



While much is known about the risk factors associated with adolescent antisocial behaviour, less is known about the factors that might promote resilience against this outcome. **SUZANNE VASSALLO, DIANA SMART, ANN SANSON AND INEZ DUSSUYER** explore this issue drawing on data from the Australian Temperament Project.

At risk but not antisocial

Changes from childhood to adolescence

All societies are governed by a common understanding of how people should act in given situations. These guidelines are referred to as “norms” and generally reflect the values of a particular society (Harper 1997). Acts or behaviours that run counter to these socially accepted standards of behaviour are often labelled “antisocial” (Rutter 1997). As norms are socially determined, definitions of “antisocial behaviour” are to a certain extent value-laden, and may differ between cultures and eras (Rutter 1997).

Recognising these limitations, a broad definition of antisocial behaviour, as “behaviour that contravenes the norms of society” (Rutter, 1997:115) is used in this article. Thus, antisocial behaviour as it is defined here includes a broad array of behaviours ranging from minor to serious criminal acts (such as vandalism, assault or drug trafficking) as well as socially unacceptable behaviours which are not illegal (for example, bullying and fighting).

While research suggests that occasional involvement in antisocial behaviour is common among

adolescents (Baker 1998; Bond et al. 2000; Vassallo et al. 2002), for a small number, this behaviour tends to be more frequent and enduring. For this small group of adolescents, such behaviour often persists into adulthood, at considerable cost to the individuals themselves, their families and the wider community (Homel et al. 1999). Thus, adolescent antisocial behaviour may be predictive of adult antisocial and criminal behaviour, as well as a range of other problems such as substance dependence, mental health problems, and relationship and financial difficulties (Farrington 2002; Moffitt 2002).

There is growing recognition that early intervention can prevent or diminish the development of problem behaviours, including antisocial behaviour (Homel et al. 1999). Early intervention and prevention is clearly preferable to reacting after problems have become entrenched, and is often more efficient and cost-effective. For example, Greenwood and colleagues (1998) examined the cost effectiveness of early intervention approaches in diverting young people from crime, and concluded that early

intervention could deliver similar reductions in crime to that achieved by imprisoning offenders, at a fraction of the cost.

However, effective early intervention and prevention strategies need to be grounded on a sound understanding of the factors and processes that promote or hinder the development of antisocial behaviour. In recent years, substantial research has been devoted to identifying factors that increase the likelihood of involvement in such behaviour. A recent authoritative review identified a wide range of risk factors for adolescent antisocial behaviour, including personal attributes such as aggression, a “difficult” temperament style or poor social skills, as well as characteristics of an individual’s family (family violence and disharmony, lenient parental supervision), school factors (low attachment and achievement), peer relationship factors (association with antisocial peers), and community characteristics (socio-economic disadvantage, crime-prone neighbourhood) (Homel et al. 1999).

Risk factors are defined as factors that increase the statistical probability of a negative outcome occurring. Hence, not all individuals with a large number of risk factors will develop that negative outcome. Much can be learned from the individuals who are at risk of developing antisocial behaviour but remain resilient to this outcome.

As noted above, risks can arise from multiple contexts. While a child’s life circumstances can create risks (for example, poverty or family breakdown), so too can their individual characteristics (for example, a child’s temperament style or behaviour problems). Similarly, it is clear that resiliency does not only reside in the child, but can arise from

the circumstances that a child finds him/herself in. For example, the famous Kauai study (Werner and Smith 1992) showed that a child’s temperamental characteristics and social skills, strong relationships with parents or other adult figures, and a community support network all were sources of resiliency.

This article focuses particularly on the risk factors for antisocial behaviour that reside in the child, including difficult temperament characteristics, problem behaviours and diminished social skills, as evident at the age of 11-12 years. In fact, these factors are some of the strongest risks identified for adolescent antisocial behaviour (Homel et al. 1999). The article then looks at the role of environmental factors in assisting at risk children to remain resilient to the development of antisocial behaviour in adolescence.

