assessing when intervention would be most effective.



## Critical Period for Bonding

There is increasing evidence of a critical period early in children's lives when youngsters form attachments to their adult caretakers. This helps them to learn prosocial skills and to unlearn aggressive or acting out behaviours. Without this attachment, or bonding, socialization is much more difficult.

Evidence that such bonding occurs in the first few years of life comes from studies comparing youngsters who experienced disruptions in the continuity of child care with children who did not.<sup>(36)</sup> Disruptions can take place for a variety of reasons, as with adoption, exposure to many different caretakers and marital breakdown.

Adoption late in a child's life is often followed by more maladaptive behaviour than early adoption.<sup>(37)</sup> Similarly, multiple mothering of infants for three to six months has been shown to predict antisocial behaviour.<sup>(38)</sup> In that same vein, separation between child and mother due to long or repeated hospitalizations, especially between the ages of six months and three years, can have long-term effects on behavioural adjustment.<sup>(39)</sup>

Additionally, the amount of time with only one parent during the preschool period predicts behaviour problems at grade two, while family breakup during the first five years predicts problem behaviour and delinquency much later.<sup>(40)</sup> The impact of disruption on child behaviour may be increased by the loss of frequent contact with one of the parents. Even very young children react to quarrelling adults by increased negative behaviour.<sup>(41)</sup>

A few studies have linked early adverse experiences in children's lives to later delinquency.<sup>(42)</sup> For example, Kolvin et al. followed a birth cohort of 847 boys and girls to age 33. They measured various forms of deprivation experienced by the children during their first five years: marital disruption, parental illness, poor physical or domestic care, social dependency, overcrowding and poor-quality mothering.

With one exception, boys who experienced at least three of the above deprivations received the highest number of convictions in each age period except ages 26 to 27. Those who experienced only one of the above deprivations had an intermediate level of convictions. Those who experienced no deprivations had the lowest level of convictions.

The results illustrate two points. First, there appears to be a relationship between the degree of deprivation and the subsequent rate of offences. Second, the relationship is not restricted to the juvenile years, but is maintained from age 10 through to age 33.

## Conclusion

This article stressed that, as a rule, young offenders do not "spring out of the cabbage" when they commit their first delinquent act. Instead, chronic problem behaviour often precedes the delinquent acts by many years.

Precursors of delinquency manifest themselves in many ways (Figure 1). The manifestations change with the child's development and, more often than not, mean that problem behaviours will diversify over time (Figure 2).

Much is known about the forms of problem behaviour that predict later delinquency. However, the question of whether risk factors **cause** later delinquency needs substantiation.

Certain patterns of risk factors are associated with later chronic antisocial behaviour, including hyperactivity and attention deficits. Other important factors are early aggression, theft and academic problems. A number of biological risk factors are relevant, including toxic substances which affect preschoolers especially.

There is evidence that social risk factors (such as parents' socialization practices) play a role in the emergence of conduct problems and delinquency in youngsters. The longer children are exposed to social risk factors, including the influence of delinquent peers, the higher the chance they will become delinquent.

Finally, there is evidence of critical periods in which children appear vulnerable to particular influences and risk factors. Also, research reveals that children's malleability to change probably decreases with age, especially in early adolescence. The evidence is far from complete, however.

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**One study, now in its fifth year, consists of the follow-up of a community sample of 1,517 boys. Another study is a yearly follow-up of a clinically referred sample (n=177) which has been assessed four times. These data sets make it possible to trace deviant development, identify risk and causal factors and design optimal screening procedures to identify youngsters at risk.**

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