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Changes in Crime and Punishment in America, England and Sweden Between the 1980s and the 1990s

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Abstract

This paper extends our previous research and provides national estimates for the flow of offenders through different criminal justice systems, from the commission of crimes through police recording and conviction to imprisonment. National estimates are presented for six offences (burglary, vehicle theft, robbery, assault, rape and homicide) in three countries (America, England and Sweden) between 1981 and 1991. During this period, burglary and vehicle theft increased considerably in England and Sweden. There were large increases in assault in the police data but not in the victimization data in all three countries. The risk of conviction and custody generally increased in America and decreased in England and Sweden, especially for burglary and vehicle theft. There was a high negative correlation between changes in the crime rate (according to victimization data) and changes in the probability of an offender getting convicted. *(Studies on Crime and Crime Prevention Vol. 3 1994. National Council for Crime Prevention).*

Keywords: comparative follow-up study, victimization rate, conviction rate, imprisonment rate, sentence length, time served, burglary, vehicle theft, robbery, assault, rape, homicide.

INTRODUCTION

This paper presents national estimates for the flow of offenders from crimes committed to crimes reported, recorded and cleared, convictions, prison sentences and time served, for America (the United States), England (including Wales) and Sweden. Estimates are presented for six offences: burglary, vehicle theft, robbery, assault, rape and homicide. The paper is an extension of our previous comparisons between America and England (Farrington & Langan, 1992) and between England and Sweden (Farrington & Wikström, 1993), although all figures have been recalculated for the present analyses.

Previously, we studied changes in crime and punishment in England between 1981 and 1987, because the first national English victim survey (the British Crime Survey or BCS) was carried out for 1981 (Hough & Mayhew, 1983) and the third was carried out for 1987 (Mayhew, Elliott & Dowds, 1989). Hence, the publication of results from the 1987 survey provided the first opportunity in England to compare changes in victim-survey crime rates with changes in police-recorded crime

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rates over a reasonable time period (six years, between 1981 and 1987). Also, national English estimates for average sentence length and average time served in prison were first published for 1986 (Home Office, 1987, p.77), and retrospective information was then provided for the previous 10 years, so it then became possible for the first time in England to estimate the flow of offenders from crimes committed to time served in prison.

Largely by specially commissioned data collection efforts, we were able to collect broadly comparable national data for Sweden in 1981 and 1987. The Swedish victimization estimates were the least satisfactory. Victimization questions were asked as part of the annual Living Conditions Survey or LCS (Statistics Sweden, 1991c), which is an all-purpose national survey including questions on many different topics. It is inevitable that victimization results from such a survey (like the English General Household Survey) are less satisfactory than those from a specially designed victim survey such as the BCS, where the victimization questions are detailed and extensive and where great care is taken to ensure that definitions of crimes are comparable to those used in the official English Criminal Statistics (Home Office, 1993a).

In America, the first national estimates for numbers of adult convictions and for the proportion leading to custody (prison or jail) were obtained in 1986 in the National Judicial Reporting Programme or NJRP (Langan, 1989). This data collection effort was then repeated at two-year intervals (Langan & Dawson, 1990; Langan & Solari, 1993). Hence, American conviction and custody data are available for 1986 but not for 1987. American national offence-specific data on prison admissions and releases, and on sentence length and time served, were published for 1981 in the National Corrections Reporting Programme or NCRP

(Greenfeld & Minor-Harper, 1984). Therefore, we studied changes in crime and punishment in America between 1981 and 1986. We estimated changes in adult convictions between 1981 and 1986 from changes in adult arrests, and we estimated changes in the probability of custody from changes in prison admissions between 1981 and 1986.

Our previous papers (Farrington & Langan, 1992; Farrington & Wikström, 1993) include extensive appendices giving detailed information about how all the national estimates for 1981 and 1986-87 were derived. Consequently, in this paper, we will primarily explain how we obtained follow-up data. Our main aim was to obtain American and Swedish data that were comparable to English data. Readers who are not interested in technical details should move quickly to the results sections, while those who require more technical details should consult our previous papers. Our follow-up data for England are for 1991, because the fourth national English victim survey was carried out for that year (Mayhew & Maung, 1992; Mayhew, Maung & Mirrlees-Black, 1993). We were also able to obtain Swedish follow-up data for 1991. In America, because the NJRP is carried out at two-year intervals, our follow-up data are for 1990 (Langan & Dawson, 1993).

