

Childhood origins of teenage antisocial behaviour and adult social dysfunction

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Summary

The main aim of this research was to investigate the childhood predictors (age 8-10 years) of teenage antisocial behaviour (age 18 years) and adult social dysfunction (age 32 years). A sample of 411 London males was followed up from age 8 years to age 32 years. The most important childhood predictors of both outcomes (and of convictions) were measures of economic deprivation, poor parenting, an antisocial family and hyperactivity-impulsivity-attention deficit. However, childhood nervousness and social isolation were negatively related to teenage antisocial behaviour but positively related to adult social dysfunction. It was concluded that the development of adult social dysfunction depended not only on established causes of antisocial behaviour such as economic deprivation and poor parenting but also on causes of internalizing disorders such as childhood nervousness and social isolation.

Introduction

In their prospective longitudinal study of 411 London males from age 8 years to age 18 years, West and Farrington¹ concluded that offending was only one element of a larger syndrome of antisocial behaviour. They documented how childhood antisocial behaviour and a constellation of childhood background adversities (including poverty, large families, ineffective child-rearing methods, convicted parents, parental disharmony and separation) tended to lead to a constellation of teenage problems (including offences of dishonesty and violence, heavy drinking, drug abuse, reckless driving, sexual promiscuity and an unstable job record). Farrington² extended this follow-up study to age 32 years, and demonstrated the persistence of the syndrome of antisocial behaviour from childhood (age 8-10 years) to the teenage years (age 18 years) and into adulthood (age 32 years). The main aim of the present paper is to study the link between childhood background adversities at age 8-10 years and a variety of indicators of adult social dysfunction at age 32 years.

Methods

The study

The present research is part of the Cambridge Study in Delinquent Development, which is a prospective longitudinal survey of 411 males. At the time they were first contacted in 1961/62, they were all living in a working-class area of London. The sample was chosen by taking all the boys who were then aged 8 years and on the registers of six state primary schools within a one-mile radius of our research office. The boys were overwhelmingly white, working class, and

of British origin. The major results of this survey can be found in four books¹⁻⁵ and in more than 60 papers listed by Farrington and West⁶.

The original aim of the survey was to describe the development of delinquent and criminal behaviour in inner-city males, to investigate how far it could be predicted in advance, and to explain why juvenile delinquency began, why it did or did not continue into adult crime, and why adult crime usually ended as men reached their twenties and thirties. The survey was not designed to test one particular theory about crime but to test many different hypotheses about the causes and correlates of offending. Numerous different types of variables were measured, since it was hoped that this survey would yield information of use not only to criminologists but also to those interested in alcohol and drug abuse, educational problems, poverty and poor housing, unemployment, sexual behaviour, aggression, and other social problems.

The study males were interviewed and tested in their schools when they were aged about 8, 10 and 14 years, by male or female psychologists. They were also interviewed in our research office at about 16, 18, and 21 years, and in their homes at about 25 and 32 years, by young male social science graduates. The tests in schools measured individual characteristics such as intelligence, attainment, personality, and psychomotor impulsivity, while information was collected in the interviews about such topics as living circumstances, employment histories, relationships with females, and leisure activities such as drinking, fighting, drug taking, and other kinds of offending. On all occasions except at ages 21 and 25 years, the aim was to interview the whole sample, and it was always possible to trace and interview a high proportion. For example, 389 of the 410 males still alive at 18 years (95%) were interviewed, and 378 of the 403 males still alive at 32 years (94%).

In addition to the interviews and tests with the boys, interviews with their parents were carried out by female social workers who visited their homes. These took place about once a year from when the boy was 8 years until when he was aged 14-15 years and was in his last year of compulsory education. The primary informant was the mother, although many fathers were also seen. The parents provided details about such matters as family income, family size, their employment histories, their child-rearing practices (including attitudes, discipline, and parental agreement), their degree of supervision of the boy, and his temporary or permanent separations from them.