Thus, this article explores two main questions concerning resilience against the development of antisocial behaviour: Why do at-risk individuals differ in their susceptibility to antisocial behaviour? What individual, familial or environmental strengths help some vulnerable individuals to withstand risk and avoid progressing to antisocial behaviour?

Australian Temperament Project

The findings presented here come from a collaborative project between the Australian Institute of Family Studies and Crime Prevention Victoria. This partnership began in 2001 when Crime Prevention Victoria commissioned the Institute to analyse data from the *Australian Temperament Project* (ATP)

AUSTRALIAN TEMPERAMENT PROJECT

The Australian Temperament Project (ATP) is a large, longitudinal study that has, to date, followed the development and wellbeing of a large cohort of Victorian children from infancy into young adulthood (for more details see Prior, Sanson, Smart and Oberklaid 2000).

The initial sample comprised 2443 infants (aged four to eight months) and their parents, who were representative of the Victorian population at that time (1983). In total, 13 waves of data have been collected by annual or biennial mail surveys. Parents, teachers and the young people themselves have completed questionnaires at various stages during the project.

Using age-appropriate measures, information has been collected on temperament style, behavioural and emotional adjustment, school adjustment, health, social skills, civic engagement, peer and family relationships, as well as family functioning, parenting practices, family structure and family socio-economic background. In addition, since early adolescence (13-14 years of age), participants have answered questions regarding their engagement in antisocial acts and substance use.

The findings presented in this paper are based on a sample of 1286 participants (657 males, 629 females).

The AIFS – Crime Prevention Victoria collaboration

This paper draws on findings of the first two reports of the collaborative project between the Australian Institute of Family Studies and Crime Prevention Victoria (Vassallo et al. 2002; Smart et al. 2003). The first two reports can be accessed from the Institute’s website at www.aifs.gov.au/atp/pubs or by phoning Crime Prevention Victoria on (03) 9651-6933. A third report is to be released later in 2004.

concerning the development of antisocial behaviour in adolescence and early adulthood. A brief description of the Project, and information about accessing the publications from the collaboration are provided in the accompanying box.

Identification of antisocial groups

Adolescent self-reports of antisocial behaviour were obtained during three survey waves collected when ATP participants were aged between 13 and 18 years. Groups with differing across-time patterns of antisocial behaviour were identified via the process outlined below (see Vassallo et al. 2002 for further details).

First, adolescents were classified as displaying high or low levels of antisocial behaviour at each time point. Adolescents who reported engaging in three or more different types of antisocial acts during the previous 12 months at a particular survey wave were classified as “highly antisocial” at that time point. Adolescents who reported engaging in fewer than three different antisocial acts during the previous 12 months were classified as “low/non antisocial” at that time point.

Antisocial acts included:

- property offences (for example theft, vandalism);
- violent or drug-related acts (such as physical assault or the sale of illegal drugs);
- authority conflict behaviours (such as suspension or expulsion from school or running away from home); and
- the use of illegal substances within the past month (such as marijuana, ecstasy, amphetamines).

Second, the classifications at the three time points were used to identify across-time patterns of antisocial behaviour. While a number of patterns were found, two groups of particular interest to this article were identified:

- a group who was consistently highly antisocial over adolescence – the “Persistent” group (131 individuals, 65 per cent male); and
- a group who consistently displayed little or no antisocial behaviour over this time period – the “Low/non-antisocial” group (844 individuals, 41 per cent male).

These findings underpin the subsequent investigation of resilience among children at-risk of adolescent antisocial behaviour.

Identification of at-risk resilient and antisocial groups

Individuals were identified as being at risk of progressing to adolescent antisocial behaviour if they possessed three or more personal characteristics (such as temperament style, behaviour problems and social skills) at 11-12 years of age which had been identified by previous research as risk factors for *Persistent* adolescent antisocial behaviour (Homel et al. 1999; Rutter, Giller and Hagill 1998;



Some aspects of parenting appeared to play an important role in assisting at-risk children to move onto a more positive pathway.

Vassallo et al. 2002). In this study, the age of 11-12 years was selected as the timepoint at which to identify children at risk of adolescent antisocial behaviour as it was the first age at which widespread and powerful differences were found between those who later showed a *Persistent* pattern of antisocial behaviour across adolescence and those who did not. Consequently, 11-12 years appeared to be an important “threshold point” in the development of adolescent antisocial behaviour (see Smart et al. 2003 for further details).

