Youth Justice?
The Impact of System Contact on Patterns of Desistance from Offending

Lesley McAra
*University of Edinburgh, UK*

Susan McVie
*University of Edinburgh, UK*

**ABSTRACT**

This article assesses the effectiveness of the Scottish model of youth justice in the context of a growing body of international research that is challenging the 'evidence base' of policy in many western jurisdictions. Drawing on findings from the Edinburgh Study of Youth Transitions and Crime, it shows how labelling processes within agency working cultures serve to recycle certain categories of children into the youth justice system, whereas other serious offenders escape the tutelage of the formal system altogether. The deeper a child penetrates the formal system, the less likely he or she is to desist from offending. The article concludes that the key to reducing offending lies in minimal intervention and maximum diversion. Although the Scottish system should be better placed than most other western systems at delivering such an agenda (owing to its founding commitment to decriminalization and destigmatization), as currently implemented it appears to be failing many young people.

**KEY WORDS**

Desistance from Offending / Evidence-Based Policy / Minimal Intervention / Scottish Children’s Hearing System.

**Introduction**

Over the past decade, youth justice discourse in many western jurisdictions has become dominated by the mantra of ‘evidence-based’ policy (see Gatti
Informed by the results of research on risk and protective factors and (more especially) by the precepts underpinning the ‘what works’ agenda, huge resources have been devoted to early intervention initiatives for ‘at risk’ children and their families, as well as to specialist programmes aimed at reducing re-offending among older, more persistent offenders. This has been accompanied (particularly in the UK) by a massive increase in government-sponsored research, focused on evaluating programme effectiveness and establishing value for money (see Pitts 2003; Hope 2004).

Evidence-based policy, as currently conceived, has a particularly seductive quality for politicians, not least because its scientific imprimatur suggests political neutrality and because it has the capacity to enhance central (government) control over youth justice agencies, through national standards, performance indicators and evaluation research – all considered integral to the delivery of ‘programme integrity’ (see Farrall 2002; Muncie 2002; McAra 2004a). It also has a seductive quality for certain sectors of academia (providing a major source of research income and sustaining a new generation of contract researchers) and for some practitioners (as, for example, within Scotland, where the ‘what works’ agenda has functioned to re-professionalize and re-legitimize the social work contribution to criminal justice; see McAra 2005a). Consequently, a range of more or less powerful groups now have a strong vested interest in maintaining the evidence-based approach.

As a counterweight to this, however, there is a growing body of research that is beginning to question the actual evidence base of the preventative and offending-reduction elements of contemporary youth justice policy frameworks. This attack comes from two main directions: first from a range of commentators who claim that the scientific foundations of the ‘what works’ principles are inherently flawed and/or that programmes based on such principles have been imported into youth justice systems in inappropriate ways; and secondly from a number of studies that have explored the longer-term (mostly damaging) impact of system (rather than individual programme) contact on young people.

**Flaws in the scientific foundations of policy**

The ‘what works’ agenda stems from a range of meta-analytic reviews conducted during the 1980s and 1990s (see Garrett 1985; Andrews et al. 1990; Lipsey 1992). These reviews re-analysed data from a range of individual studies on offender treatment programmes and recorded changes from pre-test to post-test expressed as standard deviation units. They concluded that programmes based on six core principles could be effective in reducing re-offending, in particular programmes that: calibrated the intensity of...
intervention to the level of risk; tackled criminogenic need; were community based and multi-modal in orientation; and were appropriately resourced with well-trained and highly motivated staff (McGuire 1995).

The results of meta-analyses are, of course, only as good as the quality of the individual studies from which they derive their data. Concerns have been expressed that some of the most influential meta-analytic studies have drawn on relatively poor-quality research; that there is a publication bias towards evaluation studies showing large effect sizes, which may overstate the effectiveness of ‘what works’ measures; and that there is reliance on police reports or reconviction data as outcome measures, which are insensitive measures of re-offending (see, in particular, Gaes 1998; Smith 2005).

Other criticisms of ‘what works’ relate less to meta-analysis as a method and more to the use to which the science has been put. Much of the enthusiasm with which ‘what works’ principles have been taken up by policy makers has been based on over-optimistic assumptions about what specialist programmes will be able to deliver in terms of crime reduction. Even the best and most rigorously conducted meta-analytic studies only ever claimed that re-offending could be reduced by a small amount. For example, Lösel (cited in Smith 2005) in a review of 13 meta-analyses (drawing on the results of over 500 evaluations) found that the average effect size was about 0.1 of a standard deviation, which was equivalent to a reduction in the re-offending rate of about 5 percent in comparison with control groups (see Smith 2005: 187). This has not prevented policy makers from setting (what may be) unrealistic targets for youth justice agencies. In Scotland, for example, the youth justice system was charged with effecting a 10 percent reduction in the number of persistent offenders by 2006, from a baseline of 1201 identified offenders in 2004 – a target that it failed to meet.

Arguably, the efficacy of specialist offender programmes on offer within a particular youth justice system is a poor measure of the effectiveness of the system as a whole. Only a small minority of the offenders processed by any system will ever access such programmes, and then only after a long-term sequence of interactions with a range of different agencies (e.g. the police, social work/probation, court or tribunal). A core limitation of meta-analytic review is that such studies often fail to take account of potential selection effects caused by the gate-keeping practices of agencies at earlier stages of the youth justice process, and the broader (and possibly cumulative) impact of systemic contact on individual offenders as they move from stage to stage. More particularly, there has been (some would argue) a rather naive assumption among policy makers that measures that appear to work in one jurisdiction can be successfully transplanted into others, without any need to consider differences in the cultural and social contexts within which such measures are to be implemented (see, especially, Muncie 2002; Muncie and Goldson 2006).
System contact and deviancy amplification

In contrast to the precepts of the ‘what works’ agenda, there is a growing body of research across a range of jurisdictions, including England and Wales (but not Scotland), Germany and the USA, which indicates that contact with the youth justice system and experience of more severe forms of sanctioning, in particular, are as likely to result in enhanced as in diminished offending risk (see Klein 1986; Sherman et al. 1998). Taken to its extremes, this research would suggest (in a manner akin to labelling theory) that contact with the youth justice system is inherently criminogenic.

Much of this body of work is longitudinal in design. As such, it is able to redress some of the methodological limitations of programme evaluation mentioned above. In particular, longitudinal research enables the tracking of individual offenders through the youth and adult criminal justice systems and is able to test for the impacts of particular criminal justice pathways on subsequent behaviour. Moreover, longitudinal research is able to undertake a longer-term follow-up of cases than is possible in most government-sponsored evaluation research.

