

Early identification of individuals at risk for antisocial personality disorder*

JONATHAN HILL

Background Antisocial personality disorder is usually preceded by serious and persistent conduct problems starting in early childhood, and so there is little difficulty in identifying an at-risk group.

Aims To address six key areas concerning the relationship between early conduct problems and antisocial personality disorder.

Method Review of recent research into early identification of and intervention in child conduct problems, following up to possible adult antisocial behaviour.

Results Conduct problems are predictive of antisocial personality disorder independently of the associated adverse family and social factors. Prediction could be aided through identification of subtypes of conduct problems. There is limited evidence on which children have problems that are likely to persist and which will improve; children who desist from early conduct problems and those with onset in adolescence are also vulnerable as adults.

Conclusions The predictive power of the childhood precursors of antisocial personality disorder provides ample justification for early intervention. Greater understanding of subgroups within the broad category of antisocial children and adults should assist with devising and targeting interventions.

Declaration of interest None.

The identification of childhood precursors of adult psychiatric disorders offers the possibility of early intervention and hence prevention. In the case of antisocial personality disorder the early indicators are remarkably clear. Starting with Robins' (1966) classic follow-up of children referred to a clinic for conduct problems, numerous studies have shown that persistent and pervasive aggressive and disruptive behaviours seen before the age of 11 years are strongly associated with persistence of antisocial behaviours through adolescence and into adult life. As Robins described, the risk extends far beyond antisocial behaviours to unstable relationships, unreliable parenting and underachievement in education and at work (Moffitt *et al*, 2002). This broad constellation of difficulties is reflected in DSM-IV antisocial personality disorder (American Psychiatric Association, 1994). Furthermore, children who do not have conduct problems are very unlikely to subsequently develop antisocial personality disorder (which is rare without a history of conduct problems). Conduct disorder is a specific diagnosis within DSM-IV, which requires antisocial acts seen generally in older children and adolescents. In this paper the terms 'conduct problems' and 'the conduct disorders' are used to denote serious oppositional, aggressive or antisocial behaviours whether or not they meet DSM criteria for conduct disorder.

METHOD

Selective review of findings published over the past 10 years in childhood predictors of antisocial personality disorder, and consideration of issues still to be addressed in relation to early identification of individuals at risk.

*Paper presented at the second conference of the British and Irish Group for the Study of Personality Disorders (BIGSPD), University of Leicester, UK, 31 January to 3 February 2001.

RESULTS

Clinical policy

From a clinical and policy perspective, the strength of the continuity from conduct problems to antisocial personality disorder is ample grounds for making strenuous efforts to prevent the appearance of aggressive and disruptive behaviours in young children, and to intervene early once they have been identified. It is not the purpose of this paper to review the evidence for the effectiveness of prevention programmes and of early interventions for conduct problems, but a brief summary highlights the need for further refinements in early identification. A small number of adequately designed randomised controlled trials of preventive programmes to reduce conduct problems have been carried out, some of which have yielded promising results. Equally, whereas there have been some significant improvements, often the effects have been quite small; and some studies have shown no benefits (LeMarquand *et al*, 2001). There is substantial support for the effectiveness of parent management training programmes in reducing overall levels of conduct problems in children (Kazdin, 2000), and for the effectiveness of stimulants where conduct problems are associated with attention-deficit hyperactivity disorder (ADHD) (Swanson *et al*, 2001). Nevertheless, there has been considerable variability in outcomes. Parent training has been found to be less effective for the higher-risk families characterised by socio-economic disadvantage, marital discord or single parent status, high parental stress and maternal unresolved loss or trauma (Routh *et al*, 1995; Kazdin, 1997). Children with more severe or chronic problems or with comorbid conditions are less likely to do well (Ruma *et al*, 1996). Evidence of the long-term effectiveness of psychosocial treatments for conduct problems, and of stimulants for conduct problems comorbid with ADHD, is lacking.

Early identification

It may be that the problem will be solved simply through better treatment techniques; however, attention to six issues in early identification may also be of value in generating ideas for the development of interventions. First, conduct problems in young children are associated with many other adverse factors such as ineffective parenting practices, discordant and unstable families,

poor peer relationships and educational failure. It is important to clarify whether it is the child's disorder that requires early identification, or these associated factors or both. Second, conduct problems in childhood are generally identified on the basis of a broad cluster of behaviours. The identification of subtypes may lead to a better understanding of underlying mechanisms, and hence to improved matching of treatment to clinical needs. Third, in approximately 50% of children with early conduct problems these do not persist into adolescence and adult life. Ways of distinguishing persisters and desisters are needed. Fourth, given the intractability of behaviour problems in some young children, we need to ask whether identification at an earlier age is possible. Fifth, the adult outcomes of children who show early conduct problems and then desist, and of those whose problems start in adolescence, need to be considered. Finally, we need to attend to the adult outcomes that we are attempting to anticipate. It may be that specific antisocial outcomes have different antecedents from those of antisocial personality disorder.

