SCHOOL EXPERIENCE AND DELINQUENCY AT AGES 13 TO 16

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KEY FINDINGS

Attachment to school is related to young people's behaviour in school and more widely to delinquent and criminal conduct. The most important dimension is attachment to teachers, but the belief that school success will bring later rewards is also important. Parents' commitment to school is related to their children's behaviour, including both misbehaviour in school and criminal conduct.

Misbehaviour at school was clearly related to exclusion, but was a rather small part of the explanation for it. Truancy and delinquency were only weakly related to exclusion. Given their levels of bad behaviour in school, delinquency, and truancy, boys and those from working class or unemployed households were substantially more likely to have been excluded from school than girls and those from non-manual households.

Analysis of the change in behaviour of people between the ages of 13 and 15 has shown that attachment to teachers at age 13 was related to lower levels of misbehaviour and delinquency at age 15, after controlling for social and family background. This indicates that there is a role for schools in preventing the development of delinquent behaviour.

Analysis of behaviour change also found that misbehaviour at school at age 13 was related to an increase in delinquency over the following two years. This shows that controlling misbehaviour in school is important because, along with a range of other factors, such misbehaviour tends to lead to later criminal conduct.

INTRODUCTION

This briefing paper presents evidence from the Edinburgh Study on the relationship between experiences at school and delinquency in young people aged between 13 and 16. The report examines the links between various aspects of school experience, including commitment to school, attachment to teachers, experience of truancy and exclusion and involvement in bullying, and misbehaviour at school and other forms of delinquency. It draws on findings from the Edinburgh Study of Youth Transitions and Crime, a longitudinal research programme exploring pathways into and out of offending among a single cohort of young people who started secondary school in the City of Edinburgh in 1998. Questions about school were included in questionnaires completed by the young people at four of the annual sweeps, at ages 13, 15, 16 and 17. This report focuses on sweeps 2, 4 and 5 because by sweep 6 half of the cohort had left school. In addition, it makes use of school records of attendance and exclusion from school. The key aims and methods of the study are summarized below.[1]

Aims of the programme

- To investigate the factors leading to involvement in offending and desistance from it
- To examine the striking contrast between males and females in criminal offending
- To explore the above in three contexts:
  - Individual development
  - Interactions with formal agencies of control
  - The social and physical structures of neighbourhoods
- To develop new theories explaining offending behaviour and contribute to practical policies targeting young people

Overview of methods

- Self report questionnaires (annual sweeps)
- Semi-structured interviews (40 undertaken in sweep 2)
- School, social work, children's hearings records (annual sweeps)
- Teacher questionnaires (1999)
- Police juvenile liaison officer and Scottish criminal records (from 2002)
- Parent survey (2001)
- Geographic information system

Participating schools

- All 23 state secondary schools
- 8 out of 14 independent sector schools
- 9 out of 12 special schools

Response Rates

- Sweep 1 96.2% (n=4,300)
- Sweep 2 95.6% (n=4299)
- Sweep 3 95.2% (n=4296)
- Sweep 4 92.6% (n=4144)
- Sweep 5 89.1% (n=3856)
- Sweep 6 80.5% (n=3531)

Research Team

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Study Funding

- Economic and Social Research Council (1998 - 2002)
- The Scottish Executive (2002- 2005)
- The Nuffield Foundation (2002 - 2006)

[1] See also Smith at al (2001) and Smith and McVie (2003) for further details of the study.

Context

There is now a considerable body of research in the school effectiveness tradition which shows that what schools do makes a difference (Rutter *et al* 1979; Mortimore *et al* 1988; Smith and Tomlinson 1989) but this has focused on educational outcomes rather than standards of behaviour. A major exception was the earliest of these studies: Rutter *et al* (1979) found that a measure of officially recorded juvenile crime (the proportion of pupils known to the local police juvenile liaison bureau) varied significantly between their 12 schools and that the same school factors (styles of organization and patterns of relationships) were associated both with scholastic progress and with low crime rates. Although the Edinburgh Study is not designed to measure school differences or to describe school policies and practices, it does provide the basis for examining links between the school-based experiences of individual young people and the standards of their behaviour.