The aspects which made up the risk index included:

- a highly active temperament style (as reported by parents).
- a highly negative reactive temperament style (for example, volatility, intensity, moodiness, as reported by parents).
- a low task persistent temperament style (for example, a low capacity to see things through to completion, as reported by parents).
- a low task orientation temperament style (for example, a low capacity to stay focused on tasks, as reported by teachers).
- high aggression (as reported by parents, teachers and/or children).
- high hyperactivity (as reported by parents, teachers and/or children).
- low cooperativeness (as reported by parents, teachers and/or children).
- low self-control (as reported by parents, teachers and/or children)

Figure 1 Group differences on parent-reported aggression over time

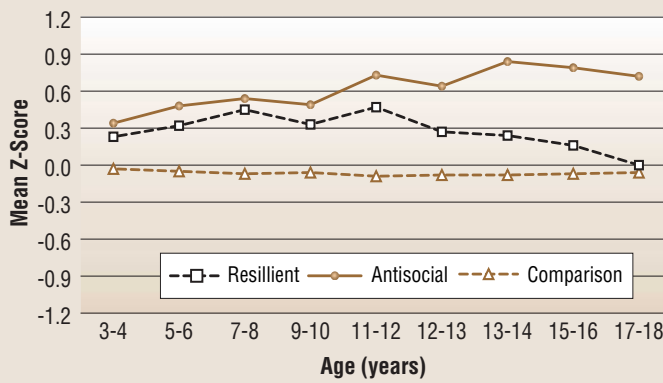


Figure 2 Group differences in parent-child relationship difficulties over time (parent report)

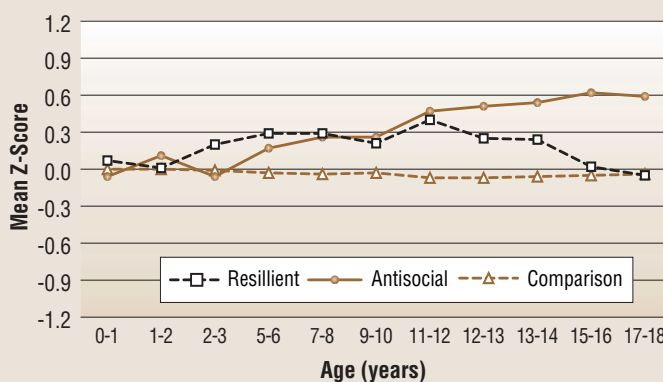


Table 1 Differences between the Resilient and Antisocial groups over adolescence

In comparison to the Antisocial group, the Resilient group was typically:

Personal attributes

- Less volatile and better able to maintain attention
- Less aggressive, depressed and hyperactive
- More cooperative and self-controlled
- Less sensation-seeking
- Better able to regulate emotions
- Less reliant on "maladaptive" coping strategies (for example, using drugs, complaining)
- More optimistic about the future
- Had a clearer idea of the type of person they wished to be

Family environment

- Had more positive parent-child relationships (for example, more warmth and attachment, better quality)
- Received closer parental supervision
- Received less severe discipline (for example, yelling, scolding) by parents
- Experienced a more optimal family environment (more likely to be in an 'intact' family, less likely to have witnessed parental conflict, higher family unity)
- Less likely to have a father who smoked cigarettes or consumed alcohol

School environment

- Experienced higher school adjustment and bonding

Peer relationships

- Had fewer friendships with antisocial peers
- Had less peer involvement
- Had less positive peer relationships

Source: Australian Temperament Project, Australian Institute of Family Studies, 2004.

At-risk resilient and at-risk antisocial groups were identified, as follows. Individuals who were identified as being at risk at 11-12 years of age who subsequently displayed a low/non antisocial pattern of adolescent antisocial behaviour were classified as *Resilient*; while individuals who were identified as being at risk at 11-12 years and subsequently engaged in persistent antisocial behaviour across adolescence were classified as *Antisocial*. Additionally, a third group was formed, to provide a normative *Comparison* group, against which the progress of the two at risk groups could be measured.