The boys' teachers also completed questionnaires, when the boys were aged about 8, 10, 12 and 14 years. These provided information about the boys'

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troublesome and aggressive school behaviour, their attention difficulties, their school attainments and their truancy. Ratings were also obtained from the boys' peers when they were in their primary schools, about such topics as their daring, dishonesty, troublesomeness, and popularity.

In addition, repeated searches have been carried out in the central Criminal Record Office in London to try to locate findings of guilt sustained by the boys, by their parents, by their brothers and sisters, and (in recent years) by their wives and cohabitantes. Convictions were only counted if they were for offences normally recorded in this Office, thereby excluding minor crimes such as common assault, traffic infractions and drunkenness. The most common offences included were thefts, burglaries, and unauthorized takings of motor vehicles. However, we did not rely on official records for our information about offending, because we also obtained self-reports of offending from the males themselves at every age from 14 years onwards.

The Cambridge Study has a unique combination of features: (1) eight face-to-face interviews with the males have been completed over a period of 24 years, from age 8 to 32 years; (2) the main focus of interest is on crime and delinquency; (3) the sample size of about 400 is large enough for many statistical analyses but small enough to permit detailed case histories of the boys and their families; (4) the attrition rate is unusually low for such a long-term survey; (5) information has been obtained from multiple sources: the males, their parents, teachers, peers and official records; and (6) information has been obtained about a wide variety of theoretical constructs at different ages, including biological (eg heart rate), psychological (eg intelligence), family (eg parental discipline) and social (eg socioeconomic status) factors.

Measures

For the present analyses, each variable was dichotomized, as far as possible, into the 'worst' quarter of boys (eg the quarter with the lowest income or lowest intelligence) versus the remainder. This was done in order to compare the importance of different variables and also to permit a 'risk factor' approach. Because most variables were originally classified into a small number of categories, and because fine distinctions between categories could not be made very accurately, this dichotomizing did not usually involve a great loss of information. The one-quarter/three-quarters split was chosen to match the prior expectation that about one-quarter of the sample would be convicted as juveniles. Variables were not included in the analysis if less than 90% of the sample were known on them.

At the age of 18, the convicted males were significantly more antisocial than the unconvicted ones in many different respects. West and Farrington¹ developed a composite measure of antisocial behaviour at age 18 years based on the following components; (1) an unstable job record, reflecting frequent short-term jobs, being sacked, and periods of unemployment; (2) high sexual activity, reflecting a large number of sexual partners, a high frequency of sexual intercourse, and an early age of onset of sex; (3) heavy gambling, reflecting a large amount of money staked each week; (4) heavy smoking, reflecting a high daily consumption and an early age of onset; (5) driving after drinking at least 10 units of alcohol (where 1 unit=1 half-pint of beer or cider, 1 glass of wine or sherry, or 1 single

measure of spirits); (6) drug use, principally marijuana, amphetamines and LSD; (7) spending leisure time hanging about on the street; (8) involvement in anti-social group activities; (9) high violence, reflecting frequent fighting and carrying and using weapons; (10) anti-establishment attitudes (negative to police, school, rich people, civil servants and hard work); and (11) tattooed.

Of the 389 males interviewed at age 18 years, 110 were identified as the most antisocial, because they scored 4 or more points out of 11 on this scale. The components of antisocial behaviour deliberately did not include the kinds of property offences that predominated among convictions. Nevertheless, 70% of the 110 antisocial males were convicted up to age 20 years, in comparison with only 16% of the remaining 279 interviewed at age 18 years, a highly significant difference ($\chi^2=102.0$, 1 df, $P<0.0001$, one-tailed test used in the light of the clear directional prediction; all significance tests in this paper are of this type). This shows again the fact that crimes of dishonesty are essentially one element of a larger syndrome of antisocial behaviour.

By age 32 years, over one-third of the males (153, or 37%) had been convicted of criminal offences. As before, convicted males at age 32 years differed significantly from unconvicted ones in most aspects of their lives. For example, convicted males scored higher than unconvicted ones on the General Health Questionnaire (GHQ), which measures psychiatric disorder⁷. Nearly half (47%) of the 90 males scoring 5 or more on the GHQ (indicating a psychiatric case) were convicted, in comparison with one third (34%) of the remaining 288 interviewed ($\chi^2=4.43$, $P<0.02$).