Structure of the report

Part one of this report reviews young people's experience of school, taking sweep 4 (age 14) as the main point of reference, and shows how school experiences are associated with delinquency and with bad behaviour at school. Part two asks whether school experiences are linked to misbehaviour in school and to delinquency. The final part exploits the longitudinal design of the Edinburgh Study to show whether school experiences at an earlier time have an influence on misbehaviour and delinquency later; it also considers whether earlier misbehaviour at school leads to later delinquency. The report concludes with a discussion of the impact schools can have on delinquent behaviour.

PART 1: THE SCHOOL EXPERIENCE

Truancy and exclusion

Findings from the Edinburgh Study on truancy and exclusion that have already been published (McAra 2004) provide an important context for the findings on young people's experiences of school. At every sweep, cohort members were asked 'During the last school year, did you skip or skive school?' and if yes, how many times. This provided a measure of whether they had truanted during the last school year, and the number of truanting episodes. The proportion that had truanted rose from 18 per cent in the primary school years to 44 per cent in the third year of secondary school. The proportion reporting 10 or more episodes of truanting rose from 2 per cent in the primary years[2] to 11 per cent in the third year of secondary school. Data that have become available since the publication of the earlier report show that truancy levelled off after year 3 of secondary school, although findings are not clear-cut because young people were gradually leaving school during these two years. McAra (2004) also reported that truancy (unlike crime and other forms of delinquency) was more common among girls than boys from the second year of secondary school onwards. Also, truancy was considerably more common among young people from disadvantaged or single-parent families and those in deprived neighbourhoods than among others. Smoking, underage drinking, and use of illicit drugs were considerably higher among truants, particularly persistent truants, than among others. The study has also found a strong link between truancy and other forms of delinquency: at sweep 4, for example, the correlation between the number of episodes of truanting and the number of other delinquent acts was .554. The above findings are all based on young people's reports of their own truancy. After the first year of secondary school most truancy was not captured by school records: in fact, even among those who reported 10 or more episodes of truancy, only half were recorded by the school as having truanted (for more details, see McAra 2004).

We rely on self-reports as the prime source of information about truancy, because truancy is an action by the child that may or may not come to notice. By contrast, we rely on school records as the prime source of data about exclusion from school because exclusion is a formal action by the school which must be recorded if it is to be valid. However, from sweep 4 young people were asked whether they had been excluded as a supplement to the information from school records. The proportion who said they had been excluded in school years 1-3 was higher than that shown in school records (13 compared with 10 per cent). Most of those officially recorded as having been excluded over these years (84 per cent) also said they had been. As set out in the earlier report, boys were far more likely to be excluded than girls (whereas, from sweep 2, girls were more likely than boys to truant). Exclusion, like truancy, was considerably more common among the poor, those from manual households, those from single-parent households, and those in deprived neighbourhoods, than among others. However, exclusion was much more weakly related to substance misuse than was truancy. By contrast, exclusion was more strongly related to delinquency: for example, the mean vol-

[2] At the first sweep, cohort members were in their first year of secondary school, and were asked whether they had *ever* skipped or skived school (not about the last school year). At that point, this 'ever' question referred to the primary school years.

ume[3] of delinquency at sweep 4 was 25.65 among those who had been excluded in the first three years of secondary school, compared with 11.57 among those who had not.

Misbehaviour at school

At sweep 2, young people were asked how often they engaged in three kinds of misbehaviour at school: be cheeky to a teacher; cause trouble in the classroom; cause trouble outside the classroom. At sweeps 4 and 5, the list was expanded to eight items: arrive late for class; fight in or outside the class; refuse to do homework or class work; be cheeky to a teacher; use bad or offensive language; wander around school during class time; threaten a teacher; hit or kick a teacher. The responses were scored from 0 (hardly ever or never) to 3 (most days) and summed across the items to provide a measure of bad behaviour ranging from 0 to 9 at sweep 2, and from 0 to 24 at sweeps 4 and 5.

At sweep 2, the level of bad behaviour was much higher at special schools than elsewhere (mean score 3.54), but it was also distinctly higher at mainstream than at independent schools (2.27 compared with 1.47). The sweep 4 measure was expanded, so the scores cannot be directly compared with those from sweep 2. However, the gap in bad behaviour between mainstream and independent schools had narrowed considerably by sweep 4 (the mean scores were 4.19 and 3.62 respectively); behaviour remained much worse at special schools. At sweep 5, school behaviour was far worse among those who officially left sometime during the school year (mean 6.89) than among those remaining at mainstream schools until the end of the year (3.31). Moreover, school behaviour was now worse among those at independent schools than among those remaining at mainstream schools (3.64 compared with 3.31). This pattern of findings vividly illustrates that poor behaviour at mainstream schools reflects the composition of the pupils. The badly behaved pupils are largely those who will become early leavers. Once they have left, behaviour among remaining pupils is better than among those at independent schools.