The legal definitions of burglary, vehicle theft (including unauthorized taking), robbery and homicide (murder and manslaughter including infanticide in England) are very comparable in all three countries. Rape is less comparable in theory; for example, whereas English law requires offenders to be male and victims to be female, Swedish law (since 1984) allows males and females to be both offenders and victims. However, rape is very comparable in practice, because all or virtually all offenders are male and all or virtually all victims are female in all three countries.

The least comparable offence is as-

sault. An assault becomes an aggravated assault in America if the victim suffers knife, stab or gun wounds, injuries, broken bones or teeth knocked out, or if the victim is knocked unconscious, or if any weapon is used. In contrast, non-weapon assaults causing bruises, scratches, cuts, swelling, a black eye or no visible marks are classified as simple assault. The English distinction between wounding and common assault is similar, except that minor assaults causing cuts may be classified as wounding. In Sweden, serious assaults are those involving life-threatening grievous bodily harm, while petty assaults are those involving injury or at least visible marks such as a black eye or bruises. Assaults causing negligible injury are classified as molestation. In order to obtain the closest possible comparability, we compared aggravated assault in America with wounding in England and with serious and petty assault in Sweden. However, the American definition is the most restrictive, the English definition is wider, and the Swedish definition is even more inclusive. Therefore, we cannot claim that our assault figures are very comparable between countries. All our figures are very comparable over time within countries.

THE AMERICAN FOLLOW-UP

In America, the number of victim-survey offences, comparable population figures, and the probability of reporting to the police were obtained from the 1990 National Crime Victimization Survey or NCVS (Bastian & De Berry, 1992, pp.16, 102). The 1990 victimization data were based on interviews with 95,000 persons (97 % of the target population). For comparability with the BCS, only completed motor vehicle thefts and completed aggravated assaults with injury were counted. Other population figures were obtained from the Bureau of the Census (1993b), using the most recent estimates

for 1981 and 1986 as well as for 1990. The number of motor vehicle registrations (189 million in 1990) was obtained from the Bureau of the Census (1993a, Table 1002). The average number of offenders per offence was obtained from the NCVS (p.82) for robbery, aggravated assault and rape, and specially calculated for other offences (from victimization data for burglary and vehicle theft, and from police data for homicide). The number of police-recorded offences and the probability of offences being cleared by arrest were obtained from the 1990 Uniform Crime Reports or UCR (Federal Bureau of Investigation, 1991, pp.8, 15, 18, 23, 27, 38, 165).

The number of police-recorded offences that were comparable with victim-reported offences (needed for estimating the probability of a victim–reported offence being recorded) were estimated in various ways. Residential burglaries were obtained from the UCR (p.162). We assumed that the proportions of vehicle thefts that were completed, and of aggravated assaults that were completed with injury, were the same in the UCR as in the NCVS. Following Biderman and Lynch (1991), we estimated that 17 % of vehicle thefts were against businesses, and we estimated that 25 % of robberies were against businesses from the UCR (p.162). Commercial robberies are not counted in the NCVS unless the victim's own personal possessions are stolen. We increased the number of UCR robberies by 11 % to convert them to the number of victimizations (Bastian & De Berry, 1992, p.70), because the UCR counts robbery incidents while the NCVS counts robbery victimizations (i.e. one victim = one offence). From data for several states provided by Ruder (1993), we estimated that 15 % of rape victims were under 12 (the minimum age of interviewees in the NCVS), and, without any good empirical basis, we also estimated that 10 % of robbery and aggravated assault victims

were under 12. We thought that an estimate of 10 % was better than an estimate of zero (i.e. ignoring this problem).