Thus, the following three groups were formed:

- a '*Resilient*' group – 100 at-risk individuals who consistently engaged in little or no antisocial behaviour over adolescence. The majority of this group were male (60 per cent) and on average, group members had 5.7 risk factors at 11-12 years.
- an '*Antisocial*' group - 78 at-risk individuals who were persistently antisocial over adolescence. Almost three quarters of these individuals were male (72 per cent) and on average they had 6.5 risk factors at 11-12 years; and
- a '*Comparison*' group - 1107 individuals who comprised the remainder of the sample. This group was created to provide a normative comparison and comprised almost equal numbers of males and females (48 per cent male). On average, group members had 1.5 personal risk factors at 11-12 years.

The *Resilient*, *Antisocial* and *Comparison* groups were then compared on a wide range of personal attributes and environmental characteristics and at different stages of development with the aim of: (a) describing the across-time pathways (patterns of development) of these groups; (b) identifying changes in these pathways, and (c) determining the personal and/or environmental characteristics which appeared to have protected the *Resilient* group from developing antisocial behaviour in adolescence.

Details about the statistical analyses undertaken to compare groups, and the characteristics on which the groups were compared, can be obtained by referring to the Second Report from this collaboration (Smart et al. 2003).

Findings

Group differences across different stages of development

Summarising general trends, no significant differences were found between the *Resilient* and *Antisocial* groups on any aspects from infancy to late-childhood. Both these at-risk groups were very similar over this period but more problematic than the *Comparison* group in their temperament styles, levels of behavioural and emotional problems, social skills, school adjustment difficulties and the quality of their interpersonal relationships (with parents and peers). However, there was a marked improvement in the *Resilient* group from early

adolescence, which continued throughout adolescence. This improvement was so large that by 17-18 years the *Resilient* group resembled the *Comparison* group on most characteristics.

Figures 1 and 2 provide examples of these across-time trends. The figures show the mean standardised scores (z-scores) for each of the three groups (*Antisocial*, *Resilient* and *Comparison*) on two specific characteristics (aggression and parent-child relationship difficulties) over time. Scores were standardised in order to make data collected at different survey waves comparable, with the same midpoint and spread. These figures illustrate the consistent problems experienced by both groups up to 11-12 years, and then divergence of the group pathways after this time (with the *Resilient* group showing improvement and the *Antisocial* group continuing to display difficulties over adolescence).

Aggression and parent-child relationship difficulties are only two of the characteristics that differentiated the *Resilient* group from the *Antisocial* group during adolescence. Similar patterns were found on many personal attributes and family, school and peer characteristics. Group differences are summarised in Table 1.

Protective factors

A major aim of this study was to identify characteristics that consistently differentiated the *Resilient* and *Antisocial* groups over time, which may have assisted the at-risk *Resilient* group to move away from a pathway to persistent adolescent antisocial behaviour. Some examples of factors which may have had a protective role are given in Figures 3 to 5.

One possible protective factor related to the development of friendships with youth who engaged in antisocial behaviour (antisocial peers). At all time-points at which this was measured, the *Resilient* group was found to socialise less often with such peers than the *Antisocial* group (see Figure 3). Since this difference was evident before the pathways of the *Antisocial* and *Resilient* groups began to move away from each other, it seems likely that the *Resilient* group's lower involvement with antisocial peers may have protected them from progressing towards antisocial behaviour. The *Resilient* group closely resembled the *Comparison* group on this characteristic.

A number of other characteristics also consistently differentiated the *Resilient* and *Antisocial* groups, and hence, may have had a "protective" effect. For example, *Resilient* adolescents were consistently reported to receive closer parental supervision (according to parents) and to be less attracted to thrill-seeking and adventurous activities (by their own report) than *Antisocial* adolescents (see Figures 4 and 5). As these aspects were not measured until adolescence, it is not possible to say whether these group differences preceded the development of antisocial behaviour, or were a result of the improvement in the *Resilient* group during early adolescence. Nevertheless, the strength and consistency of these differences is noteworthy.