Bad behaviour at school was markedly more common among boys than girls (4.63 compared with 3.83 at sweep 4) among children in manual compared with non-manual households (4.72 compared with 3.73) and among those not in two-parent households compared with those who were (5.15 compared with 3.73.

Attachment to school

Teachers

At sweeps 4 and 5, young people were asked how many of their teachers: they got on well with; treated them like a troublemaker; they felt they could trust; did not listen to or respect them; praised them if they had done well. Similar questions (although different in detail) were asked at sweep 2. The responses were used to construct a scale measuring attachment to teachers, which was only slightly higher among girls than boys, among those from non-manual compared with those from manual households, among those from two-parent compared with other families, and among those at independent compared with mainstream schools. These differences were similar at each of the three sweeps.

[3] Volume of delinquency is the number of times the individual had engaged in one of 16 types of delinquency in the recent 12-month reference period.

Commitment to school

At sweeps 4 and 5, commitment to school was assessed by four questionnaire items: school is a waste of time; school teaches me things that will help in later life; working hard at school is important; school will help me get a good job. Cohort members rated their agreement or disagreement with these statements on a five-point scale, and the summed scores measure the instrumental dimension of commitment to school as a tool for getting on in life. Only two of these items had earlier been included at sweep 2. As in the case of attachment to teachers, the level of commitment to school varied only slightly according to sex, social class, and family structure. There was a distinct, although small tendency for commitment to be higher at independent than at mainstream schools.

Happy at school

At sweeps 4 and 5, four questionnaire items were used to assess how happy people were at school: my school has a good atmosphere; I don't feel that I fit in at school; I feel safe at school; school makes me feel I'm no good at things. Cohort members rated their agreement or disagreement as before. There were virtually no differences on this factor according to social class or family structure. If anything, boys were happier at school than girls (whereas girls were more attached to teachers and more committed). Those at independent and special schools were distinctly happier than those at mainstream schools, although these differences were not large.

Clubs and teams

At sweep 2 only, cohort members were asked about participation in school sports clubs or teams, and in other school clubs or groups. Overall, 46 per cent participated at least once a week in school sports clubs or teams, and 32 per cent in other school clubs or groups. Participation varied little according to sex, social class, or family structure, but participation both in sports and other groups was far more common at independent than at mainstream schools: for example, 80 per cent of pupils at independent schools participated in sports teams or clubs at least once a week, compared with 40 per cent of those at mainstream schools.

Parental commitment to school

Many educational studies (e.g. Rutter *et al* 1979; Mortimore *et al* 1988; Smith and Tomlinson 1989) have found that the parents' commitment to school is an important factor in the child's success, but this has been little pursued in the field of delinquency studies. At sweeps 4 and 5, cohort members were asked how often their parents did the following: check if you've done your homework; go to parents' evenings; help if you have a problem at school; reply to school letters when asked; encourage you to do well at school; ask you about your day at school. Four of these six items had previously been included at sweep 2. There was no difference between girls and boys in the commitment of their parents to school, but parental commitment was distinctly higher among non-manual and two-parent families than among others. There was slightly higher commitment among parents of children at independent schools compared with those at mainstream schools.

School discipline

At sweep 2, cohort members were asked whether parents had been involved in disciplinary action: specifically whether they had been asked to sign a punishment exercise, or whether the school had been in touch about something the child had done wrong. At sweeps 4 and 5, four further items were added about disciplinary action not involving parents: I was given a detention; I was sent to the head of department or head teacher; I was put on a conduct/behaviour sheet; I was given extra homework to do. In each case, respondents were asked how many times this had happened, and the measures are constructed by adding up the total number of occurrences. Here the differences between groups were marked. Boys were much more likely to have experienced disciplinary action than girls (with means of 4.37 compared with 2.99 at sweep 4). The differences according to social class and family structure were of a similar order, with those from manual households and not living with both parents being more often disciplined. Disciplinary action was also much more common at mainstream than at independent schools (at sweep 4 the means were 3.81 and 2.26 respectively).