The number of persons convicted in state courts, and the number sentenced to custody (prison or jail) were obtained from the NJRP (Langan & Dawson, 1993, pp.2 and 5). The number of persons convicted in federal courts, and the number sentenced to custody, were obtained from the Federal Justice Statistics Programme or FJSP (Bureau of Justice Statistics, 1992, pp.9 and 15). For the first time in 1990, the NJRP included motor vehicle theft as a separate category. The total number of adult convictions for vehicle theft was 21,340 in 1990 (21,065 in state courts and 275 in federal courts). From changes in the number of adult arrests (age 18 or over) for vehicle theft, obtained from the UCR, between 1981 (76,913), 1986 (93,459) and 1990 (119,757), we estimated that there were 16,654 adult convictions for vehicle theft in 1986 and 13,705 in 1981. Generally, changes in adult arrests between 1986 and 1990, according to the UCR, were similar to changes in adult convictions according to the NJRP and the FJSP. For example, adding together burglary, robbery, aggravated assault, forcible rape and homicide, the total number of adult arrests increased by 16.3% between 1986 and 1990 (from 757,588 to 881,288), while the total number of adult convictions increased by 12.7% (from 214,785 to 242,149).

Generally, motor vehicle theft and larceny-theft receive similar sentences as felonies in state courts. Hence, from the larceny-theft figures in the NJRP, it can be estimated that 40 % of vehicle theft convictions were followed by prison, and 25 % by jail. In agreement with this, the number of new court commitments to state prison in 1990 for vehicle theft (2.6% of 323,069, or about 8,400: see Perkins, 1993, p.12, and Jankowski, 1992, p.87) was very similar to the expected number

of 40 % of 21,065 (8,426). Also, according to the NCRP (Perkins, 1993, p.30), vehicle theft offenders first released from state prison in 1990 had a mean sentence length of 51 months and a mean time served of 13 months, while larceny-theft offenders had comparable figures of 48 and 14 months. The probability of custody following an adult conviction for vehicle theft in 1981 and 1986 was estimated from the number of court commitments to state prison in these years. For example, in 1986, 2.4% of 203,315 admissions were for vehicle theft, or about 4,880 (see Perkins, 1992, p.17, and Bureau of Justice Statistics, 1989, p.53).

There is a problem in estimating the comparable number of juveniles convicted, since in America juveniles are not technically found guilty in juvenile courts, although they can receive dispositions such as probation or an institutional placement after admitting or being found to have committed an offence. In trying to estimate the number of offences that led to a juvenile conviction, Farrington and Langan (1992) included cases formally petitioned to appear in the juvenile court that received a disposition (other than waiver to the adult court, since waived cases are counted in the NJRP). However, for the present paper, we thought it best to exclude cases where the disposition was a dismissal; some of these cases were simply receiving no punishment, but others were found not guilty.

Not all juvenile court "conviction" cases that we have included were officially adjudicated delinquent. Generally, juvenile court judges try to avoid an adjudication unless the juvenile will not cooperate (e.g. by agreeing to be put on probation). Many non-adjudicated juvenile cases are formally processed in the juvenile court for offending, are found to have committed an offence, and receive a disposition other than a dismissal. Since they are comparable with adult cases that are convicted, it seemed reasonable to include

them in the number of convictions. The number of petitioned juvenile court cases receiving a disposition other than waiver or dismissal was obtained from Juvenile Court Statistics 1990 (Snyder et al., 1993, pp.5, 78-82 and 84; these statistics do not include offence-specific adjudication figures). Our earlier 1981 and 1986 estimates were recalculated to exclude juvenile court dismissals. As before, our estimates of the probability of receiving a custodial sentence are based only on adults.

The average sentence length and average time served for state prisoners first released in 1990 was obtained from the NCRP (Perkins, 1993, p.30). The average jail sentence length was obtained from the NJRP (Langan & Dawson, 1993, p.3). We could have obtained the average prison sentence length received from the NJRP, but we used the NCRP figures for released prisoners to be comparable with the average time served and with the English figures. The final average sentence length and average time served were weighted combinations of the prison and jail figures, assuming that jail inmates served half their sentences on average (as Petersilia, Turner & Peterson, 1986, p.13, found in California). For example, for burglary in 1990, 54 % of convicted offenders were sent to prison, and 21 % to jail according to the NJRP. The average prison sentence was 73 months according to the NCRP, while the average jail sentence was 9 months according to the NJRP. The final average sentence length was therefore 55.1 months (54 x 73 + 21 x 9, divided by 75).