What is predictive?

It is possible that, because conduct problems are associated with a wide range of adverse individual, family and social factors, the conduct problems *per se* are not the antecedents of antisocial personality disorder but are markers for these other difficulties that are the true antecedents. In general, the evidence supports conduct problems as true antecedents (Farrington *et al*, 1990). For example, studies that have assessed both conduct problems and quality of peer relationships, and then followed children over several years, have consistently found that early conduct problems predict later antisocial behaviours (Tremblay *et al*, 1995; Woodward & Fergusson, 1999). By contrast, the role of peer relationships has been less clear. This should not, however, be interpreted to mean that the associated factors are unimportant. For example in the Dunedin Multidisciplinary Health and Development Study, violent crime at the age of 18 years was predicted by the combination of temperamental lack of control (quick to show negative emotions when frustrated, poor impulse control) and number of changes of parental figure before the age of 13

years, which probably reflected a range of family adversities (Henry *et al*, 1996).

Sources of heterogeneity in the conduct disorders

Longitudinal studies from childhood to adulthood have used a wide range of ways to characterise conduct problems. Generally they have made use of summary scores generated from a range of questionnaires completed by teachers and parents (Farrington *et al*, 1990; Fergusson *et al*, 1996; Moffitt *et al*, 1996). The consistency of the findings may suggest that it does not matter much how the problem is defined. Equally, there are pointers to potentially important kinds of heterogeneity. Children with conduct problems and hyperactivity/inattention differ from those with 'pure' conduct disorder in that their problems are more severe and likely to persist, and they are more likely to have neuropsychological deficits (Lynam, 1996). Lynam (1998) has argued that children with attention-deficit hyperactivity problems are 'fledgling psychopaths', implying that they are more likely to show in adult life the combination of callousness, superficial charm and antisocial behaviour that characterises a subgroup of adults with antisocial personality disorder. Frick and colleagues give priority to callous-unemotional traits in childhood. In a series of studies they have demonstrated that children with antisocial problems who exhibit these traits differ from other children with antisocial problems (Barry *et al*, 2000) in apparently having fewer verbal deficits (Loney *et al*, 1998) and in coming from families that are not characterised by dysfunctional parenting practices seen generally in the conduct disorders (Wootton *et al*, 1997). Children exhibiting callous-unemotional traits may also have a deficit in processing behavioural evidence of distress in others. Associations between scores assessing callous and unemotional characteristics and a reduced ability to recognise fear and sadness have been shown in young adolescents recruited in mainstream schools and children with identified emotional and behavioural problems (Blair & Coles, 2003; Stevens *et al*, 2001).

Loeber *et al* (1993) have proposed that three contrasting patterns of childhood antisocial problems reflect different pathways for different behaviour patterns: an 'overt' pathway characterised by bullying,

followed by early fighting and proceeding to more serious violence; a 'covert' pathway starting with lying and stealing, and going on to more serious damage to property; and an 'authority conflict' pathway in which oppositional and defiant behaviours are prominent.

A further distinction, between 'reactive' and 'proactive' antisocial behaviours, cuts across this three-category typology. Reactive acts occur in response to actual or perceived threat from others, whereas proactive behaviours are initiated by the individuals (Dodge & Coie, 1987). Reactive aggression is thought to involve angry retaliation, in contrast to the cold unprovoked calculation of proactive aggression. Dodge *et al* (1997) reported that, compared with children showing proactive aggression, 'reactive' children were more likely to have been physically abused, to have poor peer relationships, to have shown aggression from an earlier age and to have attention-deficit and hyperactivity symptoms. A central idea in Dodge's model is that reactive aggression is mediated by a readiness to perceive hostile intent in the actions of others. However, the evidence for this is inconsistent. At this stage these can be considered as promising subtypes that may lead to a more precise specification of mechanisms, and hence provide pointers to different kinds of intervention. Longitudinal studies to determine whether they differ in course are needed.

Who are the persisters and desisters?