School performance

At sweep 4, cohort members were asked how well they had done at school during the last school year compared with what was expected. There was little or no difference according to sex, social class, family structure or school sector in these assessments of performance.

Bullying

At all three sweeps, cohort members were asked about bullying and being bullied. From questions included at sweep 2 (age 13) we find that among those who had been bullied, 52 per cent said they had been bullied at school, 16 per cent on the way to or from school, and 58 per cent elsewhere. This shows that about half of all bullying occurs in the school context. Cohort members were asked how often they had been victims of four forms of bullying: somebody ignoring you on purpose or leaving you out of things; somebody saying nasty things, slagging you or calling you names; somebody threatening to hurt you; somebody hitting, kicking, punching or throwing stones at you. Separately, cohort members were asked how often they had done each of these things to others, and how often they had got other people to do the same. Using the sweep 4 results as an indication, there was no difference in bullying victimization between boys and girls, but boys were considerably more likely than girls to have bullied others. Differences according to social class and family structure were small, although members of the more disadvantaged groups were slightly more likely to bully and to be bullied. Bullying and being bullied were more common at special than at other schools, but there was little difference between those in mainstream and independent schools.

PART 2: LINKS BETWEEN SCHOOL EXPERIENCE AND MISBEHAVIOUR AND DELINQUENCY

Focusing on sweep 4 (age 14), table 1 shows the correlations between each school factor on the one hand and misbehaviour at school and delinquency on the other.[4] Because misbehaviour at school and delinquency were closely associated (correlation coefficient .655) it is not surprising to find that the school factors were associated with each kind of deviance in a similar way.

Exclusion from school was clearly associated with misbehaviour at school and with delinquency, but these relationships were not particularly strong, which indicates that misbehaviour in school and delinquency as measured here by no means explain why some pupils were excluded whereas others were not. The self-reported measure of exclusion was rather more strongly associated with misbehaviour and delinquency than were the official records, but even so the relationship was not very strong. Truancy (as reported by the young person) was more strongly related to misbehaviour and delinquency than was exclusion. (Note that the measure of delinquency used here does not include truancy, so that the measures of delinquency and truancy are wholly independent of one another.)

Table 1: Correlations between school factors, misbehaviour at school, and delinquency at sweep 4

Spearman's rho correlation coefficient

	Misbehaviour at school	Delinquency[a]
Truancy	0.474	0.496
Sessions excluded (recorded) year 3[b]	0.145	0.149
Sessions excluded (recorded) years 1-3[b]	0.237	0.199
Number of times excluded years 1-3 (from young person's questionnaire)	0.256	0.236
Attachment to teachers	-0.551	-0.440
Commitment to school	-0.363	-0.299
Happy at school	-0.214	-0.198
Clubs and teams (sweep 2)	-0.014	-0.012[c]
Parental commitment to school	-0.319	-0.278
School disciplinary action	0.647	0.595
Perception of school performance	-0.190	-0.141
Bullying others	0.496	0.488
Being bullied	0.098	0.100
Misbehaviour at school	-	0.655

[a]The measure used is volume of delinquency at sweep 4 across 17 items not including truancy.
[b]State sector schools only included in these two rows.
[c]Here the two measures (participation in clubs and teams, and delinquency) refer to sweep 2.

[4] The measure of misbehaviour at school was defined in an earlier section. The measure of delinquency covered the following 17 items (not including truancy): fare dodging; graffiti; theft from home; robbery; shoplifting; theft from vehicle; public rowdiness; joyriding; theft from school; housebreaking; vandalism; fire-setting; carrying a weapon; injuring animals; selling drugs; hitting, kicking, or punching someone; racial attack. The measure is an estimate of the total number of times the respondent had done any of these things.

Attachment to teachers was very strongly related to lower levels of misbehaviour and delinquency, and these were among the strongest relationships found. The level of rational commitment to school for the sake of future benefits was also clearly related to low levels of misbehaviour and delinquency, whereas the relationships with feeling happy at school were weaker. On the other hand, participation in school clubs and teams was not significantly related to deviance. Generally, though, these findings show that attachments to school are a strong restraining influence on misbehaviour and delinquency, as proposed by Hirschi's (1969) social control theory. The parents' commitment to school was also clearly related to the child's misbehaviour and delinquency. This again fits with the theory (Hirschi 1969) that children who are located within a dense network of social bonds are less likely to offend. Also it fits with evidence from educational research (e.g. Mortimore *et al* 1988) to show that parents' commitment to school is an important factor in the child's scholastic progress.