Farrington *et al.*⁸ developed a general measure of social dysfunction at age 32 years, based on the following components: (1) poor accommodation, reflecting renting rather than home ownership, poor home conditions, and frequent moves in the past 5 years; (2) poor cohabitation history, reflecting divorce or separation, no wife or cohabitee, or conflict with a wife or cohabitee; (3) difficulties with children, reflecting separation from children, inconsistent handling, and child problems such as lying, stealing, temper tantrums and restlessness; (4) poor employment history, reflecting low take-home pay, low socioeconomic status jobs, and frequent unemployment in the past 5 years; (5) high substance abuse, including alcohol, marijuana and other drugs; (6) involvement in fights in the past 5 years; (7) committing property offences such as burglary, taking vehicles and shoplifting in the past 5 years; (8) convicted in the past 5 years; and (9) psychiatric disorder, as indicated by a GHQ score of 5 or more.

All the dichotomized components of the dysfunction score were significantly intercorrelated, with only two exceptions: psychiatric disorder was not significantly related to involvement in fights or convictions in the past 5 years. Each man was scored according to the percentage of these nine components on which he was considered to be dysfunctioning. (Where a man was not known on one component, for example if he had no children, the percentage score was based on 8 components.) Other work on this survey⁸ showed that men with a dysfunction score greater than 33%, failing on more than three of the nine criteria, were also, independently, rated by the interviewers as leading relatively unsuccessful lives. Although the dysfunction score is somewhat arbitrary in its

Table 1. Childhood precursors of antisocial behaviour, conviction and social dysfunction

Childhood precursor	Antisocial behaviour	Odds ratio conviction	Social dysfunction
(A) Low family income (23%)	2.9**	2.2**	2.8**
(A) Large family size (24%)	3.1**	3.1**	2.3**
(A) Poor housing (37%)	2.1*	2.6**	1.5*
(A) Low social class (19%)	2.0*	1.5	1.4
(B) Poor child-rearing (24%)	1.7*	1.9*	1.3
(B) Poor supervision (19%)	2.4*	2.6**	1.8*
(B) Separated (22%)	2.0*	2.6**	2.4**
(B) Nervous mother (32%)	2.0*	1.6*	1.3
(C) Convicted parent (25%)	4.0**	3.3**	2.4**
(C) Delinquent sibling (11%)	3.1**	2.7*	1.4
(C) Behaviour problem sibling (38%)	2.1*	2.2**	2.1*
(D) High delinquency school (21%)	1.8*	2.6**	2.2*
(D) Low non-verbal intelligence (25%)	2.3**	2.5**	1.3
(D) Low verbal intelligence (25%)	1.8*	1.9*	1.6
(D) Low attainment (23%)	2.1*	3.1**	2.0*
(E) High daring (30%)	3.2**	3.2**	1.6*
(E) Poor concentration/restless (20%)	2.0*	2.0*	2.2*
(E) High impulsivity (25%)	1.5	2.0*	1.9*
(F) High troublesomeness (22%)	3.6**	3.8**	1.9*
(F) High dishonesty (25%)	1.9*	2.4**	2.6**
(G) Small (18%)	1.6*	1.6*	2.1*
(G) Light (18%)	1.7*	1.2	1.9*
(H) Few friends (12%)	-2.4*	-2.6**	1.1
(H) Nervous-withdrawn (24%)	-1.6	-1.4	1.7*

* $P < 0.05$, ** $P < 0.001$ (one-tailed)

derivation, it reflects real differences between the men in life success.

The percentage of males who were convicted by age 32 years increased with the dysfunction score. About a quarter of the males had a dysfunction score over 33%, and these 93 males were considered to be relative social failures. Two-thirds of them (67%) were convicted. In comparison, 21% of 90 men scoring 0, 23% of 96 scoring 1-17%, and 36% of 99 scoring 18-33%, were convicted. Teenage antisocial behaviour significantly predicted adult social dysfunction; 41% of the antisocial males became adult failures, versus 19% of the remainder ($\chi^2 = 17.9$, $P < 0.0001$).