We have already referred to the poor outlook of children with both conduct disorder and ADHD symptoms. On the basis of retrospective reports within a large epidemiological study, Robins & Price (1991) found that the number of childhood antisocial problems is associated with risk of antisocial personality disorder. Studies within childhood provide some further clues regarding risk of persistence. Loeber *et al* (2000) found that early fighting and hyperactivity predicted persistence of antisocial behaviours over a 6-year period among boys referred for conduct problems. In a prospective study of a representative general population sample from ages 7–9 years to 14–16 years, persisters had the highest levels of family adversity and lower IQ and self-esteem (Fergusson *et al*, 1996). Children with early conduct problems that

did not persist had levels of these risk factors that were intermediate between those of persisters and of children who lacked early behavioural problems. Persisters were more likely than those whose early antisocial behaviours had remitted to have a deviant peer group in adolescence. Whether this was a reflection or a cause of persistence is not clear; however, it is consistent with Sampson and Laub's argument that a key factor in determining persistence may be the presence or absence of social bonds and controls (Sampson & Laub, 1994).

Earlier predictors

We might suppose that, given the stability of conduct problems from the age of 3 years onwards, earlier precursors should be readily identifiable. However, the findings have been inconsistent. For example, the idea has been extensively investigated that early 'difficult' temperament, comprising traits such as predominantly negative emotions and ready frustration, contributes to irritable parenting, which in turn increases the risk for conduct problems. Studies using assessments of temperament based on parental reports have yielded some positive findings, but these are vulnerable to parental attributions. Recent studies have failed to demonstrate consistently that observational measures of temperament made in the first year of life predict later conduct problems (Belsky *et al*, 1998; Aguilar *et al*, 2000). Early attachment difficulties might be expected to increase the risk for later conduct problems. Here again the evidence is not convincing (Hill, 2002). It is likely that the quality of parenting in infancy is predictive of later conduct problems (Belsky *et al*, 1998) and it may be that the most promising approaches to the identification of early predictors will examine specific interactions between infant characteristics and early social experience (Shaw *et al*, 1996; Belsky *et al*, 1998).

Desisters and later onsets

We have focused so far on boys who show early conduct problems that persist into adult life. It has generally been assumed that those whose conduct problems remit have 'recovered'. However, recent evidence from the Dunedin Study suggests that although these children are not at increased risk for antisocial outcomes, they are by no means free of difficulties (Moffitt *et al*, 2002). At the age of 26 years they had

higher rates of depression and anxiety disorders, both self- and informant-rated, and they were socially isolated, with few friends. They shared the poor educational and work records of the life-course persistent group who were antisocial as adults. Likewise, those with onset in adolescence, provisionally termed by Moffitt 'adolescence limited', were not free of problems by the age of 26 years. Compared with those who were not significantly antisocial in childhood or adolescence, these young men had higher rates of documented and self-reported drug and property crimes, and their informants reported more depression and anxiety symptoms.

Heterogeneity within antisocial personality disorder

Thus far in this paper the assumption has been made that the DSM-IV antisocial personality disorder category best summarises the antisocial outcomes of interest. There is little doubt that it succeeds as a broad-brush characterisation of antisocial behaviour and associated wider social dysfunction. However, it lacks specificity. In common with all DSM diagnoses, it requires the presence of a number of maladaptive behaviours or mental states identified from a larger set. Hence, the requirements can be met in numerous ways. This may limit the investigation of more specific causal factors, and so a more precise specification of the adult antisocial outcomes may be needed.

The identification of 'psychopathic disorder' makes the point. DSM-IV antisocial personality disorder is present in 50–80% of convicted offenders, but a much smaller group of 15–30% are judged to have characteristics such as grandiosity, callousness, deceitfulness, shallow affect and lack of remorse (Hart & Hare, 1989). These individuals are more likely than other offenders to have a history of severe and violent offences, and they may also have a distinctive deficit in interpersonal sensitivity. In a comparison of prisoners with and without psychopathic disorder, the groups did not differ in their ability to attribute correctly happiness, sadness and embarrassment to protagonists in short stories. However, in response to guilt stories, those with psychopathic disorder were more likely to attribute happiness or indifference to the protagonists (Blair *et al*, 1995). It has been proposed that psychopathy is associated with a failure to inhibit aggression in

response to signs of distress in others, arising from a deficit in processing behavioural evidence of that distress (Blair *et al*, 1997). There is supportive evidence that, compared with other offenders, adults with psychopathic disorder have reduced autonomic responses to distress cues (Chaplin *et al*, 1995; Blair *et al*, 1997). As we saw earlier, a subgroup of children with antisocial problems who exhibit callous-unemotional traits has been identified that may parallel adults with psychopathic disorder. No studies have yet tested for continuity between child and adult psychopathic traits by following these children into adult life.