The very high correlation between school disciplinary action and child misbehaviour and delinquency may seem at first sight like a trivial finding, since it shows that schools take disciplinary action mainly against pupils who behave badly. However, it takes on more significance in the light of the different finding in the case of exclusion. This implies that whereas disciplinary action can be interpreted as largely a response to bad behaviour that is perceived and reported as such by the child, the same does not apply to exclusion to nearly the same extent.

The young person's perception of their school performance was only weakly related to their behaviour, indicating that bad behaviour is not primarily a response to frustration or feelings of a lack of progress—a finding that runs counter to Albert Cohen's (1957) theory that working class children reject school values because they cannot perform well within their framework. As reported in an earlier section, the present findings do nevertheless confirm Cohen's starting assumption that in-school behaviour tends to be worse among young people from working class than among those from middle class homes.

Bullying others was strongly related both to misbehaviour in school and to delinquency in general. (Note that the measures of misbehaviour and delinquency do not include any mention of bullying, although some delinquent actions, such as hitting someone or deliberately damaging their property, could be part of a campaign of bullying in some instances.) Also, there was a statistically significant, but weak, relationship between being a victim of bullying and engaging in bad behaviour and delinquency. This echoes findings already published which demonstrate a link between victimization and offending in teenagers (Smith 2004).

As set out above, the simple correlations suggest that misbehaviour and delinquency do little to explain why some young people are excluded from school whereas others are not. This confirms findings already set out in an earlier report (McAra, 2004). Two regression models were specified to examine the factors associated with exclusion in greater depth. These models, shown in table 2, use misbehaviour, delinquency and truancy at sweep 4 (age 15, when delinquency reached its peak) to explain the number of times the young person had been excluded in years 1-3 of secondary school. The measure of exclusions was taken from the questionnaires because official records were not available for independent schools, but the high correlation between records and self-reports of exclusion (.706) suggests that self-reports are a good source. In any case, self-reports of exclusion were more strongly related to misbehaviour than were

official records (see table 1), so if anything by using self-reports we exaggerate the importance of misbehaviour as an explanation for exclusion. The first model (simple model) included only basic features of family background along with the measures of misbehaviour and delinquency. The second model (full model) added a range of other variables describing the school experience.

Table 2: Ordinal regression models explaining self reports of times excluded from school (years 1 to 3)

Regression coefficients

	Simple Model	Full Model
Male	0.75***	0.75***
Manual/unemployed household	0.78***	0.75***
Not 2-parent family	0.31*	0.31*
Mainstream school	-1.63***	-1.57***
Independent school	-1.86***	-1.76***
Special school	0.00	0.00
Delinquency	0.19**	0.21**
Bad behaviour at school	0.60***	0.60***
Truancy	0.28***	0.29***
Attachment to teachers		-0.23*
Commitment to school		0.06ns
Happy at school		0.07ns
#Parents' commitment to school		-0.03ns
#Perceived performance at school		-0.17*
#Bullying others		-0.16*
#Being bullied		0.02ns

Notes:
Level of significance: *** p<.0001; ** p<.001; * p<.05; ns = not significant.
The regression coefficients are standardised in the case of the continuous variables marked #

Looking first at the simple model, exclusion was much more common in special schools than in the other sectors. Bad behaviour at school was clearly associated with exclusion after controlling for the other factors, but delinquency and truancy were only weakly (although significantly) related to exclusion. Boys and those from manual or unemployed households were substantially more likely to be excluded than girls and those from non-manual households, after controlling for the effects of the young person's behaviour. Those who were not from two-parent families were rather more likely to have been excluded than those from conventional families. Looking at the full model, the various aspects of the school experience were only weakly related to exclusion, and the main pattern of findings remained very much the same.

This analysis shows that comprehensive measures of the young person's behaviour both in and out of school made only a small contribution towards explaining why some had been excluded whereas others had not. Although clearly related to exclusion, bad behaviour in school was only a small part of the explanation for it. By comparison, truancy and delinquency were only weakly related to exclusion and made little contribution towards explaining it. Exclusion was, however, clearly influenced by extraneous factors such as sex and social class. These findings confirm analyses of earlier data which used a slightly different statistical approach (McAra, 2004).

