

## Father–Son Resemblances in Aggressive and Antisocial Behaviour

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**Summary:** At a child psychiatry clinic 122 boys were scored on scales of aggressiveness, noncompliance and antisocial behaviour. Their biological fathers were scored on aggressiveness and antisocial behaviour. The fathers' scores were modestly but significantly correlated with those of their sons. The correlations were also computed separately for the 64 boys whose biological fathers were no longer in the home and for the 58 whose fathers had stayed. Father–son resemblances for the latter group were considerably higher than those observed in the whole sample, and for the father-absent group were insignificant.

Many researchers have shown that aggressive and antisocial boys tend to have fathers with the same traits (Glueck and Glueck, 1950; Robins, 1966; West and Farrington, 1973; and Stewart *et al.*, 1980). Among the probable explanations are the ideas that boys learn such patterns of behaviour from their parents (Sears *et al.*, 1957; Bandura, 1973) and that the behaviour may be caused by parental rejection (Hewitt and Jenkins, 1946; Lewis, 1954; McCord *et al.*, 1961). On the other hand, there is evidence that genes may also play a part in the origins of antisocial personality and criminality, at least in adults (Crowe, 1974; Christiansen, 1977; Hutchings and Mednick, 1977; Cadoret, 1978).

Until recently, researchers in this clinical field have simply classified subjects as having a trait or not, an approach which has worked well but has definite limits. However, Cadoret (1978) has shown the power of measuring antisocial behaviour as well as categorizing subjects in a study of adoptees. Presumably researchers will follow this lead and before long information such as the correlations of aggressiveness in subjects and their spouses or their immediate relatives will be available. Together with data on twins and adoptees these will help to define the relative influence of environment and genes in forming the traits.

In this paper we report a first attempt at measuring the resemblances between fathers and sons in aggressive and antisocial behaviour. Our sample of boys was taken from children attending a child psychiatry clinic. The fathers whose behaviour we studied were all biological fathers of the subjects.

### Methods

#### *Subjects*

The original subjects were 126 boys consecutively admitted to the University of Iowa's Child Psychiatry Clinic who met the following criteria: one or other of their natural parents, or an immediate relative, was available for interview; they were between five and 14 years old; their IQ's were greater than 55; and they were free of definite brain damage or dysfunction, and free of psychosis. For this study we dropped four boys whose parents were not interviewed.

#### *Instruments*

Data on the boys' behaviour were collected from either the natural mother or father through a structured interview which included questions on 70 common emotional and behavioural symptoms of childhood. Details of the interview and evidence for its reliability and validity have been reported by Stewart *et al.* (1981). Data on the parents' own psychiatric histories were taken in separate interviews with the natural mother and father. The interviewer knew nothing of the boys' problems and asked parents not to mention them in the course of her interview. This interview followed a schedule which covered the parent's childhood; work, marital and medical histories; legal difficulties and problems with drinking; common psychiatric symptoms of adult life; and a family history. The last included detailed information on the childhood, adolescence and adult life of the spouse. The reliability and validity of this interview has

been described by Stewart *et al* (1980) and Stewart and deBlois (1981).

### Diagnoses

The boys were divided into two groups, those with aggressive conduct disorder and those with other diagnoses. Criteria for the former were marked and persistent physical aggressiveness to peers, resistance to discipline and either destructiveness or cruelty. Diagnoses were based on information from the referring source, parents, teachers and the examining psychiatrists. Diagnoses of fathers were made according to the criteria of Feighner *et al* (1973).