For homicide (murder and non-negligent manslaughter) in 1990, an estimated 2,353 offenders received life sentences and 166 were sentenced to death (Langan & Dawson, 1993, p.4). As before, we treated death sentences as equivalent to life sentences, because most persons sentenced to death ultimately served life imprisonment, and we treated a life

sentence as equivalent to a 25-year (300-month) sentence. In 1990, homicide offenders sentenced to life and released from state prisons had served an average of 151.9 months in prison. An estimated 7,395 homicide offenders received prison sentences other than life in 1990, and 436 received jail sentences. The estimated average sentence length and average time served were weighted averages of these figures. For example, the average time served was 2,519 x 151.9 months (life and death cases) + 7,395 x 82 months (non-life prisoners) + 436 x 18.5 months (jail cases), all divided by 10,350, which came to 96.3 months.

THE ENGLISH FOLLOW-UP

In England, the number of victim-survey offences, comparable population figures, and probability of reporting to the police were obtained from the 1991 BCS (Mayhew et al., 1993, pp.111 and 115). In 1991, 10,059 interviews were completed at 13,117 target addresses (76.7 %). One difference between the BCS and the NCVS is that commercial robberies are included in the BCS. In some cases, the number of victim-survey offences for 1981 and 1987 had been revised, because of changed population estimates; the most up-to-date figures are used in the present paper. Other population estimates came from the Office of Population Censuses and Surveys (1993). The number of currently licensed motor vehicles (24,511,000 in 1991) was obtained from the Central Statistical Office (1993, Table 10.5). The number of comparable recorded offences was also obtained from the BCS (p.114), and the basis for these estimates was summarized in the BCS (pp.163-167). The average number of offenders per offence, for victim-survey offences, was supplied by Mayhew (1993). For homicide, the average number of offenders per offence was obtained from the official Criminal Statistics (Home Office, 1993a, p.71). For

rape, the only national data on the number of offenders per offence seems to be that published by Grace, Lloyd and Smith (1992) for offences committed in the second quarter of 1985. They reported that, for police-recorded offences, there were 1.1 offenders per offence of rape. We used this figure for 1981, 1987 and 1991 estimates.

The number of police-recorded offences and the number cleared up were obtained from the official Criminal Statistics (Home Office, 1993a, pp.46-50). The number of persons convicted, the number of adults (aged 17 or over) convicted, and the number of adults sentenced to custody for each offence were obtained from the Supplementary Statistics (Home Office, 1993b, Tables S1.1 and S2.1). Secure hospital orders under the Mental Health Act 1983 were included as custodial sentences for homicide cases; in America, comparable cases might be found not guilty by reason of insanity. The only slight complication in 1991 concerned motor vehicle theft, because unauthorized taking of a motor vehicle was downgraded to a non-indictable offence in the Criminal Justice Act 1988. In order to obtain 1991 vehicle theft (including unauthorized taking) figures that were comparable with the 1981 and 1987 figures, the old indictable vehicle theft category (48) had to be added to a new non-indictable unauthorized taking category (130).

Offence-specific data on average sentence length and average time served for 1991 prison releasees were supplied by Burns (1993). The 1992 figures were requested, but the 1991 figures were the latest available in 1993. Unfortunately, the offence categories used in the Prison Statistics (see Home Office, 1993c, p.25) are slightly different from those used in the Criminal Statistics, and slightly different in 1991 compared with 1987. However, Barclay (1993) was able to show that the two categories labelled "assault" and

"wounding" in the Prison Statistics were approximately equivalent to the two "wounding" categories (5 and 8) in the Criminal Statistics. Also, 1991 Prison figures are available only for unauthorized taking of vehicles, but Burns (1993) was able to show that unauthorized taking releasees were about 20 times as common as vehicle theft releasees, and hence that the average sentence length and average time served of vehicle theft (including unauthorized taking) releasees were within 0.1 months of the average for unauthorized taking releasees alone. Therefore, the 1991 Prison figures are quite comparable with earlier years and with the figures for police-recorded offences and convictions.

As in America, it was necessary to make special provision in England for life sentences for homicide. As before, an English life sentence was regarded as equivalent to a 20-year (240-month) fixed sentence. For adults in 1991, there were 198 life sentences and 142 fixed sentences for homicide (murder and manslaughter; see Home Office, 1993b, Tables S2.7 and S2.8). Adult homicide offenders serving life sentences and first released in 1991 had served an average of 12.2 years (146.4 months), while adult homicide offenders serving fixed sentences had an average sentence length of 48.0 months and an average time served of 21.1 months (Burns, 1993). The estimated average sentence length and average time served were weighted averages of these figures. For example, the average time served was 198 x 146.4 months (life sentences) + 142 x 21.1 months (fixed sentences), divided by 340, which came to 94.1 months.