In addition, the *Resilient* group (but not the *Antisocial* group) consistently exhibited a less "outgoing" personal style than the *Comparison* group. For example, they were less assertive, less involved with peers and not as closely bonded to their friends as those in the *Comparison* group. While somewhat unexpected, this finding appears to suggest that the *Resilient* group's more reserved personal style may have had a protective effect. This finding is further explored later.

Figure 3 Group differences in parent-reported association with antisocial peers over time

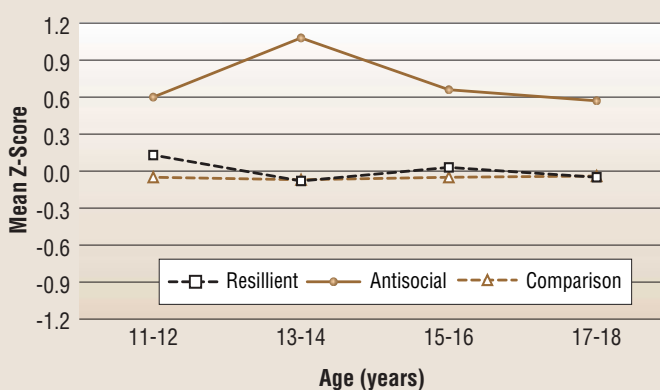


Figure 4 Group differences on parent-reported supervision over time

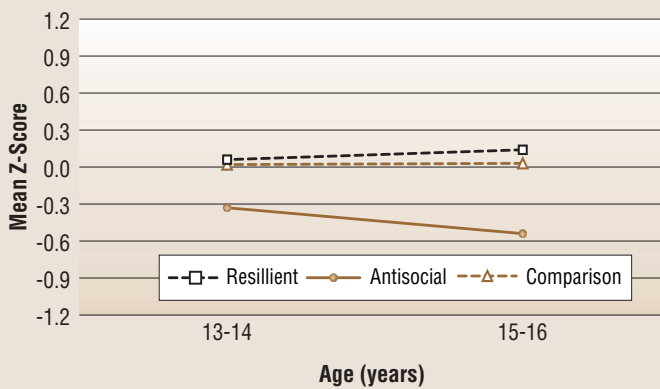
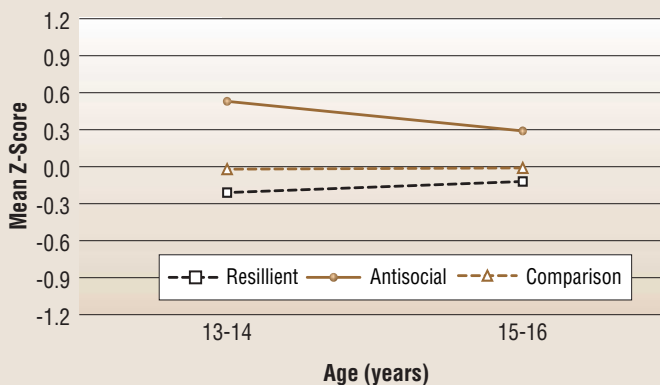


Figure 5 Group differences on self-reported sensation-seeking over time



Discussion and implications

To summarise, this article compared two groups of at-risk children who differed greatly in their subsequent level of antisocial behaviour: a *Resilient* group, who exhibited many personal risks for antisocial behaviour in childhood, but engaged in little or no antisocial behaviour in adolescence and an *Antisocial* group, who were equally at-risk in childhood and did exhibit antisocial behaviour consistently over adolescence.

Across-time comparisons revealed that the two at-risk groups were similar to each other and more problematic than the rest of the sample (the *Comparison* group) from infancy until late childhood. However, from early adolescence the *Resilient* group appeared to improve in many life domains. This improvement was so marked that by late-adolescence the *Resilient* group closely resembled the *Comparison* group.

A number of characteristics appeared to have protected the *Resilient* group from progressing to adolescent antisocial behaviour. Most notably, the *Resilient* group's low rate of friendships with antisocial peers appeared to have had a protective effect, as did their lower attraction to sensation-seeking, their more "reserved" personal style and the closer parental supervision they received. There are important implications arising from these findings.