### Scales

A factor analysis of the symptoms of boys seen in our clinic (deBlois and Stewart, 1980) showed six main factors representing aggressiveness, noncompliance, reactivity, antisocial behaviour, depression and anxiety. We made a scale for each dimension using five specific items derived from the relevant factors. The scales were as follows. Aggressiveness: fighting, quarrelsomeness, physical attacks on adults, shouting at parents and extreme competitiveness. Non-compliance: resistance to discipline, not following directions, oppositional behaviour, staying out late and disrespect for adults. Reactivity: impatience, impulsivity, recklessness, being easily upset and excitability. Antisocial behaviour: lying, stealing at home, stealing from stores, firesetting and vandalism. Anxiety: worrying, fearfulness, nervousness, stomach aches, and fear of new situations. Depression: low opinion of self, sadness, crying a lot, difficulty sleeping and having few friends. In addition we arbitrarily constructed a scale of egocentricity from the items: unusual need for attention, projecting blame, inability to get along with other children, insensitiveness to others' hurts and lack of repentance. A boy's score on a given scale was the sum of items on which his mother rated him as positively deviant. In earlier work (deBlois and Stewart, 1980) each item was rated on a three-point scale; e.g. fights less than average, about average for boys his age or fights much more than average. We changed to a count of items because the data on fathers were in binary form and we wanted to apply the same method to both boys and fathers.

Corresponding scales on the fathers' aggressiveness and antisocial behaviour were constructed as follows. Aggressiveness: fights with peers as a boy; fights at work; fights with police; fights while drinking; and physically abusing wife or child. Antisocial: poor work record; money problems (e.g. passing bad checks or not repaying debts); deserting or failing to support family; illegal business (e.g. drug-dealing, professional thief); and arrests, convictions and jailings. The

fathers' scores were calculated in the same way as their sons'.

### Statistical analysis

The data were coded and then analysed using the *Statistical Package for Social Services* (Nie *et al*, 1975). Differences between groups were tested for statistical significance using Student's *t*.

## Results

### Background data

We were able to interview 117 mothers and 60 fathers. Sixty-four of the 122 boys' natural fathers had left the home, an event which was strongly associated with the father's having an antisocial personality or alcoholism. Forty-three of 64 absent fathers had one or another of the disorders compared to 16 of 58 present fathers ( $\chi^2 = 19.11$ ,  $P < 0.001$ ).

Sixty-four boys had aggressive conduct disorder and 58 received other diagnoses. These numbers differ from the ones reported in our earlier paper because the original diagnoses, which rested only on information given by mothers in the structured interview, were checked against other sources (see Methods) and revised in 20 cases. Social and psychiatric data on the boys and their parents can be found in Stewart *et al* (1980) and Stewart and deBlois (1981). The association of aggressive conduct disorder in boys with antisocial personality and alcoholism in their fathers was not affected by the change in the boys' diagnoses.

### Boys' and fathers' trait scores (Table I)

Only the boy's scores on the aggressive, antisocial and noncompliant scales are shown because we found no significant relationship between their scores on any of the other four scales and either of the father's scores. By definition the scores of boys with aggressive conduct disorder were much higher than those of boys with other diagnoses on the aggressive and noncompliant scales. The equally significant difference on the antisocial scale was relatively independent of the criteria for diagnosing aggressive conduct disorder.

The fathers of boys with the conduct disorder had significantly higher scores than fathers of the other boys, but the differences were less striking. This corresponds to our finding that the association between aggressive conduct disorder in boy patients and antisocial personality and alcoholism in their natural fathers is significant but by no means one to one (Stewart *et al*, 1980).

### Father-son resemblance (Table II)

The fathers' scores on the aggressive and antisocial scales were each related significantly to the corresponding boys' scores, and both were related to the

TABLE I  
Scales scores of boys and their fathers (mean±SD) by boys' diagnoses

	Aggressive Conduct disorder (N = 64)	Other diagnoses (N = 58)	All (N = 122)
Boys			
Aggressive	3.03±1.30***	0.98±1.03	2.06±1.56
Antisocial	1.56±1.50***	0.41±0.94	1.02±1.38
Noncompliant	2.78±1.36***	1.35±1.50	2.10±1.60
Fathers			
Aggressive	1.91±1.46*	1.36±1.45	1.65±1.45
Antisocial	2.02±1.72**	1.33±1.66	1.70±1.72

\*\*\*ACD other diagnoses: P <0.0001, \*\*ACD other diagnoses: P <0.03, \*ACD other diagnoses: P <0.04.  
(ACD aggressive conduct disorder).

