

## **THE INTELLIGENCE AND EDUCATIONAL ATTAINMENT OF BORSTAL TRAINEES IN NORTHERN IRELAND**

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Boys (N 395) committed for Borstal training in Northern Ireland during a six year period were tested on two measures of intelligence and four of educational attainment. Results indicated ability in the dull normal range performance being better on the non verbal intelligence test, with attainments at junior school level. Family size was of some significance but scores on all tests were highly correlated and not obviously related to attendance at controlled or maintained schools or to previous committal to training establishments.

It has long been recognized that the number of factors related to delinquency is large (18) and, at the same time, that this is an area in which the limitations of correlational studies are particularly apparent (38). Yet, accepting that social phenomena depend upon a complexity of causes and that correlations are usually more properly regarded as descriptive rather than inferential, there need be little surprise at the absence in the research literature of evidence regarding simple causal relationships. Furthermore, it has been pointed out (8) that to avoid asking 'what' because one cannot answer 'why' may be philosophically dubious and may lead both to bad science and to bad decision making. Fact gathering, though often unexciting, is fundamental. What follows is based on the premise that it may be useful to describe accurately some aspects of a population of delinquents or to identify some relevant social conditions, such description may possibly assist prediction or inform a limited range of decisions.

There is a long standing tradition that education, or lack of it, is a contributory factor in juvenile crime (14) and it is now scarcely open to question that there is a negative relationship between delinquency and educational attainment (32), reading disability (24, 25, 27) and poor numerical skills (35) being especially common. In some studies the school appears to be even more influential than the home. For example, in Hirschi's (15) investigation, results of numerous tests gave a consistent picture the higher a boy's score, the less likely was he to have committed

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delinquent acts Official records showed that delinquency was closely related to test scores and even more closely related to average school marks or grades

It is probable that educational attainment reflects a complex interaction between personal characteristics, home circumstances and the nature of the school (33) A variety of features has been noted in many of the schools attended by delinquents (12, 15, 22), but possibly as important as the objective properties of the school is the individual's perceptions of it, perceptions no doubt influenced by social attitudes and family background

Although the relationship is far from perfect (6), delinquency, particularly serious delinquency, does appear to be generally a lower class phenomenon (7, 20) Much has been written about the problems of adjustment of the lower class boy in school (29) and his consequent predisposition to associate with delinquents (1, 3, 4) Yet, while some may feel that the experience of such a boy is unpleasant, degrading and even demoralizing (10), there is evidence that indifference towards irrelevant curricula, disinterested teachers and impotent school authorities may be more common than active alienation (15, 27, 28)

The influence of the family is often stressed (19, 32) and, of the many family characteristics and attributes which are mentioned, it appears that family size and birth order may be of particular significance (9, 30, 33) Again, complex interaction may be assumed Fogelman (11) noted that family size is related to type of housing and to overcrowding which, in turn, are connected with social adjustment and school attainment, the relationship with attainment becoming more apparent with age Cook (5) has suggested that families of four or more become increasingly child oriented, with a corresponding decrease in emphasis on adult standards of behaviour, such a background may contribute to the difficulties of later-born children in conforming at school

A possible explanation of poor educational attainment among delinquents might be that they are relatively unintelligent but, not surprisingly, this is a controversial view On the one hand, there is much evidence of 'limited intellectual capacity' (2, 23, 29, 36) but the range of intelligence among delinquents remains considerable (30) and the negative relationship between intelligence and delinquency is sometimes said to be small or even non-existent (3, 26, 38) Stratta (27) exemplifies a tendency to perceive the delinquent as not merely the intellectual equal of anyone else but even

slightly more capable and conscious of his capacity. Without entering a general discussion of intelligence testing, one might surmise that the apparent differences between delinquents and others may vary with consideration of different aspects of intelligence (37) and different forms of delinquency (33). Cultural factors related to social class are likely to influence test scores, the differences between social groups, on verbal and non verbal tests, increasing with age (7).

The present investigation was an attempt to assess systematically the intelligence and basic educational attainments of boys committed for Borstal training in Northern Ireland and to examine possible relationships between test scores, family size, ordinal position in family and certain aspects of previous educational and institutional experience. The programme of testing was undertaken in the absence of any similar body of data in the province and of a uniform assessment procedure for boys committed to such institutions in the United Kingdom as a whole.