Examples from this literature include the Cambridge Study (Farrington 1977), 1 which found that self-reported delinquency was significantly higher amongst cohort members who were first convicted between the ages of 14 and 18 than among a matched group of unconvicted boys. Similar results were found for those with first convictions between the ages of 18 and 21, again compared with a matched group of the unconvicted (Farrington et al. 1978). Furthermore, Tracy and Kempf-Leonard (1996) in their follow-up study of the 1958 Philadelphia birth cohort, found that boys who were committed to a correctional facility at any stage were more likely to continue offending into adulthood than those who were not, after controlling for other influences. However, they also found that criminal careers tended to be shorter where there was early intervention in the form of probation, than in cases where first intervention came much later.

Perhaps the most powerful evidence of the negative consequences of youth justice interventions comes from a comparative study undertaken by Huizinga et al. (2003). Drawing on data from two longitudinal projects (one located in Bremen, Germany, and the other in Denver, USA), the authors found that arrests and sanctions had only a limited impact on offending, resulting, for the most part, in the maintenance of, or increases in, the previous level of offending (with increases being more likely in the case of the individuals given the most severe sanctions). The similarity in outcomes is particularly striking given the very different ethos of the youth justice system in Germany

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1 The Cambridge Study followed 411 boys who grew up in a working-class district of London (Farrington 1977).
(more lenient, focused on diversion) from that of Denver (more punitive, propels offenders quickly into court, limited diversion). The authors conclude that it may not be the severity or otherwise of the sanctions on offer that is significant in terms of tackling offending, but rather the ‘simple certainty of response’ (Huizinga et al. 2003: 5).

Aim of the article

The aim of this article is to explore the impact of the Scottish model of youth justice on future offending in the light of the above debates on the effectiveness of ‘evidence-based’ policy. It does so principally by drawing on findings from the Edinburgh Study of Youth Transitions and Crime, a prospective longitudinal study of youth offending.2 Taken together, our findings provide some support for the broader international longitudinal research just mentioned. As we aim to demonstrate, selection effects at each stage of the youth justice process mean that certain categories of young people – ‘the usual suspects’ – become propelled into a repeat cycle of referral into the system whereas other equally serious offenders escape the tutelage of agencies altogether. Importantly, the deeper the usual suspects penetrate the youth justice system, the more this is associated with inhibited desistance from offending.

Our principal message, therefore, is that the key to tackling serious and persistent offending lies in minimal intervention and maximum diversion. Although the Scottish system is better placed than most other western juvenile justice systems to deliver such an agenda, as currently implemented it appears to be failing many young people.3

Structure of article

The article begins with a short overview of the Scottish system of youth justice to contextualize the research findings. We then provide a brief description of the aims and design of the Edinburgh Study. A series of key findings that indicate systemic selection effects and the impact of contact on desistance from offending are presented. The article concludes with a discussion of the findings and their implications in relation to the broader literature on effectiveness.

2 The Edinburgh Study has been funded by grants from the Economic and Social Research Council (R000237157; R000239150), the Scottish Executive and the Nuffield Foundation.

3 In this article, we use the term ‘youth justice system’ to refer to all institutions and procedures for dealing with child offenders under the age of 18. This includes, but is not restricted to, the Scottish children’s hearing system (see the following section).
Scottish youth justice in comparative context

Over the past 35 years, the youth justice system in Scotland has differed from a number of its US and European counterparts, owing to its continued commitment to welfare values (McAra 2004a). Predicated on the Kilbrandon philosophy (see below) and located in a social and political culture committed to social welfare and mutual support, the system was initially able to resist the increasingly punitive turn taken in other western jurisdictions between the 1970s and early 1990s (see Paterson 1994; Garland 2001; Crawford 2002; McAra 2004a, 2005a). A further key difference has been the central role accorded to a lay tribunal in the Scottish youth justice process, in contrast to the court-based structures that inhere in many other jurisdictions (as, for example, in Italy, Germany and a range of US states; see Winterdyk 2002).

History and philosophy

The current system in Scotland was set in train by the Social Work (Scotland) Act 1968. This Act abolished the existing juvenile courts and introduced a new institutional framework for youth justice: the children’s hearing system.4

The hearing system is underpinned by the Kilbrandon philosophy (named after the chairman of the committee set up to review youth justice in the early 1960s). According to this philosophy, the problems faced by child offenders and those in need of care and protection stem from the same source: namely, deep social or psychological malaise and/or failures in the normal upbringing process (Kilbrandon Committee 1964). As a consequence, the overall aim of the hearing system is to deal with the needs of the child, with ‘best interests’ to be paramount in decision-making. The system is predicated on early and minimal intervention and, in the case of offenders, is intended to avoid the criminalization and hence stigmatization of young people (see McAra 2002, 2004a and 2006).

Key institutions and procedures

Referrals to the children’s hearing system are made to the Reporter. Although anyone can make a referral, the overwhelming majority of referrals on both

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4 At that time, Scotland remained under the tutelage of the UK national Parliament at Westminster; however, it had its own separate education and legal system. Moreover, policy was administered through the then Scottish Office, which had its headquarters in Edinburgh. These arrangements facilitated a degree of policy divergence between Scotland and England/Wales in matters relating to youth and adult criminal justice (see McAra 2004a, 2005a).
offence and non-offence grounds are made by the police (SCRA 2005; McAra and McVie 2005). At the time of writing, the police in Edinburgh are expected to follow a set of guidelines when making referral decisions in respect of children who offend. Up to two written warnings can be given in cases of non-serious offences where the child admits guilt. Cases in which a formal charge has been issued, those involving serious offences and all those in which the child does not admit guilt should be referred by the police juvenile liaison officer (JLO) to the Reporter (see McAra and McVie 2005). Importantly, there is always some delay between the child being apprehended by police ‘beat’ officers and the time at which the case is formally recorded as a warning or charge. Police ‘beat’ officers issue charges to children (usually at a police station in front of their parents) and then pass the papers on to a JLO. In practice, a high proportion of charges are quietly dropped by the JLO (McAra and McVie 2005).

Once a child has been referred to the hearing system, the principal role of the Reporter is to investigate the case to determine whether at least one of the statutory grounds for referral to a hearing has been met and that the child is in need of compulsory measures of care. A high proportion of cases result in no further action. In 2003/4, for example, only 11 percent of children referred to the Reporter were brought to a hearing (SCRA 2005).

The principal decision makers at a hearing are the lay panel of three trained members of the public (who live within the local government area). The overall task of the hearing is to decide whether compulsory measures of care are indeed necessary, in which case a supervision requirement will be made ensuring statutory social work involvement. In practice, the majority of hearings result in a supervision requirement (in 2003/4, only one-fifth of cases were discharged by panels; SCRA 2005).