Being 'at-risk' does not always lead to a negative outcome

The two at-risk groups (*Resilient* and *Antisocial*) were clearly troubled in late childhood, with an average of 5.7 and 6.5 risks present, respectively. While these two at-risk groups were virtually indistinguishable until adolescence, at this time their pathways diverged. One important implication is that at-risk individuals can change during the transition to adolescence. Hence, it is not inevitable that a troubled or "difficult" child will become a "problem" adolescent. Change is not only possible but common. Many children identified as being at-risk of developing antisocial behaviour in this study did not go on to become highly antisocial adolescents.

These findings are consistent with those of several other large, longitudinal studies of child and adolescent development. For example, in New Zealand, Moffitt and colleagues (1996) identified a group of boys (labelled "recoveries") who had severe conduct problems during childhood but did not engage in high levels of adolescent antisocial behaviour. Patterson and colleagues (in press) identified a similar group among participants of the Oregon Youth Study in the United States of America.

As noted previously, risk factors are defined as factors that only increase the chance of a negative outcome occurring, but do not guarantee it. Many at-risk children avoid negative outcomes, and over the course of a child's development there are several opportunities for change, even as late as the adolescent stage of development.

While these results are encouraging, it will be important to continue following the progress of the *Resilient* group into the future to investigate any longer term negative outcomes associated with their earlier difficult behaviour.

The salience of the early adolescent years

Early adolescence appears to be a crucial period in the development of adolescent antisocial behaviour. During early adolescence, clear differences between the *Resilient* and *Antisocial* groups began to emerge for the first time. While the *Antisocial* group continued to experience difficulties in many areas of their lives, the *Resilient* group showed signs of steady improvement from early adolescence onwards.

While it is beyond the scope of the study to fully explain these trends, there are several likely explanations. For instance, it is possible that the transition from primary to secondary school may have played a role. Some children may have been able to make a fresh start, leave behind reputations or self-images as "troublemakers", or form new friendships. However, the transition may have further exacerbated the difficulties of other children. Developmental changes associated with adolescence may also have facilitated a positive change. The early adolescent years are typically a time of great cognitive, emotional and physical change. During this time, the onset of puberty occurs and young people develop complex, abstract thinking capacities. These changes may impact on how young people view themselves and how they interact with others, as well as their capacity to regulate their own behaviour and feelings.

These findings highlight the importance of the early adolescent years in pathways leading towards and away from adolescent antisocial behaviour. They reinforce the view that successful interventions aimed at preventing the development of antisocial behaviour can occur "never too early, never too late" (Loeber and Farrington 1998).

The powerful influence of peer relationships

Peer relationships were found to be a particularly powerful influence. Previous research from this collaboration (Vassallo et al. 2002) and other studies (Elliot and Menard 1996; Weatherburn and Lind 2001) has shown that friendships with antisocial youth are a powerful risk factor for persistent adolescent antisocial behaviour. It was notable that the *Resilient* group tended not to form such friendships, suggesting that the absence of these friendships may have been a factor in promoting their resilience. Some other less expected patterns of peer relationships (such as lower involvement with peers and less positive peer relationships) also appeared to be important, perhaps in limiting *Resilient* individuals exposure to antisocial peer models.

These findings highlight the need for parents and teachers to be aware of children's activities and friendship groups. However, this does not mean that parents should use overly harsh means to prevent children from socialising with antisocial peers (such as "grounding" them or ordering them not to associate with particular peers). In fact, the use of harsh discipline was another factor that differentiated the *Resilient* and *Antisocial* groups during adolescence (with parents of *Antisocial* adolescents more prone to resort to yelling, scolding and grounding).