#### METHOD

##### *Sample*

The subjects of the investigation were 395 boys committed to Borstal in Northern Ireland over a period of six years. This figure represents the total number of consecutive entrants with the exception of a small number who did not take the tests, either because they were totally illiterate or because they were released on bail after a matter of days.

##### *Procedure*

Two measures of intelligence were used: the Otis Quick scoring Test (Beta Form) and Raven's Standard Progressive Matrices, still regarded as a good test of abstract reasoning (16) and calculated to minimize the effect of reading disability. To assess educational attainment, four of Schonell's Diagnostic and Attainment Tests were used: Graded Word Reading Test, Graded Word Spelling Test A, Essential Mechanical Arithmetic, Form A, Essential Problem Arithmetic, Form A. The writers share some of the reservations about the use of age scores as measures of competence (31) but decided to use them because of their continuing popularity with teachers and use in educational research (17).

Testing was carried out, in each case, within a few days of committal and the tests were administered in the order in which they are listed above. Each subject was interviewed briefly and relevant personal details were

recorded date of birth, family size, ordinal position in family. It was possible to check this information against official records which also gave details of previous institutional treatment, if any, and of religious affiliation. This last was considered of importance since, in Northern Ireland, the school system, at primary and secondary level, is almost completely segregated on religious lines into 'maintained' schools attended by Catholics and 'controlled' schools attended by others. (Only two boys out of the entire number had attended selective grammar schools.) Furthermore, the training schools for younger delinquents are also segregated and boys entering Borstal were, therefore, products of two educational systems, parallel but virtually distinct.

### RESULTS

*Age and background* The mean age of the subjects at committal was 17 years and 8 months (SD 13 months) and the distribution of ages is shown in Table 1. Of the total number, 205 had attended 'maintained' schools, the remaining 190 had attended 'controlled' schools. Two hundred and seventy four had previously been in other residential institutions: mental hospitals (two), orphanages (two), special care schools (four), Borstals (six), remand centres (seven), prisons (twenty nine) and training schools (two hundred and twenty four). The Catholics came from families with a median size of seven and an interquartile range of 5 to 10, the others

TABLE 1

AGE DISTRIBUTION OF SUBJECTS (N 395)

Age range	Frequency
15 0 - 15 11	5
16 0 - 16 11	105
17 0 - 17 11	127
18 0 - 18 11	98
19 0 - 19 11	49
20 0 - 20 11	11

from families with a median size of six and an interquartile range of 4 to 8. The median ordinal position of the subjects in their families was three, with an interquartile range of 2 to 5.

*Intelligence* Mean scores on the Otis Quick scoring Test and on the Standard Progressive Matrices were respectively 84.28 (*SD* 13.69) and 91.72 (*SD* 13.76)

*Attainment* Scores on the four tests of educational attainment are summarized in Table 2. Although attainment quotients are included in the table, it is recognized that, in the case of older subjects, these are inevitably somewhat artificial.

TABLE 2

## SUMMARY OF SCORES ON TESTS OF EDUCATIONAL ATTAINMENT

Test	Mean Attainment Age	Mean Attainment Quotient	SD
Graded Word Reading	11.0	62.26	11.32
Graded Word Spelling	10.6	59.43	11.79
Mechanical Arithmetic	11.0	62.26	11.32
Problem Arithmetic	11.11	67.45	12.26

*Correlations* The matrix of product moment correlations (Table 3) is quite interesting although, at best, it raises questions rather than providing answers. Scores on the two intelligence tests are positively and significantly correlated ( $r = .70$ ,  $p < .002$ ). Each of them is positively and significantly correlated with scores on each of the four measures of attainment ( $r = .41$  to  $.73$ ,  $p < .002$ ), correlations involving the Otis Quick scoring Test being higher in every case. There is a significant negative correlation between family size and scores on the Standard Progressive Matrices ( $p < .01$ ). Family size also shows small negative correlations with age at committal, with Otis scores and with scores on each measure of attainment. The positive correlation between family size and ordinal position in family ( $p < .002$ ) is not entirely explained by the obvious consideration that in very small families birth order may be less meaningful.