Recent changes
Although welfarist principles continue to underpin the hearing system, a number of changes have been made over the past decade. The first signs of change were introduced by the Children (Scotland) Act 1995, which enabled Reporters and panel members to place the principle of public protection above...
that of best interests in cases where the child was considered to be a risk to him/herself or others. Policy transformation, however, has gained momentum in the wake of devolution (in 1999), as ministers in the newly formed Scottish Executive have gradually embraced the ‘New Labour’ crime agenda (McAra 2006).

Key changes since devolution include: the piloting of youth courts for 16–17-year-old offenders (and some 15 year olds); new national objectives and standards for youth justice; a new administrative framework, which includes multi-agency youth justice teams with responsibility for the direction and implementation of policy; the expansion of restorative justice initiatives; the importation of ‘what works’ principles into a range of specialist programmes; a gradual elision between the new social inclusion, community safety and youth justice policy agendas, with increased emphasis on early targeted intervention to support at-risk children and their families (see McAra 2006); and a new policy focus on anti-social behaviour, with the extension of anti-social behaviour orders to the under 16s, the introduction of parenting orders and facilities for the electronic monitoring of children. Importantly, these changes have introduced a range of competing and somewhat contradictory rationales into the youth justice system (it is variously punitive, actuarial and restorative in orientation). Moreover, the system’s holistic and child-centred ethos has been gradually eroded as the new apparatus of youth justice is increasingly being utilized by the Scottish Executive as a mechanism through which its broader public reassurance and community regeneration strategies can be effected (see McAra 2006; Armstrong and McAra 2006).

Taken as a whole, these changes are indicative of a degree of policy convergence with the system south of the border in England and Wales, with the new pilot youth courts bringing Scotland more into line with other US and European jurisdictions (see McAra 2004a).

The Edinburgh Study of Youth Transitions and Crime

The Edinburgh Study is a longitudinal programme of research on pathways into and out of offending for a cohort of around 4300 young people who started secondary school in the City of Edinburgh in 1998, when they were aged around 12. One of the key objectives of the study is to explore the extent,

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6 Scotland now has its own Parliament, and justice and education have become separate departments in the newly formed Scottish Executive. These departments are jointly involved in policy relating to the youth justice system.

7 Indeed, at the launch of the pilot youth courts, Cathy Jamieson (Minister for Justice, at the time of writing) stated that ‘punishment is a key part of the youth justice process’ (McAra 2006).
nature and impact of the cohort’s contact with formal agencies of social control, including the police and the other institutions comprising the youth justice system (social work, the children’s hearing system and the courts).

Children from all school sectors are included (mainstream, special and independent). A census method was employed, resulting in 89 percent coverage of the eligible school population within Edinburgh (excluding non-participating schools and children opted out by parents). Response rates among the achievable population have been uniformly high (as indicated in Table 1).8

Information has been collected over six annual sweeps from a range of sources, including: questionnaires completed by cohort members; school records; and files held by police juvenile liaison officers, the Reporter and the social work department. At each sweep of the study, the period covered is the previous 12 months (with the exception of sweep 1, in which the reference period was ‘ever’), so that the study provides a continuous account of events in the lives of the cohort, and not just an account of selected time segments. Key themes covered in the questionnaire are: self-reported offending and drug and alcohol use; experience of victimization; friendship patterns, gang membership and friends’ offending; leisure activities, including hanging around; family structure and parenting; school experience; contacts with the police and youth justice agencies; neighbourhood dynamics; and a number of personality variables such as self-esteem and impulsivity.

Table 1  Edinburgh Study response rates

<table>
<thead>
<tr>
<th>Study year</th>
<th>Number achieved</th>
<th>% response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweep 1 (Age 11 1/2–12 1/2)</td>
<td>4300</td>
<td>96.2</td>
</tr>
<tr>
<td>Sweep 2 (Age 12 1/2–13 1/2)</td>
<td>4299</td>
<td>95.6</td>
</tr>
<tr>
<td>Sweep 3 (Age 13 1/2–14 1/2)</td>
<td>4296</td>
<td>95.2</td>
</tr>
<tr>
<td>Sweep 4 (Age 14 1/2–15 1/2)</td>
<td>4144</td>
<td>92.6</td>
</tr>
<tr>
<td>Sweep 5 (Age 15 1/2–16 1/2)</td>
<td>3861</td>
<td>89.1</td>
</tr>
<tr>
<td>Sweep 6 (Age 16 1/2–17 1/2)</td>
<td>3531</td>
<td>80.5</td>
</tr>
</tbody>
</table>

Note: Response rates exclude children attending non-participating schools but include those opted out by their parents.

8 A range of strategies has been used to achieve a very high response rate among the cohort. Children who have difficulty with reading or writing are given an appropriate level of help in completing the questionnaire, or are interviewed where necessary. Children not present at school after several visits are seen elsewhere (normally at home). Missing data were dealt with using a mixture of weighting and multiple imputation. (Further information on the aims and methods of the study can be found in Smith and McVie 2003.)
Form of analysis

Two phases of analysis were carried out for this article. Phase 1 explored selection effects at three different stages of the youth justice process: police beat officer decisions to charge; JLO decisions to refer the charged cases to the Reporter on offence grounds; and Reporter decisions to bring offence grounds cases to a hearing. Sweep 4 was chosen for this phase because it spans the peak age of referral to the Reporter (around age 15 – in terms of both national statistics and Edinburgh Study findings) and thus maximizes the number of cases that can be used. Phase 2 of the analysis examined the impact of these three different stages of agency contact on future offending, drawing on data from both sweeps 4 and 5. Detailed descriptions of all the variables used are contained in the appendix at the end of this paper.

Findings

Phase 1: Selection effects

Police beat officer decisions to charge

Although experience of adversarial police contact is fairly common among the youngsters in the cohort, most contact is minor in nature (for example, being told off or told to move on; see McAra and McVie 2005). At sweep 4, for example, only 464 (11 percent) cohort members had been charged by the police in the past year.

Descriptive analysis was carried out to explore differences in characteristics between those who reported being charged by beat officers and those who did not. This analysis revealed a range of variables that differentiated between these two groups: (i) gender; (ii) social deprivation as measured by family socioeconomic status, neighbourhood deprivation, and free school meal entitlement; (iii) family structure (a binary measure differentiating between children who had always lived with two birth parents and children who had lived, at any time, in another form of family); (iv) offending behaviour, including prevalence of drug and alcohol use and involvement in serious offending (our measure of serious offending comprises seven self-reported items: theft from a motor vehicle; riding in a stolen motor vehicle; carrying an offensive weapon; housebreaking and attempted housebreaking; fire raising; robbery; and involvement in six or more incidents of violence); (v) factors pertaining to visibility and ‘availability’ for policing, in particular hanging around, truanting from school\(^9\) and level of parental supervision;

\(^9\) Truanting is associated with availability for policing because the findings show that a high proportion of truants spend their time away from school hanging around the streets and other public places (see McAra 2004b).
and (vi) previous and current police contact, as measured by volume of adversarial police contacts over the past 12 months, experience of being charged by the police or referred by the police to the Reporter in earlier years, and whether the child’s friends had been in trouble with the police in earlier sweeps of the study.