Two further regression models were specified to examine in greater depth the associations between school experience and deviant behaviour. These models are presented in table 3. In the first model, aspects of school experience were used to explain misbehaviour in school, and in the second to explain delinquency. All of the variables were drawn from the same time period (sweep 4); at this stage, the objective was not to establish causal relationships, but to examine the strength of the associations between each aspect of school experience and deviant behaviour after controlling for the effects of the other aspects. The results of the models are summarized in table 3 below.

Table 3: Ordinal regression models explaining misbehaviour at school and delinquency at sweep 4

Regression coefficients

	Model 1 explaining bad behaviour	Model 2 explaining delinquency
Male	0.259***	0.310***
Manual/unemployed household	0.089ns	0.117ns
Not 2-parent family	0.178*	0.155*
Mainstream school	-0.572*	0.123ns
Independent school	-0.241ns	-0.021ns
Special school	0	0
#Truancy	0.623***	0.725***
#Attachment to teachers	-0.821***	-0.514***
#Commitment to school	-0.194***	-0.104**
#Happy at school	0.119**	0.068ns
#Parents' commitment to school	-0.134***	-0.085*
#Perceived performance at school	-0.128***	-0.030ns
#Bullying others	0.822***	0.915***
#Being bullied	0.026ns	0.049ns

Notes:
Level of significance: *** p<.0001; ** p<.001; * p<.05; ns = not significant.
The regression coefficients are standardized in the case of the continuous variables marked #.

Model 1 shows that the school factors most closely related to bad behaviour were attachment to teachers (associated with less bad behaviour), bullying others, and truancy (both associated with more bad behaviour). All three of these effects were very large. Other factors that had considerable effects were commitment to school, parents' commitment to school, and performing up to expectations at school, all associated with less bad behaviour. Surprisingly, feeling happy and safe at school was (rather weakly) associated with more bad behaviour in the context of the model, perhaps indicating that those who feel secure have the confidence to behave badly.

Analysis reported in an earlier section showed that overall standards of behaviour were highest in independent schools and lowest in special schools, with mainstream state schools coming between. After controlling for the social background of young people and other aspects of the school experience, this pattern changed. As shown in table 3, the standard of behaviour was still lowest at special schools, but it was now best at mainstream state schools, with independent schools lying between. This shows that the higher standard of behaviour at independent schools overall is more than explained by the different social composition of the young people attending them.

Model 2 shows that the school factors were related to delinquency in broadly the same way as to bad behaviour at school. The effects of the most potent variables (attachment to teachers, bullying, and truancy) were much the same as before. The effects of the other school variables were weaker in explaining delinquency than in explaining bad behaviour at school. This shows, as expected, that school-related variables are better at explaining behaviour within the school context than behaviour elsewhere.

PART 3: THE EFFECTS OF SCHOOL EXPERIENCE ON LATER BEHAVIOUR AND DELINQUENCY

The analyses already presented show that there are close links between school experience on the one hand and misbehaviour at school and delinquency on the other. This raises two further questions. The first is whether misbehaviour at school (among a range of other factors) leads on to delinquency later. This would be important, because it would suggest that controlling misbehaviour at school is a means (along with others) of preventing the development of a later pattern of criminal conduct. The second question is whether school-related factors such as attachment to teachers have an influence on the later pattern of misbehaviour in school and delinquency. If so, this would suggest that school policies and practices can have an influence in preventing the development of disruptive and delinquent behaviour.

To investigate these questions, two sets of regression models were specified, the first set explaining delinquency at sweep 4 (age 15) and the second set explaining misbehaviour in school at sweep 4. These were longitudinal models explaining change over time, so in each case the explanatory variables were drawn from sweep 2 (age 13). In the models explaining delinquency at sweep 4, one of the explanatory variables included was delinquency two years earlier, at sweep 2. These models explain delinquency at a later time (sweep 4) while controlling for the level of delinquency at an earlier time (sweep 2): in other words, they explain change in delinquency over a two-year period. The findings are summarized in table 4.