*Institutional experience* It was thought possible that there might be important differences between certain subgroups defined in terms of their previous educational and institutional experience. Accordingly, four groups, each of fifty boys, were chosen. Two groups contained former pupils of 'controlled' schools and two contained former pupils of 'maintained' schools. For each type of school, one group consisted of

TABLE 3

PRODUCT MOMENT CORRELATIONS FOR ALL VARIABLES FOR ALL SUBJECTS (N 395)  
(DECIMALS OMITTED)

		1	2	3	4	5	6	7	8	9
Age at committal	1		12	-04	-06	02	06	03	-02	00
Position in family	2			58**	-01	-02	03	03	01	05
Family size	3				09	13*	06	05	07	03
Otis	4					58**	70**	68**	70**	73**
Progressive Matrices	5						43**	41**	57**	56**
Word Reading	6							89**	61**	65**
Word Spelling	7								07**	70**
Mechanical Arithmetic	8									86**
Problem Arithmetic	9									

\*  $p < .01$  \*\*  $p < .002$

boys who had been sent to training schools following earlier convictions and one consisted of boys who had not. Within these constraints, selection was random.

For these four sub groups, a series of 2 x 2 analyses of variance was carried out on the available data. There were no significant differences or interaction effects except in relation to family size, the mean sizes of family for 'controlled' school and 'maintained' school pupils were respectively 6.09 and 7.40 and the differences between them was significant ( $F = 5.68, df = 1, 196, p < 0.025$ ).

#### DISCUSSION

Any attempt to draw general conclusions based on performance on the intelligence tests of subjects in this study might readily reflect certain preconceptions. Whether we regard performance on the tests as evidence that the subjects are 'a little below average intelligence on the whole' (37) is to some extent a matter of interpretation. The Otis scores scarcely support Woodward's view that the mean intelligence quotient of delinquents in Britain is 'at least 90' but the scores on the Standard Progressive Matrices are clearly compatible with it and with her opinion that non verbal tests would give 'something nearer the population mean of 100', although a mean score of 91.72 is not exactly a close approximation to that figure. The Standard Progressive Matrices test cannot, without over simplification, be described as a 'non verbal' test but, to the extent that it may be thought to minimize any handicap resulting from an impoverished linguistic background, it is not surprising that it yielded a significantly higher mean score than the Otis Quick scoring Test ( $t = 7.80, df = 788, p < 0.001$ ).

Considered in relation to the distribution of ages at committal, the attainment test scores are less than encouraging. Certain writers take the view that anyone with a Reading Age of 10.6 or 11.0 can manage sufficiently well to deal with the demands of everyday life, such as reading a newspaper. Leaving aside questions about quality of life (or of newspaper) it would give concern that half the boys in the group under consideration fall below this modest standard on the Graded Word Reading Test. It is evident that the educational service in Borstal institutions is faced with a formidable task in assisting many of these boys to attain the degree of literacy advocated by the Home Office (13). It would also seem that an improvement in the level of general education may be a prerequisite of the desired expansion of vocational training and cultural activities.

Our data on inter-correlations might justify speculation that, even within a group which is by its nature pre selected, membership of larger families is likely to be associated with slightly lower intelligence and attainment and that members of such families, especially younger members, may be in serious trouble at an earlier age

It is conceivable that committal to Borstal after having been an inmate of a training school could be regarded as evidence of persistence in delinquency but, if so, we do not appear to have found evidence that such persistence is strongly related to family size, to reading and numerical ability, or to scores on intelligence tests which are highly correlated with attainment scores. More generally, it is clear that this exploratory study neither proves nor disproves anything, this is not unexpected from a tentative, hypothesis seeking approach to a complex situation in what has elegantly been termed 'its natural messiness' (21), not yet constrained and simplified out of recognition