Multivariate analysis was then undertaken to determine which factors best predicted being charged when controlling for each of the other variables. The method used was binary logistic regression. The dependent variable used was ‘police charge’ in the last year (which had values of 1 for ‘charged’ and 0 for ‘not charged’). The independent, or explanatory, variables were entered into the models using a forward stepwise procedure, thereby allowing the statistical package to exclude those variables that did not meet the significance criteria. A maximum likelihood paradigm was used, with a \(p\)-value for entry into the model of .05 (i.e. there is a less than 5 in 100 chance that the variables entered might not be predictive of the dependent variable) and for exclusion from the model of .1.

The results of the analysis are presented in Table 2. The left-hand column sets out all of the variables included in the modelling (namely those variables found to be significant at the descriptive analysis stage). The other columns show the variables that emerged as significant within the final model, including the odds ratio and \(p\)-values for each of the categorical and continuous variables. The odds ratio (OR) is the standardized coefficient, which indicates the strength of effect of each independent variable in the model on the dependent variable. Odds ratios for the categorical variables can be directly compared, and indicate the ratio of the odds of being charged by the police among one group (e.g. males) relative to the odds of another group (e.g. females). Odds ratios for each of the continuous variables can also be compared directly, since they were standardized before insertion into the models. The odds ratio for a continuous variable shows how the odds of being referred by the police are increased by a difference of one standard deviation on the scale of the variable.

As might be expected, involvement in serious offending continued to be an important predictor of being charged even when controlling for a range of other factors. Those who reported involvement in at least one form of serious offending were just under twice as likely to be charged as those reporting no such involvement. Illegal drug use, but not weekly alcohol use, was also a moderate predictor of being charged (OR 1.6). Again as one would expect, the greater the number of times a youngster comes to the attention of the police over a 12-month period, the more likely they are to be charged. Moreover, measures indicating availability for policing also continue to be important predictors of being charged, including persistent truancy (OR 1.8) and hanging around the streets most evenings (OR 1.7).
Those factors aside, the findings also suggest that police beat officers discriminate against certain categories of youngsters: in particular, boys and disadvantaged children (as measured by free school meal entitlement and neighbourhood deprivation, although household socioeconomic status dropped out of the final model). To rule out any potential effect of bias in police decision-making according to area of residence, individuals were clustered into neighbourhoods using multi-level modelling. Because clustering did not have any impact on which factors were significant within the final model, the findings suggest that the police are more likely to refer children from poor areas in general rather than from specific areas that are more...
heavily policed or that have become notorious or disreputable in the view of the police.

Importantly, however, even when controlling for the other factors, much the strongest predictor of being charged is having previous police charges. Children who reported that they had been charged in previous years were over seven times more likely to be charged at age 15 than were children with no such history – a factor that is completely independent of their current involvement in serious offending and their more recent history of police adversarial contact. Interestingly, the peer effect of having friends as perceived troublemakers disappears in the context of multivariate analysis, suggesting that the raw difference between the charged and non-charged groups found in the descriptive analysis is fully accounted for by the other variables in the regression model.

Police juvenile liaison officer decisions to refer cases to the Reporter

Although current protocols state that all youngsters who are charged by the police should be referred to the Reporter, our findings would suggest that police juvenile liaison officers exercise a high level of discretion in this regard. At sweep 4, over two-fifths (43 percent) of children who reported that they had been charged by the police were not subsequently referred to the Reporter.

Descriptive analysis was again undertaken to identify factors that differentiated those in the charged group who were subsequently referred to the Reporter \( (n = 265) \) from those who were not \( (n = 199) \). The same basic variables were included at this stage of analysis as above, but with two additions: a binary variable relating to whether the child had been referred by the JLO to the Reporter at an earlier sweep of the study or not; and a volume of serious offending measure (to determine whether persistent serious offending was associated with referral).

As before, those variables that proved to be significantly related to referrals to the Reporter during descriptive analysis were entered into a binary logistic regression model to determine the best explanatory factors when controlling for each of the others. The dependent variable was ‘referral to the Reporter’ (which had values of ‘0’ for not referred and ‘1’ for referred). Importantly, the descriptive analysis showed that neither gender nor volume of serious offending discriminated between the groups and thus these variables were not included in the regression modelling. The results of the multivariate analysis are presented in Table 3.

Although all our measures of social deprivation were highly related to Reporter referral in descriptive analysis, none of these measures remained significant within the regression models once other factors were controlled for. By contrast, family structure did appear to be a key driving force behind the referral process. Children who were not currently living in a two-parent
family were almost twice as likely to be referred to the Reporter than those living with both birth parents. However, as with police decisions to charge, much the strongest predictor of referral relates to previous system contact. Youths who had a history of referral to the Reporter by the JLO at earlier sweeps of the study, were just over four times as likely to be re-referred as were youngsters with no such history. Just as an early history of being charged propels youngsters into a repeat cycle of charges, so too does an early history of referral into the hearing system lead to a repeat cycle of referral by the police in later years.

**Reporter decisions to refer a case to a hearing**

As noted earlier, the Reporter to the children’s hearing system investigates all referrals to determine whether at least one of the statutory grounds has been met and whether the child is in need of compulsory measures of care. Of the 265 children in our cohort who were referred to the Reporter on offence grounds at sweep 4, only 80 (30 percent) were referred by the Reporter to a hearing. What factors then discriminated the children referred by the Reporter to a hearing from those who were not?

The explanatory variables used in this stage of the analysis differed in certain key respects from those used to explain police referral practices,
since the information available to Reporters is normally based only on reports (e.g. from the police, education or social work) rather than on face-to-face contact with the child or family at the point of referral. Thus, in addition to basic demographic variables (gender, socioeconomic status, family structure and social deprivation), a range of variables were derived from information in Reporter files: grounds for referral (whether single offence grounds, or joint offence and care and protection grounds); volume of police charges (as a measure of officially recorded offending); vulnerability in terms of the volume of identified needs (relating to the personal, family and/or school circumstances of the child, see McAra 2005b); and current and previous hearings contact in terms of the total volume of referrals received by the Reporter within the past year, and whether the child was known to the Reporter by the first sweep of fieldwork (by age 12 approximately).