TABLE II  
Product moment correlations of boys' scores and their fathers'

All boys (N = 122)			
Fathers	Aggressive	Antisocial	Noncompliant
Aggressive	.20**	.14	.18*
Antisocial	.12	.25***	.25***
Boys with aggressive conduct disorder (N = 64)			
Fathers	Aggressive	Antisocial	Noncompliant
Aggressive	.10	.07	-.04
Antisocial	.04	.24*	.20
Boys with other diagnoses (N = 58)			
Fathers	Aggressive	Antisocial	Noncompliant
Aggressive	.11	.07	.26*
Antisocial	-.07	.10	.18

\* P <0.05, \*\* P <0.03, \*\*\* P <0.006.

boys' noncompliant scores. Similar trends appear in the correlation matrices for the two subgroups of boys, but the correlations may have been affected by the restriction in variability in both boys' and fathers' scores imposed by the boys' diagnoses.

#### Effect of fathers' absence on trait scores (Table III)

There was a trend for more fathers of boys with aggressive conduct disorder to have left the home (38 of 64; 59 per cent) than fathers of boys with other diagnoses (26 of 58; 45 per cent) but it was not significant. On the other hand, fathers who had left were more likely to have antisocial personality or alcoholism than fathers who were still at home, as stated above. Correspondingly, absent fathers had

TABLE III  
Scale scores of boys and their fathers (mean±SD) divided on father's presence or absence

	Father absent (N = 64)	Father present (N = 58)
Boys		
Aggressive	2.08±1.47	2.07±1.66
Antisocial	1.14±1.47	0.83±1.22
Noncompliant	2.36±1.58	1.83±1.60
Fathers		
Aggressive	2.13±1.49*	1.12±1.29
Antisocial	2.56±1.70*	0.71±1.14

\* P <0.0001.

higher scale scores than those who were still at home, while the scores of the two groups of boys did not differ.

The mean time for which absent fathers had been gone from home was 3.9 years; the range was from two months to 14 years. Fathers of boys with conduct disorder tended to have been gone longer than the fathers of the comparison group (4.29 vs. 3.46 years, NS). The respective mean ages of the boys in the two groups were 8.97 and 10.02 years, and their ages when their fathers left home 4.68 and 6.56 years. Thus boys with conduct disorder lost their fathers about two years earlier than the others.

#### *Effect of fathers' absence on father-son resemblance (Table IV)*

The scores of fathers still present in the home were generally more highly correlated with boys' scores than was true for the whole sample (Table II), while none of the correlation coefficients for absent fathers was significant. The difference from the whole sample was most obvious in the correlations with father's aggressive scores. The coefficient for this trait in present fathers and the same trait in boys was twice that found in the whole sample. This was true also for present fathers' aggressive score and boys' antisocial score. Similarly the correlations of boys' aggressive scores with both the present fathers' traits were twice as high as the corresponding values in the whole sample.

We divided the father-absent group according to the boy's age when his father left home (less than five vs. five and over) and the number of years the father had been gone, again with five years as the dividing line. The former subgroups showed no significant correlation between fathers' and sons' behaviour, but fathers' and sons' antisocial scores were significantly related

( $N = 24$ ,  $r = 0.39$ ,  $P < 0.02$ ) in the subgroup of fathers who had been gone less than five years.

#### *Influence of boys' age, IQ, and social class*

The antisocial and noncompliant scores of boys under the age of ten were both correlated with their fathers' antisocial scores ( $N = 65$ ,  $r = 0.31$ ,  $P < 0.01$  and  $r = 0.27$ ,  $P < 0.02$  respectively). The older boys' aggressive and noncompliant scores were slightly correlated ( $r = 0.25$  and  $0.23$ ) with fathers' aggressive and antisocial scores respectively, but these findings were not statistically significant. Boys with IQ's of 95 or higher ( $N = 48$ ) resembled their fathers on aggressiveness ( $r = 0.37$ ,  $P < 0.001$ ) and antisocial behaviour ( $r = 0.31$ ,  $P < 0.02$ ). For those with lower IQ's ( $N = 74$ ) there was a relationship between the boys' noncompliance and the fathers' antisocial behaviour ( $R = 0.32$ ,  $P < 0.001$ ). Finally, we divided the boys into upper and lower socioeconomic status groups according to the occupation of whichever parent had the better-paid job. In the lower, essentially manual group there was a marginally significant relationship between fathers' and sons' antisocial scores ( $N = 76$ ,  $r = 0.23$ ,  $P < 0.05$ ). In the upper, nonmanual group the fathers' antisocial scores were related to their sons' noncompliant scores ( $N = 46$ ,  $r = 0.33$ ,  $P < 0.02$ ).