#### REFERENCES

- 1 BONDESON U Argot knowledge as an indication of criminal socialisation *Scandinavian Studies in Criminology* 1968 2 73 108
- 2 BURT C *The young delinquent* London University Press 1925
- 3 CLOWARD R K and OHLINE L E *Delinquency and opportunity* New York Free Press 1960
- 4 COHEN A *Delinquent boys The culture of the gang* London Routledge and Kegan Paul 1956
- 5 COOK P *Sibling rivalry Its forms, socialisation and consequences* SSRC Report No HR 1155 London Social Sciences Research Council 1975
- 6 DENTLER R A and MONROE L J Social correlates of early adolescent theft *American Sociological Review* 1961 26 733 743
- 7 DOUGLAS J W B ROSS J M HAMMOND W A and MULLIGAN D G Delinquency and social class *British Journal of Criminology* 1966 6 294 302
- 8 EDWARDS W GUTTENTAG M and SNAPPER K A decision theoretic approach to evaluation research In Struening, E L and Guttentag M (Eds) *Handbook of evaluation research* London Sage 1976
- 9 FARRINGTON D P Self reports of deviant behaviour Predictive and stable *Journal of Criminal Law and Criminology* 1973 64 99 100
- 10 FLOUD J E (Ed) *Social class and educational opportunity* London Heinemann 1956
- 11 FOGELMAN K R Developmental correlates of family size *British Journal of Social Work* 1975 5 43 57
- 12 GATH D COOPER B GATTONI F and ROCKETT, D *Child guidance and delinquency in a London borough* London Oxford University Press 1975



- 13 GREAT BRITAIN HOME OFFICE *Prisons and borstals* London HMSO 1960
- 14 GREAT BRITAIN *Report from Select Committee on Criminal and Destitute Children* British Parliamentary Papers Volume XXIII 1852 53
- 15 HIRSCHI T *Causes of delinquency* Los Angeles University of California Press, 1969
- 16 KEATING D P (Ed) *Intellectual talent Research and development* Baltimore Johns Hopkins University Press 1976
- 17 KELLAGHAN T The organization of remedial instruction for slow learning pupils *Irish Journal of Education* 1974 8 102 110
- 18 MACK J A Juvenile delinquency research A criticism *Sociological Review* 1955 3 47 64
- 19 MATZA D *Delinquency and drift* New York Wiley 1964
- 20 MORRIS, T *The criminal area* London Routledge and Kegan Paul 1957
- 21 NEWSON J and NEWSON E Parental roles and social contexts In Shipman M (Ed) *The organisation and impact of social research* London Routledge and Kegan Paul, 1976
- 22 POWER M J BENN R T and MORRIS, J N Neighbourhood school and juveniles before the courts *British Journal of Criminology* 1972 12 111 132
- 23 ROSE A G *Five hundred borstal boys* Oxford Blackwell 1954
- 24 RUTTER M L TIZARD J and WHITMORE, K *Education health and behaviour* London Longmans 1970
- 25 RUTTER M L and YULE W Specific reading retardation In Mann L and Sabatino D (Eds) *The first review of special education* Buttonwood Farms Grune, 1973
- 26 STOTT D H *Saving children from delinquency* London University Press 1952
- 27 STRATTA E *The education of borstal boys* London Routledge and Kegan Paul 1970
- 28 TENNANT T G School non-attendance and delinquency *Educational Research* 1971, 13 185 190
- 29 TOBY J Social disorganisation and stake in conformity *Journal of Criminal Law Criminology and Political Science* 1957 48 12 17
- 30 TRENAMAN J *Out of step* London Methuen 1962
- 31 VINCENT D Reading ages and NFER reading tests *Educational Research* 1974 16 176 180
- 32 WALKER N D *Crime and punishment in Britain* Edinburgh University Press 1970
- 33 WEST D J and FARRINGTON D P *Who becomes delinquent? Second report of Cambridge study in delinquent development* London Heinemann 1973
- 34 WEST D J and FARRINGTON D P *The delinquent way of life Third report of Cambridge study in delinquent development* London Heinemann 1977
- 35 WHITTAKER E M Aspects of intellectual and educational functioning of boys admitted to the regional assessment centre *Journal of the Association of Educational Psychologists* 1977 4(4) 24 30
- 36 WOLFF M *Prison The penal institutions of Britain* London Eyre and Spottiswoode 1967
- 37 WOODWARD, M W *Low intelligence and delinquency* London Institute for Study and Treatment of Delinquency 1963
- 38 WOOTTON, B *Social science and social pathology* London Allen and Unwin 1959