Again, analysis started with descriptive statistics to identify factors that differentiated offenders referred to a hearing from those against whom no formal action was taken. All of the variables that were significantly associated with referral to a hearing at the descriptive stage were then included in logistic regression analysis. The dependent variable was ‘hearing held’ (which had values of 0 for ‘no hearing’ and 1 for ‘hearing held’). The results are presented in Table 4.

Table 4 confirms that vulnerability is a strong driving force behind Reporter decisions to refer children to a hearing. At sweep 4, being brought

![Table 4](image)

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to a hearing was strongly predicted by a greater volume of needs. Family structure also remained an important predictor of a hearing being held, when other factors were held constant, with those living in non-two-parent families being almost four and a half times more likely to be referred to a hearing than were those living with both parents. Similarly, the greater the volume of police charges over the past 12 months, the more likely the child was to be referred to a hearing. Importantly, however, having a hearings record by age 12 was a strong predictor of further system involvement in later years. Children with an early record were almost three times as likely to be referred to a hearing at sweep 4 as were their counterparts with no such history. Thus, even after controlling for risky behaviour and vulnerability, early system involvement appears to result in a repeat cycle of referral.

It is important to note that all but one of those brought to a hearing received a supervision requirement. The child who did not was already on supervision, which was terminated at this point. This highlights the crucial role played by the Reporter in terms of access to services and supervision for children. Since the panel very rarely discharges cases, it is in effect the Reporter who determines which children end up on supervision.

In summary, phase 1 of the analysis has shown that decision-making at each stage of the youth justice referral process is strongly influenced by previous police and system contact. Even when controlling for involvement in serious offending, social deprivation, family structure and factors that render children more available for policing, children who have been identified by the police as troublemakers in previous years are significantly more likely to be charged and subsequently referred to the Reporter than are serious offenders with no such history. Similarly, even when controlling for level of need and officially recorded offending, youngsters who have an early hearings record are more likely to be referred to a hearing by the Reporter than are other equally ‘needy’ offenders who are coming to the attention of the Reporter for the first time.

Phase 2: The impact of agency contact on subsequent behaviour

The second phase of analysis was designed to explore the impact of police and Reporter contact on subsequent behaviour in terms of involvement in serious offending. The focus is on system contact experienced at sweep 4, as described above, with a view to exploring change in serious offending at sweep 5. In line with phase 1, three progressively more intensive levels of system contact were evaluated:

- being charged by the police but there being no further action (i.e. the police do not refer the case to the Reporter, the charge amounting, therefore, to a form of moral scolding);
being referred by the police to the Reporter on offence grounds *but not being brought to a hearing* (i.e. the case is diverted away from the formal system by the Reporter);

- being referred by the police to the Reporter on offence grounds and being brought to a children’s hearing, *resulting in the child being placed on supervision*.

To take account of any differences in the characteristics between those who progressed through the system and those who did not, and to legislate against the effect of potential bias caused by the systemic selection effects identified at phase 1, a process of synthetic case control analysis was carried out using a technique known as propensity score matching (PSM). This quasi-experimental technique involves pairing individuals or ‘cases’ who receive a form of intervention with a closely matched comparison group of ‘control’ subjects who do not (see Rosenbaum and Rubin 1983). The analysis was carried out using a series of binary logistic regression models, which were bootstrapped with 200 replications to minimize variance and produce robust standard errors (see Becker and Ichino 2002; Cummings and McKnight 2004).10

Three sets of propensity scores were calculated, each one representing the probability that an individual would have received intervention at one of the three stages examined. The probabilities were conditional upon a set of observed characteristics that were available for both those who received intervention and the potential comparators. Ten control variables that emerged as significant in predicting selection through the various stages of the system were taken from the phase 1 analysis to match the groups. These were: gender; non-two-parent family; free school meal entitlement; drug use in past year; hanging out most days; truancy; neighbourhood deprivation; early police contact; number of times in trouble with the police; and volume of serious offending (see the appendix for descriptions of these variables). Only three variables could not be used from phase 1 (volume of needs, number of charges and hearings record at sweep 1) because they were derived from the Reporter’s files, hence this information was not available for the non-referred groups.

Only those variables that were significant in the final regression models were retained for matching, to prevent constructing over-parameterized models that might have reduced matching power and increased model variance (Caliendo and Kopeinig 2005). The exception to this rule was the serious offending variable, which was always retained to ensure that the groups were matched as closely as possible on the outcome measure. The PSM procedure was set to allow for multiple matches (4:1) for each person who had intervention, since the pool of potential matches at each stage was

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10 For a detailed explanation of the PSM technique used, please contact the authors of this paper.
larger than the intervention group. This over-sampling approach both maximizes the use of available data and minimizes the potential impact of large standard errors on the outcome measures (Bryson et al. 2002).

Table 5 presents a summary of the characteristics of the intervention group and the matched comparison group for each stage of the analysis. The groups were constructed so as to ensure that the impact of system contact at each stage would not be confounded by the effects of other system contact, especially earlier contact with the children’s Reporter. Therefore, the pool of potential matches at all three stages was restricted to those individuals who had never experienced a referral to or contact with the children’s hearing system (either before or subsequently).

**Results of analysis**

The three intervention groups were compared with their matched comparison groups on the basis of both the prevalence and the frequency of self-reported serious offending at sweep 4 (the point of intervention) and sweep 5 (one year later). The results of these analyses (summarized in Table 6) confirm that the matching process was successful in ensuring that there was no significant difference in either the prevalence or the frequency of serious offending at sweep 4 between any of the intervention and comparison group pairings.

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**Table 5** Summary of the matched groups from propensity score matching

<table>
<thead>
<tr>
<th>Stage 1: Police charge</th>
<th>Intervention group</th>
<th>Comparison group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charged by police at sweep 4 but no further action taken and never referred to the Reporter (n = 99)</td>
<td></td>
<td>Had adversarial police contact but not charged at sweep 4 and never referred to the Reporter (n = 238)</td>
</tr>
</tbody>
</table>

| Stage 2: Referral to Reporter | | |
|-----------------------------|------------------|
| Referred by police to the Reporter at sweep 4 on offence grounds but no further action taken and never attended hearings (n = 130) | | Had adversarial police contact (including charges) but never referred to the Reporter (n = 322) |

| Stage 3: Brought to a hearing | | |
|-------------------------------|------------------|
| Referred by police to the Reporter at sweep 3 or 4 on offence grounds and brought to a hearing at sweep 4 (n = 59) | | Had adversarial police contact (including charges) but never referred to the Reporter (n = 117) |

*Note: Comparison group numbers are larger than for the intervention group due to over-sampling; weighting was used during analysis to balance the samples.*
Overall, the figures show a marked reduction in self-reported serious offending between sweeps 4 and 5 among all of the groups, regardless of the stage they had reached in the system. Nevertheless, comparison between the groups at sweep 5 shows some interesting differences. At the police charge and Reporter referral stages, there was no significant difference in prevalence or frequency of serious offending between the intervention and comparison groups at sweep 5. However, those who were brought to children’s hearings at sweep 4 were significantly more likely to report involvement in serious offending one year later than were their comparable counterparts. The overall mean frequency of serious offending was also greater among the hearings group than the comparison group, although the difference was just outside the bounds of the 95 percent confidence level.