THE SWEDISH FOLLOW-UP

Most of the Swedish follow-up information was obtained from Statistics Sweden, from published data, microfiches, or specially commissioned data extraction efforts. As before, the victimization data

came from the annual Living Conditions Survey (LCS). In 1991, 5,827 of the target sample of 7,402 persons aged 16-84 were interviewed (78.7%). The estimated number of household burglaries was 114,065, with 48,461 summer cottage burglaries, totalling about 162,500 residential burglaries. The estimated number of vehicle thefts was 252,029, but these included attempts, or vandalism-only offences. The percentage of vandalism-only offences was not known for 1991, but it was 53.7% in 1992, very close to our previous estimate of 54.5% (Farrington & Wikström, 1993, p.162). Reducing the total number of 252,029 vehicle thefts by 53.7% yielded an estimate of about 116,600 completed vehicle thefts in 1991.

According to the LCS, the estimated number of violent offences causing at least visible marks was 225,455 in 1991. These included robberies and assaults. In order to estimate the number of robberies, it was assumed (as previously) that the relative numbers of robberies and assaults in the victimization data was the same as in the police-recorded data. Excluding no crimes, there were 6,055 robberies and 36,163 serious and petty assaults recorded by the police in 1991. Since 14.3% of police-recorded violent offences were robberies, it was estimated that there were about 32,300 robberies and 193,100 assaults in 1991 according to victims. This robbery estimate is the least satisfactory of all our victimization estimates, because it is so dependent on police-recorded data. The assault estimate is quite satisfactory, because the vast majority of victim-survey violent offences were assaults. Hence, trends in our victim-survey assault data are likely to reflect real trends in assaults committed, but trends in our victim-survey robbery data may not reflect real trends in robbery offences committed so much as trends in police recording of robbery.

The number of Swedish households is only published every five years. It was

known to be 3,830,037 in 1990, and estimated (by linear extrapolation) to be 3,868,132 in 1991. The Swedish population in 1991 was 8,644,119, and the population aged 16-84 was 6,810,145. The probability of offences being reported to the police by victims was not known in 1991, but it was known in 1992. It was .695 for household and summer cottage burglaries combined, .951 for vehicle theft (excluding vandalism-only offences) and .254 for violence (assault and robbery). These figures were used in our 1991 estimates.

The number of police-recorded offences and the number cleared up were obtained from Statistics Sweden. Since published figures include offences subsequently classified as "no crimes", the numbers of no crimes were obtained specially and subtracted from the figures supplied. The average number of offenders per offence was calculated from police-recorded data on the number of suspects per offence. The number of police-recorded burglaries that were comparable to the survey figures (21,846 household and 12,126 summer cottage burglaries in 1991) was only a minority of all police-recorded burglaries (155,096).

In estimating the number of comparable vehicle thefts, the police-recorded figure of 69,347 in 1991 was reduced by 35 % to take account of attempted thefts and thefts of commercial vehicles. In order to obtain a total number of police-recorded vehicle thefts in Sweden that was comparable to the American and English figures, thefts of motorcycles and mopeds (9,882 in 1991) were added to the vehicle theft figures. The number of vehicles (including motorcycles) registered, and the number of mopeds insured (since they do not have to be registered in Sweden), were obtained from Statistics Sweden (1991a, 1991b). These totalled 4,184,500 in 1991.

In order to obtain figures comparable to the victimization data, the police-recorded robbery figure of 6,055 in 1991

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was reduced by 12 % to take account of victims under 16 or over 84, while the police-recorded assault figure of 36,163 was reduced by 15 % for the same reason. We used the BCS estimates of these percentages (Mayhew et al., 1993, pp. 166-167) because we did not have Swedish estimates. The published figures for homicide include attempts, so we obtained the number of completed homicides specially from Statistics Sweden. Previously, because of small numbers, we averaged homicide figures (e.g. averaging over 1980-82 to obtain 1981 estimates). However, we were not able to average over 1990-92 because the 1992 homicide data were unreliable at the time of our calculations (in 1993). Hence, our homicide figures are for 1991, and are based on small numbers.