DISCUSSION

Children at risk for future antisocial personality disorder are readily identified, but evidence on the long-term effectiveness of prevention and treatment programmes is limited. Some progress has been made in identifying subgroups of children with antisocial problems in which different causal processes operate, and therefore for which there are different treatment needs. The available research does not yet tell us whether differences in the patterning, or associated features, of childhood conduct problems are predictive of distinctive adult outcomes. If it is possible that this review was subject to selection bias.

REFERENCES

- Aguilar, B., Sroufe, L. A., Egeland, B., *et al* (2000) Distinguishing the early-onset/persistent and adolescence-onset antisocial behaviour types: from birth to sixteen years. *Development and Psychopathology*, **12**, 109–132.
- American Psychiatric Association (1994) *Diagnostic and Statistical Manual of Mental Disorders* (4th edn) (DSM-IV). Washington, DC: APA.
- Barry, C. T., Frick, P. J., DeShazo, T. M., *et al* (2000) The importance of callous-unemotional traits for extending the concept of psychopathy to children. *Journal of Abnormal Psychology*, **109**, 335–340.
- Belsky, J., Hsieh, K.-H. & Crnic, K. (1998) Mothering, fathering, and infant negativity as antecedents of boys' externalising problems and inhibition at age 3 years: differential susceptibility to rearing experience? *Development and Psychopathology*, **10**, 301–320.
- Blair, R. J. R. & Coles, M. (2003) Expression recognition and behavioural problems of early adolescence. *Cognitive Development*, in press.
- , Sellars, C., Strickland, I., *et al* (1995) Emotion attributions in psychopathy. *Personality and Individual Differences*, **19**, 431–437.
- , Jones, L., Clark, F., *et al* (1997) The psychopathic individual: a lack of responsiveness to distress cues? *Psychophysiology*, **34**, 192–198.

Chaplin, T. C., Rice, M. E. & Harris, G. T. (1995)

Salient victim suffering and perceptual responses of child molesters. *Journal of Consulting and Clinical Psychology*, **63**, 249–255.

Dodge, K. A. & Coie, J. D. (1987) Social information-processing factors in reactive and proactive aggression in children's peer groups. *Journal of Personality and Social Psychology*, **53**, 1146–1157.

—, Lochman, J. E., Harnish, J. D., et al (1997)

Reactive and proactive aggression in school children and psychiatrically impaired chronically assaultive youths. *Journal of Abnormal Psychology*, **106**, 37–51.

Farrington, D. P., Loeber, R. & Van Kammen, W. B. (1990)

Long-term criminal outcomes of hyperactivity–impulsivity–attention-deficit and conduct problems in childhood. In *Straight and Devious Pathways from Childhood to Adulthood* (eds L. N. Robins & M. R. Rutter), pp. 62–81. New York: Cambridge University Press.

Fergusson, D. M., Lynskey, M. T. & Horwood, L. J. (1996)

Factors associated with continuity and changes in disruptive behavior patterns between childhood and adolescence. *Journal of Abnormal Psychology*, **105**, 533–553.

Hart, S. D. & Hare, R. D. (1989)

Discriminant validity of the Psychopathy Checklist in a forensic psychiatric population. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, **1**, 211–218.

Henry, B., Caspi, A., Moffitt, T. E., et al (1996)

Temperamental and familial predictors of violent and non-violent criminal convictions: from age 3 to age 18. *Development Psychopathology*, **8**, 614–623.

Hill, J. (2002)

Biological, psychological and social processes in the conduct disorders. *Journal of Child Psychiatry and Psychology*, **43**, 133–164.

Kazdin, A. E. (1997)

Parent management training: evidence, outcomes and issues. *Journal of the American Academy of Child and Adolescent Psychiatry*, **36**, 1349–1356.

— (2000)

Treatment of conduct disorders. In *Conduct Disorders in Childhood and Adolescence* (eds J. Hill & B. Maughan). Cambridge: Cambridge University Press.

LeMarquand, D., Tremblay, R. & Vitaro, R. (2001)

The prevention of conduct disorder: a review of successful and unsuccessful experiments. In *Conduct Disorders in Childhood and Adolescence* (eds J. Hill & B. Maughan). Cambridge: Cambridge University Press.

Loeber, R., Wung, P., Keenan, K., et al (1993)

Developmental pathways in disruptive child behaviour. *Development and Psychopathology*, **5**, 101–132.