In order to explore intra-group change in self-reported serious offending between the two time periods, the overall percentage change in offending was calculated and Wilcoxon non-parametric testing was carried out. The results of these analyses are summarized in Table 7. The first point to note is that all of the groups had reduced their involvement in serious offending by a sizeable amount, which corresponds with a general pattern of desistance among the cohort as a whole (see Smith 2006). Interestingly, the biggest

<table>
<thead>
<tr>
<th>Stage 1: Police charge</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Charged group (n=99)</td>
<td>74.7</td>
<td>8.17</td>
<td>49.0</td>
<td>4.07</td>
</tr>
<tr>
<td>Comparison group (n=237)</td>
<td>71.0</td>
<td>7.89</td>
<td>49.5</td>
<td>4.53</td>
</tr>
<tr>
<td>Difference (p-value)</td>
<td>0.552</td>
<td>0.458</td>
<td>0.942</td>
<td>0.774</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stage 2: Referral to Reporter</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Referred group (n=130)</td>
<td>69.2</td>
<td>8.03</td>
<td>50.0</td>
<td>4.91</td>
</tr>
<tr>
<td>Comparison group (n=322)</td>
<td>63.6</td>
<td>7.75</td>
<td>47.0</td>
<td>4.51</td>
</tr>
<tr>
<td>Difference (p-value)</td>
<td>0.338</td>
<td>0.452</td>
<td>0.625</td>
<td>0.848</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stage 3: Brought to a hearing</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hearing group (n=59)</td>
<td>67.8</td>
<td>9.63</td>
<td>71.7</td>
<td>6.64</td>
</tr>
<tr>
<td>Comparison group (n=117)</td>
<td>67.8</td>
<td>8.88</td>
<td>52.5</td>
<td>4.51</td>
</tr>
<tr>
<td>Difference (p-value)</td>
<td>1.000</td>
<td>0.691</td>
<td>0.037</td>
<td>0.076</td>
</tr>
</tbody>
</table>

Note: Difference in mean volume between groups was calculated using the Wilcoxon Mann–Whitney test of mean ranks. Analysis was based on imputed offending data and weighted to take account of over-sampling within the matched groups.
reduction in serious offending among the intervention groups is observed at the level of the police charge (50 percent); while the biggest reduction among the comparison groups was at the hearings level (49 percent).

Most importantly, Table 7 reveals that, at the police charging and Reporter referral stages, the reduction in serious offending among those who received either of these forms of intervention and among those who did not is statistically significant. However, among those who were brought to a children’s hearing on offence grounds and made subject to compulsory measures of care, there was no significant reduction in their self-reported frequency of serious offending. This compares with a much larger and statistically significant drop in serious offending among the comparison group. In other words, significant desistance from offending is apparent among young people who have either no or minimal system contact, whereas those who are drawn furthest into the system with the aim of receiving intervention intended to address their behavioural problems are inhibited in this regard.

Although random assignment to groups was not possible within this study, the quasi-experimental nature of the analytical approach and the integrity of the matching process have ruled out the possibility that the poorer outcomes for the intervention group are due to system selection of the most incorrigible or intractable cases. Indeed, phase 1 of the analysis has shown that the most persistent serious offenders are not always referred by the JLO to the Reporter. An alternative explanation for these findings is that children who attend hearings are more likely to disclose their offending than

<table>
<thead>
<tr>
<th>Stage 1: Police charge</th>
<th>% change in mean frequency of serious offending</th>
<th>Difference (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charged group (n = 99)</td>
<td>−50.2</td>
<td>.000</td>
</tr>
<tr>
<td>Comparison group (n = 237)</td>
<td>−42.6</td>
<td>.001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stage 2: Referral to Reporter</th>
<th>% change in mean frequency of serious offending</th>
<th>Difference (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referred group (n = 130)</td>
<td>−38.9</td>
<td>.001</td>
</tr>
<tr>
<td>Comparison group (n = 322)</td>
<td>−41.9</td>
<td>.000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stage 3: Brought to a hearing</th>
<th>% change in mean frequency of serious offending</th>
<th>Difference (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hearing group (n = 59)</td>
<td>−31.0</td>
<td>.222</td>
</tr>
<tr>
<td>Comparison group (n = 117)</td>
<td>−49.2</td>
<td>.001</td>
</tr>
</tbody>
</table>

Notes: Change in mean volume within groups was tested using Wilcoxon signed rank test. Analysis was based on imputed offending data and weighted to take account of oversampling within the matched groups.
are the comparison group, possibly as a direct result of system contact (i.e. they have nothing to lose by doing so). However, there are several arguments that might be levelled against such a claim.

There is a considerable body of literature that has explored the issue of reliability in relation to self-reports of delinquency by young people, and these have indicated a consistently high level of truthfulness amongst respondents (see Gold 1970; Hindelang et al. 1981; Huizinga and Elliot 1986; Junger-Tas 1994). Following a comprehensive review, Thornberry and Krohn (2000) conclude that ‘self-reported measures of delinquency are as reliable as, if not more reliable than, most social science measures’. Sutterer and Karger (1994) found that willingness to give written consent for examination of official (police and court) files was a positive indicator of the validity of individual self-report data. Coincidentally, at sweep 4 of the Edinburgh Study, respondents were asked to sign a permission slip for access to their police records. Comparison of the results reveals no significant difference in consent rates between those who were placed on supervision and their matched comparison group. This further refutes the suggestion that there was any difference in the validity of these individual’s self-reported delinquency at this stage. Testing of the Edinburgh Study data on a number of other dimensions supports these findings (McAra et al. forthcoming).

**Nature of social work contact and services offered**

Whereas the children’s hearing system is the administrative body that decides whether children should be made subject to compulsory measures of care, it is social workers who are responsible for implementing supervision requirements and securing access to relevant interventions. It is not possible within the remit or scope of this article to conduct an in-depth evaluation of the nature and extent of the intervention put in place for each child who attended a hearing. However, data collected from social work files do reveal some interesting details, in particular the relative paucity of regular one-to-one contact with child offenders and that social workers, despite political pressures to the contrary, continue to adhere to a social educational model of intervention when selecting suitable services for young offenders.