Results

Table 1 shows the childhood (age 8-10 years) precursors of teenage antisocial behaviour at age 18 years and adult social dysfunction at age 32 years. For comparison, the predictors of convictions up to age 32 years are also shown. The strength of each relationship is summarized by the odds ratio (OR). For example, 93 of the males (23%) came from low income families. Of these, 48 (52%) were convicted, compared with 105 of the remaining 318 males (33%). The OR here is the odds of conviction for low income males (48/45) divided by the odds of conviction for the remainder (105/213), and this comes to 2.2. The OR shows the increase in risk associated with each childhood precursor, so low income more than doubled the risk of conviction. The significance of the OR was tested by the value of χ^2 (corrected for continuity) from the 2x2 table. Negative values of the OR indicate negative relationships; for example, boys with few or no friends at age 8 years tended not to be convicted.

Following previous research on this study^{9,10}, the childhood precursors have been grouped into six major conceptual categories, indicated by the letters A-F in Table 1: (A) economic deprivation (low family income,

large family size, poor housing, low socio-economic status); (B) poor parenting (poor child-rearing, including harsh or erratic discipline and marital disharmony, poor supervision, separation from a parent, and a nervous mother); (C) antisocial family (a convicted parent, siblings with behaviour problems or delinquent); (D) school problems (low intelligence and attainment, high delinquency rate school); (E) hyperactivity-impulsivity-attention deficit (high daring, poor concentration or restlessness, high psychomotor impulsivity); and (F) antisocial child behaviour (troublesomeness or dishonesty). The variables included in each category were significantly inter-related. In addition, a seventh category (G) of physical measures (height and weight) and an eighth category (H) reflecting nervousness and social isolation of the boy are included in Table 1.

Logistic regression analyses were carried out to investigate which were the most important independent predictors of teenage antisocial behaviour, convictions, and adult social dysfunction. Troublesomeness and dishonesty were excluded from these analyses, because the aim was to investigate variables that were possibly causal. The link between troublesomeness at age 8-10 years and antisocial behaviour at age 18 years probably reflects the continuity of antisocial personality rather than any causal effect.

Table 2 shows the results of the logistic regression analyses. The most important independent childhood predictors of teenage antisocial behaviour were: a convicted parent, high daring (according to peers and parents), large family size (four or more siblings) having few or no friends (negatively related), a nervous mother (based on ratings by psychiatric social workers, psychiatric treatment and high neuroticism scores on a health questionnaire), and low non-verbal intelligence (on the Progressive Matrices test). In order to obtain a measure of the efficiency of the

Table 2. Results of logistic regression analyses

	LRCS change	P (one- tailed)
Antisocial behaviour at 18 years		
(C) Convicted parent 10	28.31	0.0001
(E) High daring 8-10	23.66	0.0001
(A) Large family size 10	10.87	0.0005
(H) Few friends 8 (-)	4.12	0.02
(B) Nervous mother 10	2.82	0.05
(D) Low non-verbal intelligence 8-10	2.36	0.06
Conviction up to 32 years		
(A) Large family size 10	27.99	0.0001
(C) Convicted parent 10	16.80	0.0001
(E) High daring 8-10	14.13	0.0001
(A) Poor housing 8-10	8.48	0.002
(H) Few friends 8 (-)	10.04	0.0008
(B) Separated 10	6.74	0.005
(D) Low attainment 10	6.69	0.005
Social dysfunction at 32 years (vs 8-10)		
(A) Low family income 8	12.82	0.0002
(B) Separated 10	6.06	0.007
(E) Poor concentration/restless 8-10	5.10	0.01
(H) Nervous-withdrawn 8	3.11	0.04
(C) Convicted parent 10	2.07	0.07
Social dysfunction at 32 years (vs 8-18)		
Poor relation with parents 18	18.53	0.0001
Unskilled manual job 18	15.99	0.0001
No exams taken 18	6.53	0.005
Nervous withdrawn 8	5.91	0.008
Small 14	3.91	0.02
Hospitalized for illness 18	3.67	0.03
Poor concentration/restless 12-14	3.21	0.04
High neuroticism 14	2.77	0.05