Table 4: Longitudinal ordinal regression models for delinquency at sweep 4

Regression coefficients

	Model 1	Model 3	Model 2
Male	0.258***	0.188**	0.164**
Manual/unemployed	0.231***	0.186**	0.205**
Not two-parent family	0.298***	0.277***	0.304***
#Delinquency at sweep 2	1.205***	1.203***	0.868***
#Attachment to teachers at sweep 2	0.279***	-0.167***	-0.130**
#Misbehaviour at school at sweep 2		0.366***	0.313***
#Truancy at sweep 2			-0.065ns
#Bullying at sweep 2			0.346***

Notes:
Level of significance: *** p<.0001; ** p<.001; * p<.05; ns = not significant.
The regression coefficients are standardized in the case of the continuous variables marked #.

Model 1 shows that attachment to teachers at sweep 2 had a substantial and significant effect on change in the level of delinquency between sweeps 2 and 4. This constitutes strong evidence that school had an influence on whether or not the young person would develop a pattern of delinquent behaviour. Model 2 shows, in addition, that misbehaviour in school at sweep 2 had a strong effect on delinquency two years later. This provides strong evidence to show that bad behaviour in the school context led to delinquency later. At the same time, model 2 shows that attachment to teachers still had an effect on the later level of delinquency, after controlling for the effect of earlier bad behaviour. Model 3 shows that bullying others at sweep 2 also had a strong effect on delinquency two years later, although truancy at sweep 2 had no significant influence on later delinquency. Again, attachment to teachers at sweep 2 still had a significant

influence in the opposite direction. These findings suggest the following answers to the two questions posed above: bad behaviour in the school context does lead on to criminal conduct later; and positive school experiences, such as attachment to teachers, do have an influence on the development of a pattern of criminal behaviour. These analyses control for the effects of social and family background. They show that positive school experiences are important in themselves, but do not weigh them against other positive factors, such as strong bonds to parents, or show how they are interrelated with other such factors

The second set of longitudinal regression models are similar, but in this case they explain change in misbehaviour in school instead of change in delinquency (see table 5). Model 1 shows that attachment to teachers had a substantial influence on change in misbehaviour between sweeps 2 and 4. Model 2 shows that bullying at sweep 2 led on to other forms of bad behaviour two years later, but that in this context earlier attachment to teachers still had an effect in preventing the development of bad behaviour later.

Table 5: Longitudinal ordinal regression models for misbehaviour in school at sweep 4

Regression coefficients

	Model 1	Model 2
Male	0.121*	0.099ns
Manual/unemployed	0.070ns	0.078ns
Not two-parent family	0.348***	0.362***
Misbehaviour at school, sweep 2	0.926***	0.759***
Attachment to teachers	-0.313***	-0.246***
Truancy at sweep 2		0.069ns
Bullying at sweep 2		0.393***

Notes:
Level of significance: *** p<.0001; ** p<.001; * p<.05; ns = not significant.

CONCLUSIONS

The findings show that young people's attachment to school is related to their behaviour within school and more widely to delinquent and criminal conduct. The most important dimension is attachment to teachers, but the belief that school success will bring later rewards is also important. Earlier studies have shown that parents' commitment to school and involvement in school activities is related to the scholastic success of their children. This one shows, in addition, that parents' commitment to school is related to their children's behaviour, including both misbehaviour in school and criminal conduct.

Misbehaviour within school was clearly related to exclusion, but was a rather small part of the explanation for it. By comparison, truancy and delinquency were only weakly related to exclusion. Given their levels of bad behaviour in school, delinquency, and truancy, boys and those from working class or unemployed households were substantially more likely to have been excluded than girls and those from non-manual households.

The longitudinal design of the Edinburgh Study allows us to monitor the effect of school factors on the later development of patterns of misbehaviour and criminal conduct. Analysis of change in behaviour between sweeps 2 and 4 (ages 13-15) has shown that the most potent factor—attachment to teachers at sweep 2—was related to lower levels of misbehaviour and delinquency two years later, after controlling for social and family background. This shows that there are things that schools can do to prevent the development of disruptive and criminal behaviour. Also, these longitudinal analyses have shown that misbehaviour in school at an earlier time (sweep 2) is related to an increase in delinquency over the following two years. This shows that controlling misbehaviour in school is important not only for its own sake—to create a better learning environment—but also because misbehaviour in school, along with a range of other factors, tends to lead to later criminal conduct.

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