Parent education programs and interventions aimed at improving relationships between parents



If an at-risk child or adolescent feels that school is a rewarding place to be, this may promote positive long-term outcomes.

and children may have an added benefit of assisting parents to more effectively monitor and supervise their children's behaviour (Kupersmidt et al. 2004). Not surprisingly, research suggests that young people are more likely to tell parents about their whereabouts, activities and friendships if they share a close and warm relationship with them (Fletcher et al. 2004). Ideally, such efforts would precede the development of antisocial behaviour, as parental attempts to introduce closer supervision after such behaviour has become established could provoke further conflict and strain on the parent-adolescent relationship. Parents may also be able to decrease the chances that their child will become involved in an antisocial peer group by encouraging them to take part in supervised activities such as after-school programs, community groups or sporting clubs (Kupersmidt et al. 2004).

The findings also have important implications for the types of interventions used with antisocial youth. Research is accumulating indicating that interventions that bring antisocial youth together (for example, for group-based social skills training) can in some instances be counter-productive and lead to an increase in antisocial behaviour (Dishion et al. 1999; Kupersmidt et al. 2004). It is thought that such programs may inadvertently promote antisocial behaviour by providing antisocial youth with opportunities to form friendships with other antisocial peers, who may expose them to different types of antisocial behaviour and reward their engagement in antisocial acts (Dishion et al. 1999; Kupersmidt et al. 2004).

A recent review (Kupersmidt et al. 2004) made a number of recommendations on how this problem can be addressed. These included: providing opportunities for antisocial youth to mix with more pro-social peers in supervised settings (as a lack of adult supervision may make young people more vulnerable to peer pressure); pairing antisocial youth with volunteer mentors who act as positive role-models; and introducing general social skills training at an early age, so that at-risk children may develop the skills necessary to form positive, pro-social friendships, reducing the chances that they will associate with antisocial children.

Importance of parenting and the family environment

Some aspects of parenting appeared to play an important role in assisting at-risk children to move onto a more positive pathway. As previously noted, parents of *Resilient* children consistently supervised their children's activities more closely than parents of *Antisocial* children, and tended to use less punitive parenting techniques (during mid-adolescence). Furthermore, despite the fact that these children were initially quite challenging, the relationship between *Resilient* children and their parents improved over the adolescent years. Hence, a message that can be taken from these findings is that parents should not give up on difficult children.

Aspects of the broader family environment also appeared important. *Resilient* adolescents were more likely to belong to an 'intact' family unit than *Antisocial* adolescents (although it should be noted that the majority of *Antisocial* adolescents belonged to an 'intact' family unit). Additionally, the family climate experienced by *Resilient* adolescents tended to be more harmonious (more inter-connected, less family stress, less conflict between parents) than that experienced by *Antisocial* adolescents.

While we do not know whether these differences contributed to the improvement of the *Resilient* group, or occurred as a result of it, it is clear that supporting parents in relationships with their at-risk adolescents, and in effectively understanding and managing their child's behaviour, is worthwhile.

Influence of school attachment and adjustment

The *Resilient* group experienced fewer difficulties at school over the secondary school years, reported feeling more attached to school, and possessed more positive attitudes to schooling than the *Antisocial* group. These findings highlight the positive role that schools can play in the wellbeing and development of young people. They suggest that if an at-risk child or adolescent feels that school is a rewarding place to be, this may promote positive long-term outcomes.

These findings draw attention to the importance of keeping adolescents connected to school. Recent Australian research (see Hemphill et al. 2004, in this edition of *Family Matters*) suggests that many adolescents do not show high levels of school engagement (with Year 7 or 9 students reporting, on average, that they look forward to going to school only about once a month). Further efforts may thus be needed to engage and nurture students (particularly at-risk adolescents), providing them with support and encouragement in addition to structure and control.

Conclusion

This research found that many young people who showed serious signs of problem behaviour during childhood, which are known to be risk factors for later antisocial development, did not go on to become antisocial adolescents. In fact, many were found to experience improvements across a wide range of aspects of life during adolescence.

A number of personal, familial and peer characteristics appeared important in helping vulnerable children move away from pathways to adolescent antisocial behaviour. Most notably, better quality parent-child relationships, closer parental supervision, a stronger attachment to school, an avoidance of friendships with antisocial peers, a lower attraction to risk taking, better control of emotions, and a more "reserved" personal style were important influences which assisted young people to avoid involvement in persistent adolescent antisocial behaviour.

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