LRCS=Likelihood Ratio Chi-squared

combined predictor, the boys who actually become antisocial (about a quarter of the sample) were compared with an equal number of males with the highest predicted probabilities of becoming antisocial. Just over half (55%) of those predicted to be antisocial actually became antisocial, whereas 18% of those not predicted to be antisocial actually became antisocial, giving quite a high OR for this prediction of 5.7.

The most important childhood predictors of convictions were quite similar to the most important predictors of teenage antisocial behaviour: large family size, a convicted parent, high daring, poor housing, few friends (negative), separation from a parent (for reasons other than death or hospitalization) and low junior school attainment. Nearly three-quarters of those predicted were convicted (71%), whereas 22% of those not predicted were convicted, giving a very high OR of 9.0. Hence, convictions could be predicted quite well from childhood factors.

The most important childhood predictors of adult social dysfunction at age 32 years were: low family income, separation from a parent, poor concentration or restlessness, nervous-withdrawn, and a convicted parent. Less than half of those who were predicted (42%) actually showed adult dysfunction, compared with 19% of those not predicted (OR=3.0). Hence, adult social dysfunction was predicted less well than teenage antisocial behaviour, but this is not surprising in light of the much greater time interval

between the predictors and the outcome (22 years as opposed to 8 years).

Many variables were measured in this survey after childhood, during the teenage years. In order to investigate how far social dysfunction at age 32 years could be predicted later, at age 18 years, possibly explanatory variables measured up to age 18 years were added to those measured at age 8-10 years in a logistic regression analysis. Unfortunately, it was difficult to decide which variables were possibly explanatory. Variables measuring some type of anti-social behaviour were excluded. However, variables which do not obviously measure antisocial behaviour, such as a poor relationship with the parents, not taking any examinations and an unskilled manual job might conceivably be consequences of an antisocial personality rather than causal. Nevertheless, these kinds of variables were included in the analysis as possible predictors of adult social dysfunction.

Table 2 shows that the most important independent predictors of adult social dysfunction at age 32 years were: a poor relationship with the parents at age 18 years, an unskilled manual job at age 18 years, no examinations taken by age 18 years, nervous-withdrawn at age 8 years, relatively small at age 14 years, hospitalized for illness between ages 16 and 18 years, poor concentration or restlessness at age 12-14 years and high neuroticism at age 14 years (on the New Junior Maudsley Inventory). About half of those predicted (52%) showed dysfunction, compared with 15% of those not predicted (OR=6.1). This is a considerable improvement on the predictive efficiency based only on factors measured at age 8-10 years.

Discussion

It is clear that childhood factors predicted teenage antisocial behaviour, adult dysfunction and offending. The most important predictors were measures of economic deprivation, poor parenting, an antisocial family and hyperactivity-impulsivity-attention deficit.

Farrington¹¹ proposed a theory to explain why these factors predicted offending by males. He suggested that the most important motives energizing offending were desires for material goods, excitement and status with peers. Boys from poorer families were less able to achieve these goals by legitimate means, and so they tended to commit offences. Boys exposed to effective child-rearing methods (consistent, firm but kindly discipline and close supervision) tended to build up internal inhibitions against offending in a social learning process, whereas those raised in antisocial families tended to develop antisocial attitudes and beliefs in a modelling process. Whether a boy with some degree of antisocial personality offended in any situation depended on his perception of the costs and benefits of offending and non-offending alternatives, and more impulsive boys were more likely to offend because they were less likely to consider future possible consequences (as opposed to immediate benefits).