—, Green, S. M., Lahey, B. B., et al (2000)

Physical fighting in childhood as a risk factor for later mental health problems. *Journal of the American Academy of Child and Adolescent Psychiatry*, **39**, 421–428.

Loney, B. R., Frick, P. J., Ellis, M., et al (1998)

Intelligence, psychopathy, and antisocial behaviour. *Journal of Psychopathology and Behavioural Assessment*, **20**, 231–247.

Lynam, D. R. (1996)

The early identification of chronic offenders: who is the fledgling psychopath? *Psychological Bulletin*, **120**, 209–234.

— (1998)

Early identification of the fledgling psychopath: locating the psychopathic child in the current nomenclature. *Journal of Abnormal Psychology*, **107**, 566–575.

Moffitt, T. E., Caspi, A., Dickson, N., et al (1996)

Childhood-onset versus adolescent-onset antisocial

CLINICAL IMPLICATIONS

■ The identification and treatment of conduct problems in early childhood are central to the prevention of antisocial personality disorder.

■ The conduct disorders are heterogeneous in the patterning and course of symptoms, with implications for matching treatment to type of problem.

■ There is considerable heterogeneity within antisocial personality disorder, so that there is a need to identify specific early indicators of particular adult antisocial outcomes.

LIMITATIONS

■ Most of the research reviewed in the article refers to antisocial personality disorder in males.

■ Few longitudinal studies of general populations have included sufficient numbers of antisocial children to explore heterogeneity.

■ Little is known about very early indicators of children at risk for the development of conduct problems.

JONATHAN HILL, MRCPsych, University Child Mental Health Unit, Mulberry House, Alder Hey Hospital, Eaton Road, Liverpool L12 2AP, UK. E-mail: jonathan.hill@liverpool.ac.uk

conduct in males: natural history from 3 to 18. *Development and Psychopathology*, **8**, 399–424.

—, Caspi, A., Harrington, H., et al (2002) Males on the life-course persistent and adolescence-limited antisocial pathways: follow-up at age 26. *Development and Psychopathology*, **14**, 179–207.

Robins, L. N. (1966) *Deviant Children Grown-Up: A Sociological and Psychiatric Study of Sociopathic Personalities*. Baltimore, MD: Williams and Wilkins.

— & Price, R. K. (1991) Adult disorders predicted by childhood conduct problems: results from the NIMH Epidemiological Catchment Area Project. *Psychiatry*, **54**, 116–132.

Routh, C. P., Hill, J. W., Steele, H., et al (1995)

Maternal attachment status, psychosocial stressors and problem behaviour: follow-up after parent training courses for conduct disorder. *Journal of Child Psychology and Psychiatry*, **36**, 1179–1198.

Ruma, P. R., Burke, R. V. & Thompson, R. W. (1996)

Group parent training: is it effective for children of all ages? *Behavior Therapy*, **27**, 159–169.

Sampson, R. J. & Laub, J. H. (1994)

Urban poverty and the family context of delinquency: a new look at structure and process in a classic study. *Child Development*, **65**, 523–540.

Shaw, D. S., Owens, E. B., Vondra, J. I., et al (1996)

Early risk factors and pathways in the development of

early disruptive behavioural problems. *Development and Psychopathology*, **8**, 679–700.

Stevens, D., Charman, T. & Blair, R. J. R. (2001)

Recognition of emotion in facial expressions and vocal tones in children with psychopathic tendencies. *Journal of Genetic Psychology*, **162**, 201–211.

Swanson, J. M., Kraemer, H. C., Hinshaw, S. P., et al (2001)

Clinical relevance of the primary findings of the MTA: success rates based on severity of ADHD and ODD symptoms at the end of treatment. *Journal of the American Academy of Child and Adolescent Psychiatry*, **40**, 168–179.

Tremblay, R. E., Masse, L. C., Vitaro, F., et al (1995)

The impact of friends' deviant behaviour on early onset of delinquency: longitudinal data from six to thirteen years of age. *Development and Psychopathology*, **7**, 649–668.

Woodward, L. J. & Fergusson, D. M. (1999)

Childhood peer relationship problems and psychosocial adjustment in late adolescence. *Journal of Abnormal Child Psychology*, **27**, 87–104.

Wootton, J. N., Frick, P. J., Shelton, K. K., et al (1997)

Ineffective parenting and childhood conduct problems: the moderating role of callous–unemotional traits. *Journal of Consulting and Clinical Psychology*, **65**, 301–308.