Table 8 shows that the most common form of disposal for the group who were brought to hearings was a home supervision requirement, which was the case for half of these individuals. Only 1 in 10 was detained in secure care as a result of the referral. Social work contact mainly comprised regular work carried out with the family as a whole (see Table 9); by contrast, only a quarter of these children received regular individual work. In a further quarter of cases, social work contact was either sporadic or on an emergency basis only.
Most of those brought to hearings were referred to specialist services in addition to receiving general social work. In the majority of cases, some kind of educational service was contacted, such as a referral to an educational welfare officer or psychologist (56 percent) or the Youth Strategy Group (49 percent) – a service predominantly aimed at tackling truancy and school exclusion (see McAra 2005b). Importantly, Table 9 also reveals that only one in three of these children were in receipt of any offence-focused work.

### Discussion and implications

The overall aim of this article was to conduct an exploration of the impact of the Scottish model of youth justice on future offending within the context of ongoing debates about the effectiveness of evidence-based policy. Taken together, our findings indicate that the key to reducing offending may lie in...
minimal intervention and maximum diversion: doing less rather than more in individual cases may mitigate against the potential for damage that system contact brings.

Filtering and labelling

The findings have shown a complex filtering process is at work in terms of gate-keeping practices, which means that certain groups of youngsters – who might readily be termed the ‘usual suspects’ – become the principal focus of agency attention. These youngsters are recycled into the hearing system again and again, no matter whether their offending has diminished in seriousness or frequency, or whether their formally assessed levels of need have been addressed.

Such working practices on the part of gatekeepers place serious limitations on the capacity of the Scottish youth justice system to deliver the current offending-reduction programme and to achieve set performance indicators. Our findings suggest that targeted early intervention strategies, far from diminishing the number of offence referrals, are likely to widen the net of potential recipients even further. Greater numbers of children will be identified as at risk and any early hearing involvement will result in constant recycling into the system, thereby swelling rather than diminishing the number of youngsters retained in the system until their 16th or even 18th birthdays.

The dominance of previous police and Reporter contact within gate-keeping practices also means that, even if the ‘usual suspects’ manage to access programmes or services that address offending behaviour, this in itself will not diminish their chances of re-referral into the system. Police and Reporter decision-making thus may be setting up the youth justice system as a whole, as well as the children who come within its purview, to a high risk of ‘failure’. As such, the findings show how the working cultures of agencies within youth justice can serve to de-rail ‘evidence-based’ policy (albeit unintentionally), indicating the need for a more careful understanding of the vagaries of the cultural and social environment before transplanting policies from jurisdiction to jurisdiction.

The damaging consequences of agency contact

More significantly, our findings provide some support for the international longitudinal research discussed earlier. In particular, they confirm that repeated and more intensive forms of contact with agencies of youth justice may be damaging to young people in the longer term, even within the confines of a predominantly welfare-based system. As we have shown, forms of diversion that serve to caution without recourse to formal intervention, such as
police decisions to warn rather than refer to the JLO and Reporter decisions not to hold a hearing, are associated with desistance from serious offending. By contrast, crossing the threshold into the realm of actual intervention, through being brought to a hearing and placed on social work supervision, is not linked with a significant decline in serious offending. Such findings are supportive of a maximum diversion approach.

Why intervention may be failing

As noted above, the Bremen/Denver research concluded that certainty of response to offending may be of greater import in tackling offending than the severity or otherwise of sanctioning (Huizinga et al. 2003). The labelling processes that we have identified as endemic within the Scottish youth justice system mean that official action taken against youngsters is spurred on by factors for the most part in addition to their offending (at the police beat officer and Reporter stages) and sometimes to the exclusion of their offending (at the JLO stage). Importantly, youngsters are powerless to alter the majority of the factors that propel them further and further into the system at age 15 (including family structure, social deprivation, gender, and being known to the police and Reporter in earlier years). The only real certainty for such children is that the master status of troubled/troublesome youngster results in amplified levels of intervention. The fact that children cannot readily shrug off ascribed labels may in turn create the self-fulfilling prophecy identified by labelling theorists such as Becker (1963) and Lemert (1964) – a topic that is explored in McAra and McVie (forthcoming).

A second factor that may be linked to system failure is the nature and the extent of social work supervision on offer. The information available for our intervention group indicates that supervision is often intermittent in nature and geared overwhelmingly towards educational provision, with few youngsters receiving offence-focused work. In addition, social work tends to be directed at the level of the family rather than the individual child, with only a quarter of children meeting their social worker regularly on a one-to-one basis. Of course, even if social work intervention at the individual level were to be improved in terms of resource allocation and targeted provision, the extent to which such services would have an impact in reducing aggregate rates of offending is questionable. As we have shown, the number of offenders who progress through to the hearing stage of the system is relatively small, and the selection effects inherent in the system determine that it is not always the most persistent or serious offenders who progress to this point.

As was noted, the emphasis on education and family within supervision indicates that social workers (in spite of political pressures to the contrary) are continuing to work within a predominantly welfarist paradigm (which
was the core ethos of youth justice in Scotland until at least the mid-1990s). We would argue that it is not the welfarist paradigm per se that is damaging to young people (or indeed the nature of the social work services on offer), but rather the cumulative effect of systemic contact over many years, which, our findings suggest, has the potential to stigmatize and criminalize.

Is doing nothing better than doing something?

Reducing offending is of course only one of a complex set of aims that many western youth justice systems are now required to deliver (with youth justice agencies also contributing to the delivery of community safety and public reassurance strategies). A key challenge for youth justice professionals and politicians is to balance the needs of the offender against the rights of the community and the broader public interest. Arguably, however, policy in many jurisdictions, including Scotland, is increasingly favouring the community and public interest over that of children (McAra 2006; Muncie and Goldson, 2006). Concern for the community and the wider public has manifested itself in ‘tough’ talk about youth crime. In these circumstances, an evidence-base that suggests that less intervention is rather more effective in reducing offending becomes ‘politically’ untenable.

The original Kilbrandon vision underpinning the Scottish system was one of active communities involved in the process of youth justice through the lay panel and common ownership of the problems posed by troubled/troublesome children. This vision, we would argue, should be the starting point for any minimal interventionist approach. It is a vision that is under threat within Scotland, as political debates about youth crime are increasingly conducted within a lexicon of punishment and exclusion.

Conclusion

Current policy convergence across many western jurisdictions – and the UK in particular – is characterized by an uneasy mixture of penal rationales. Thus punitive and emotive political discourse about youth crime is overlaid by the neutral and scientific language of new public management and the apparently rich promise of restoration, reparation and social inclusion.