### Discussion

The number of specific types of deviant behaviour that an individual displays seems to be a valid measure of a trait such as aggressiveness. A classic example of this technique's use is Robins' (1966) demonstration that the likelihood of a boy who was seen in a child psychiatry clinic developing an antisocial personality in adult life depended on the number of different kinds of antisocial behaviour he had shown. Contemporary

TABLE IV  
*Product moment correlations of boys' and fathers' scores divided on fathers' presence or absence*

Boys with father present (N = 58)			
Fathers	Aggressive	Antisocial	Noncompliant
Aggressive	.41***	.32**	.27*
Antisocial	.34***	.31**	.25*
Boys with father absent (N = 64)			
	Aggressive	Antisocial	Noncompliant
Aggressive	.05	-.06	.02
Antisocial	.07	.15	.19

\*  $P < 0.02$ , \*\*  $P < 0.01$ , \*\*\*  $P < 0.001$ .

psychiatric diagnosis, at least in the United States, is based to a large extent on counting symptoms (Feighner *et al*, 1973; *Diagnostic and Statistical Manual of Mental Disorders*, 1980), as are a number of established clinical instruments, for example Quay's (1977) *Behaviour Problem Checklist*, the *Manifest Anxiety Scale* (Taylor, 1953) and the *Malaise Inventory* (Rutter *et al*, 1970). We have assumed, then, that our measures of fathers' and sons' traits are reasonably valid, though crude.

The results for the whole sample do show modest but significant correlations between the trait scores of fathers and those of their sons. The largest were between fathers' and sons' antisocial scores and between fathers' antisocial and sons' noncompliant scores. The latter correlation was probably due in part to the relatively high intercorrelation of the boys' antisocial scores with their own noncompliant scores ( $r = 0.44$ ) (de Blois and Stewart, 1980). The correlations shown in Table II fall in the same range as the father-son resemblances reported by Hill and Hill (1973) for MMPI scale scores. The size of the father-present correlations correspond to the most significant resemblances observed by the Hills. Coppen *et al* (1965) investigated the resemblance of adult male patients, mainly neurotic, to their immediate relatives on neuroticism and extroversion. They found high mother-son correlations but only insignificant father-son correlations. Osborn and West (1979) found that the conviction records of fathers were closely related to those of sons who were the subjects of the *Cambridge Study in Delinquent Development*.

The findings in the father-present matrix argue that parental example influences the levels both of boys' aggressive and of their antisocial behaviour, but especially the former. The contrasting lack of father-son resemblance in the father-absent group and the persistence of some resemblance among boys whose fathers had been gone a relatively short time also point to social effects on the boys' behaviour.

The absent fathers as a group had a slight influence on their sons' antisocial behaviour, but none on aggressiveness. Whether the lack of persisting influence was due to the father's absence or to the improving effect of a stepfather, or even occurred in the face of a stepfather's poor example, we cannot tell because we did not collect adequate data on stepfathers. We do know that mothers who divorced or were separated from an antisocial or alcoholic first husband fell into three equal groups. Those of one group had not remarried by the time their son came to the clinic; those of a second had married again to normal men; and those of a third had remarried to other antisocial or alcoholic men (deBlois and Stewart, *in press*). Given that two-thirds of the absent fathers

were antisocial or alcoholic, the mothers' subsequent marital history might lead to a better home for about half of the sons. An associated change for the better in this proportion of the boys would reduce the resemblance of boys to their absent fathers. It is possible also that a mother's marriage to a second deviant man would lead to worsening of her son's behaviour, again affecting the resemblance to the natural father. Rutter's (1971) findings on the association of parental discord and antisocial behaviour in boys suggest that such worsening would be probable rather than possible.