This theory could be extended to explain the development of adult social dysfunction, which might also depend on similar underlying motives, inhibitions, attitudes and decisions. However, the major difference between teenage antisocial behaviour and adult social dysfunction was that being nervous-withdrawn and having few friends were negatively related to teenage antisocial behaviour but positively related to adult social dysfunction. Childhood social isolation was a

protective influence against offending¹², but it was also noted⁸ that non-offending males characterized by social isolation tended to be leading rather unsuccessful lives at age 32 years on various criteria.

Adult social dysfunction depends on both 'externalizing'¹³ behaviour (eg convictions, violence) and 'internalizing' behaviour (eg psychiatric disorder, substance abuse). Adult psychiatric disorder was specifically predicted by childhood nervousness. Hence, the development of adult social dysfunction should be explained not only by reference to established causes of externalizing (antisocial) behaviour such as economic deprivation, poor parenting and impulsivity but also by reference to causes of internalizing behaviour such as childhood nervousness and social isolation.

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Forthcoming events

Affective Illness

18-22 January 1993, Grindelwald, Switzerland
 Further details from: ROSTRUM, Lewis House, 1 Mildmay Road, Romford, RM7 7DA (Tel: 0708 735191; Fax: 0708 734876)

Good Clinical Practice: A Basic Course

19-20 January 1993, Royal Society of Medicine, London
 Further details from: (see entry for 18-22 January 1993)

Introduction to Regulatory Affairs

3-4 February 1993, London
 Further details from: (see entry for 18-22 January 1993)

Recent Advances in Neurology

11-13 February 1993, San Francisco, USA
 Further details from: Extended Programs in Medical Education, University of California, Room LS-105, San Francisco, CA 94143-0742, USA (Tel: 415 476 4251)

MRCP Part II Course

8-12 February 1992, Royal Free Hospital, London
 Further details from: Dr D Geraint James, Royal Free Hospital, Pond Street, Hampstead, London NW3 2QG (Tel: 071 794 0500)

Colorectal Disease in 1993: An International Exchange of Medical and Surgical Concepts

18-20 February 1993, Fort Lauderdale, Florida
 Further details from: The Cleveland Clinic Educational Foundation, Dept of Continuing Education, 9500 Euclid Avenue Rm TT-31, Cleveland, OH 44195-5241, USA (Tel: 800 726 8173; Fax: 216 445 9406)

Living on the Edge: Coping with AIDS and Drug Use

23 February 1993, London
 Further details from: Jan Nicholson, Conference Organiser, 22 Northwood Ave, Purley CR8 2EP (Tel: 081 668 5185)

Management of Rhinitis

26 February 1993, Queen Elizabeth Hospital, Birmingham
 Further details from: Mr A B Drake-Lee, Department of Otolaryngology, Queen Elizabeth Hospital, Edgbaston, Birmingham B15 2TH (Tel: 021 627 2297)

FAIR Seminar: Influence and Stress Related Issues

22 March 1993, Royal Society of Medicine, London
 Family Action Information Rescue (FAIR) is a voluntary organization founded in 1976. It offers support and information to individuals affected by cult organizations.
 Further information from: BCM Box 3535, PO Box 12, London WC1N 3XX (Tel: 0689 853128; Fax: 0689 862531)

Aesthetic Surgery of the Face

25-27 March 1993, San Francisco, USA
 Further details from: (see entry for 11-13 February 1993)

Advanced Cardiac Pathology

29 March 1993, London
 Further details from: Postgraduate Education Centre, National Heart & Lung Institute, Dovehouse Street, London SW3 6LY (Tel: 071 351 8172; Fax: 071 376 3442)

Lung Tumours

30-31 March 1993, London
 Further details from: (see entry for 29 March 1993)

British Association of Oral and Maxillofacial Surgeons: Spring Meeting

31 March to 3 April 1993, Cardiff
 Further details from: The Honorary Secretary, British Association of Oral and Maxillofacial Surgeons, Royal College of England, 35/43 Lincoln's Inn Fields, London WC2A 3PN (Tel: 071 405 8074; Fax: 071 430 9997)

Mediastinal Tumours

1-2 April 1993, London
 Further details from: (see entry for 29 March 1993)

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