The findings from the Edinburgh Study add further weight to the international research evidence that youth justice systems may be congenitally unable to deliver the reductions in offending both that current performance indicators demand and that so-called evidence-based policy suggests are possible. This of course raises broader questions about what the aim of youth justice ought to be.
We have argued that the key to reducing youth offending lies in maximum diversion and minimum intervention. As noted earlier, the Scottish system should be better placed than a number of its counterparts across Western Europe and the USA to deliver such an agenda, principally because its founding principles were explicitly aimed at decriminalization and destigmatization. However, these principles have been subverted by the working cultures of agencies within the system (including the police and the Reporter), the fragmented and sometimes chaotic nature of social work services and supervision, and recent political interference. Somewhat ironically, the early welfarist underpinnings of the system may have exacerbated this process, given the capacity that welfare-based systems in general have for lengthy periods of intervention (which in Scotland can be extended from birth to 18, depending on the grounds) and the characteristically high levels of discretion that are often afforded to the experts who colonize them.

Accepting that, in some cases, doing less is better than doing more requires both courage and vision on the part of policy makers. A realization of this vision in turn requires acceptance that youth justice agencies cannot, by themselves, make the wider public feel safer nor can they mend broken families and remake shattered communities. To the extent that systems appear to damage young people and inhibit their capacity to change, then they do not, and never will, deliver justice.

Appendix

Appendix 1 Description of variables

<table>
<thead>
<tr>
<th>Domain</th>
<th>Variable</th>
<th>Variable description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Gender</td>
<td>Male=1, Female=0</td>
</tr>
<tr>
<td>Social deprivation</td>
<td>Socioeconomic status</td>
<td>Head of household socioeconomic status&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Manual/unemployed=1, Non-manual=0</td>
</tr>
<tr>
<td></td>
<td>Neighbourhood deprivation</td>
<td>Neighbourhood deprivation scale based on six census-defined indicators of social or economic stress&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unstandardized scale 0–13.31</td>
</tr>
<tr>
<td></td>
<td>Free school meal entitlement</td>
<td>Whether ever entitled to free school meals at school (from school records) up to sweep 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes = 1, No = 0</td>
</tr>
</tbody>
</table>

(continued)
## Appendix 1 (continued)

<table>
<thead>
<tr>
<th>Domain</th>
<th>Variable</th>
<th>Variable description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family structure</td>
<td>Family structure</td>
<td>Whether always lived with two birth parents, or lived within some other family structure up to sweep 4. Lived in non-two-parent family=1, Always two birth parents=0</td>
</tr>
<tr>
<td>Offending behaviour</td>
<td>Serious offending (prevalence)</td>
<td>Involvement in any one of the following ‘serious’ offences reported at sweep 4: theft from a motor vehicle; riding in a stolen motor vehicle; carrying an offensive weapon; housebreaking or attempted housebreaking; fire raising; robbery; and involvement in six or more incidents of violence. Yes=1, No=0</td>
</tr>
<tr>
<td></td>
<td>Serious offending (frequency)</td>
<td>Total number of serious incidents committed at sweep 4 (assuming a maximum of 11 for each type) Unstandardized scale 0–77</td>
</tr>
<tr>
<td>Offending behaviour</td>
<td>Drug use</td>
<td>Drug use in the last year at sweep 4 Used drugs=1, Did not use drugs=0</td>
</tr>
<tr>
<td></td>
<td>Alcohol use</td>
<td>Frequency of alcohol use at sweep 4 Drink weekly=1, Drink less often/not at all=0</td>
</tr>
<tr>
<td></td>
<td>Number of police charges</td>
<td>Number of police charges logged in children’s hearing records at sweep 4 Unstandardized scale 0–108</td>
</tr>
<tr>
<td>Visibility/availability</td>
<td>Truancy</td>
<td>Frequency of truancy in last year at sweep 4 More than 5 times=1, 5 times or fewer=0</td>
</tr>
<tr>
<td></td>
<td>Hanging about</td>
<td>Frequency of hanging about the streets at sweep 4 Most evenings=1, Less often/not at all=0</td>
</tr>
<tr>
<td></td>
<td>Parental supervision</td>
<td>Scale based on three indicators of lack of parental supervision (knowing where child is, who with and what time will be home) measured at sweep 4 Unstandardized scale 0–9</td>
</tr>
<tr>
<td></td>
<td>Police contact at sweep 4</td>
<td>Measure of number of times in trouble with the police in last year at sweep 4 (&gt;10 times, capped at 11) Unstandardized scale 0–11</td>
</tr>
</tbody>
</table>
## Appendix 1 (continued)

<table>
<thead>
<tr>
<th>Domain</th>
<th>Variable</th>
<th>Variable description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Police charges at earlier sweep</td>
<td>Whether self-reported being charged by police earlier than sweep 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes=1, No=0</td>
</tr>
<tr>
<td></td>
<td>Police referral to Reporter at</td>
<td>Evidence in children’s hearings record of police referral earlier than sweep 4</td>
</tr>
<tr>
<td></td>
<td>earlier sweep</td>
<td>Yes=1, No=0</td>
</tr>
<tr>
<td></td>
<td>Friends police contact at earlier</td>
<td>Respondent reported having friends in trouble with the police earlier than sweep 4</td>
</tr>
<tr>
<td></td>
<td>sweep</td>
<td>Yes=1, No=0</td>
</tr>
<tr>
<td>Vulnerability</td>
<td>Grounds for referral</td>
<td>Whether referred to the Reporter on offence grounds only or on joint offence and care</td>
</tr>
<tr>
<td></td>
<td></td>
<td>and protection grounds at sweep 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Joint grounds=1, Offence grounds only=0</td>
</tr>
<tr>
<td></td>
<td>Volume of needs</td>
<td>Total number of issues raised in children’s hearing records relating to personal,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>social and familial adversity experienced by the child in the last year at sweep 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unstandardized scale 0–33</td>
</tr>
<tr>
<td>Hearings contact</td>
<td>Referrals at sweep 4</td>
<td>Total number of referrals received by the Reporter at sweep 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unstandardized scale 0–30</td>
</tr>
<tr>
<td></td>
<td>Hearing record at sweep 1</td>
<td>Whether referred to the Reporter up to sweep 1 (from birth to age 12 approximately)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes=1, No=0</td>
</tr>
</tbody>
</table>

* For a full description of these variables, see McAra and McVie (2005).

### Note

Grateful thanks are due to Rod Morgan and David J. Smith for comments made on an earlier draft of this paper presented at the Nuffield Foundation (May 2006).

### References


Lesley McAra

Lesley McAra is Senior Lecturer in Criminology in the Centre for Law and Society, University of Edinburgh, UK, and co-director of the Edinburgh Study of Youth Transitions and Crime.
lesley.mcara@ed.ac.uk

Susan McVie

Susan McVie is Senior Research Fellow in the Centre for Law and Society, University of Edinburgh, UK, and co-director of the Edinburgh Study of Youth Transitions and Crime.
s.mcvie@ed.ac.uk