One explanation for the negative findings in the father-absent matrix can be ruled out; namely that we underestimated the levels of aggressiveness and antisocial behaviour in absent fathers because we could not collect information from them personally. Though the data were more limited on absent fathers, their scores on aggressiveness and antisocial behaviour were still significantly higher than those of fathers who stayed in the home.

Our positive findings support the influence of environment on the two traits. Does the failure to find resemblances between boys and their absent fathers argue against genetic influences? For several reasons we think not. An obvious limitation of the study was that we looked at a father's resemblance to one son in the family and that boy was selected for some form of deviance. Extraneous factors having to do with referral may also have influenced the selection. The children of antisocial or alcoholic men are particularly likely to be involved in referral biases. The poverty, instability and violence common to such men's families (Robins, 1966) come to the attention of social service workers, who then refer the children to psychiatric clinics for a variety of emotional and behavioural problems. A persistent similarity in absent fathers and their sons would have been consistent with genetic influences. The lack of it may well have resulted from the idiosyncrasies of our sample.

Whether genes actually have specific roles in the origin of children's behaviour problems is a moot question. Aggressiveness is known to be unusually stable from early childhood into adult life (Olweus, 1979), a fact which might imply genetic determinants but could equally result from a persistently poor environment. Antisocial tendencies are also stable, at least after the age of ten (Gersten *et al*, 1976). However, investigators who have looked for direct evidence of genetic influences on these traits in children have reported contradictory results. Bohman (1971) discovered no relation between the social adjustment of 163 children and records of criminality or alcoholism in their biological parents. On the other hand, Cadoret *et al* (1975) and Cadoret and Gath



(1980) found that hyperactivity, broadly defined, in adopted children was associated with antisocial behaviour and alcoholism in their biological parents. O'Connor *et al* (1980) rated a number of traits in 216 twins and found that identical twins resembled each other on aggressiveness more closely than did same-sexed fraternal twins, but their methods were open to criticism on several counts.

Our subjects' ages ranged from five to 14 and it is quite possible that this variable affected the fathers' influence on their behaviour. In fact, we found that younger boys were more like their fathers than were the boys aged ten or older. One reason may have been that the proportion with conduct disorder was lower in the older group (38 per cent) than among the younger (58 per cent). This might have reduced the relative variability of scores in the former and thus lessened the likelihood of a significant correlation between fathers' and sons' behaviour. A more likely explanation lies in the finding that the older boys whose fathers were absent had been separated from their fathers longer (mean = 6.5 years) than the corresponding younger boys (mean = 4.5 years). As we noted earlier, father-son resemblances seemed to persist until the father had been gone five years or longer.

The possibility remains, however, that age itself was a significant factor; that the fathers' behaviour affected the younger boys differently than the older. Rutter (1966) observed just such a phenomenon in his study of children whose parents were sick. Children under the age of 12 when their parent first had psychiatric symptoms were more likely than those older to have a psychiatric disorder themselves. On the other hand, data from studies on antisocial behaviour in children seem inconsistent with Rutter's observation, which concerns psychiatric disorder in general. Robins (1966) found that having an antisocial father increased the risk of a boy's antisocial behaviour persisting into adult life regardless of the length of his exposure to the father. Similarly, Osborn and West (1979) observed that father's and sons' records of conviction resembled each other even when the father was last convicted before the son was born. Another finding that bears on this issue is that the first signs of aggressive conduct disorder usually appear when a boy is between three and five years old (Behar and Stewart, 1982), suggesting that whatever social influence the father has on its origins is exercised early in the boy's life.

In contrast to age the boys' intelligence and socioeconomic status did not seem to affect the general pattern of father-son resemblances.

Finally, we should point out a large gap in this study. We do not have data on how the mothers' behaviour affected the boys. Our clinical experience has been that the mothers of boys with conduct disorder follow

the pattern described by Patterson (1974); that is, they tend to scold the boys constantly and to be unduly critical of them. Unfortunately, we do not have systematic observations on such interactions. We do have quite detailed information on the mothers' psychiatric symptoms but have so far not found them to be related to their sons' symptoms.

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