The number of persons convicted, and the number sentenced to custody, were obtained from Statistics Sweden. For homicide, sentences to secure hospitals were included as custodial sentences. Over time, sentences to secure hospitals

for homicide have decreased, while prison sentences for homicide have increased (Belfrage, 1993, p.34). The number of convictions for burglary is not available in Sweden; only the number of convictions for grand theft. It is likely that most offences of grand theft are residential burglaries.

The average sentence length was obtained from Statistics Sweden, while the average time served was estimated as before from the distribution of sentence lengths and the proportion of each sentence length usually served (see Farrington & Wikström, 1993, p.169) Hence, the Swedish estimates were based on prison admissions in 1991, whereas the American and English estimates were based on prison releasees in 1991. Admission and release estimates are similar when the time served is relatively short (e.g. up to one year). As before, in calculating time served by homicide offenders, it was assumed that a life sentence in Sweden was equivalent to a fixed 15-year (180-month) sentence.

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TABLE 1. *Burglary*

	America		England		Sweden	
	1981	1990	1981	1991	1981	1991
No. Survey offences (000s)	7,394	5,148	750	1,365	105.1	162.5
Per 1,000 households	87.9	53.7	40.9	67.8	30.0	42.0
Av. offenders/offence	1.3	1.3	1.7	1.8	1.6	1.6
P (reported/offence)	.51	.51	.66	.73	.65	.70
P (recorded/reported)	.66	.77	.70	.63	.44	.30
P (recorded/offence)	.34	.39	.47	.46	.29	.21
Total offences recorded (000s)	3,740	3,074	718	1,219	135.8	155.1
Per 1,000 population	16.3	12.3	14.5	23.9	16.3	17.9
P (cleared/recorded)	.14	.14	.31	.23	.15	.08
P (cleared/offence)	.048	.055	.142	.107	.042	.017
No. persons convicted	214,281	187,619	73,469	46,089	2,143	1,691
Per 1,000 population	1.09	.88	1.69	1.04	.32	.24
P (convicted/cleared)	.40	.44	.33	.16	.53	.68
P (convicted/offender)	.0148	.0185	.0280	.0096	.0131	.0065
Ratio (offender:conviction)	67.5	53.9	35.7	104.0	76.5	153.8
No. adults to custody	61,948	82,396	17,792	12,194	927	841
Per 1,000 population	.373	.445	.470	.304	.146	.125
P (custody/conviction)	.58	.75	.37	.30	.53	.57
P (custody/offender)	.0087	.0139	.0103	.0029	.0069	.0037
Ratio (offender:custody)	115.4	71.9	96.7	342.6	145.7	269.7
Av. sentence length (m)	35.1	55.1	10.9	17.2	9.3	9.9
Av. time served (m)	13.4	17.1	6.3	7.9	5.5	4.7
% of sentence served	38	31	58	46	59	47
Av. days served/conviction	237.7	390.1	70.6	73.0	87.9	81.5
Av. days served/offender	3.52	7.23	1.98	0.70	1.15	0.53

Notes: m = months. No. persons convicted per 1,000 population aged 10+ (America, England), 15+ (Sweden). Adults are 18+ (America, Sweden), 17+ (England). Conviction figures in Sweden are for grand theft (see text).

BURGLARY

Table 1 shows all the crime and punishment estimates for burglary in 1981 and 1991 (1990 for America). The calculations will be explained for England in 1991. They are similar for other offences and other countries, unless otherwise stated. The calculations are based on more exact figures than those shown in the Tables. Many figures are estimates; we discussed confidence intervals in our previous papers but, in the interests of minimizing complexity, we will not generally discuss confidence intervals here.

In England in 1991, there were an estimated 1,365,000 burglaries according to the BCS (with a 95 % confidence interval of ±182,000). Since the number of households was 20,131,000, there were 67.8 burglaries per 1000 households (or about one per 14.7 households). The number of comparable (i.e. residential) police-recorded burglaries was 624,946,

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which meant that the probability of a burglary offence being recorded was .458. Since the probability of an offence being reported to the police by victims was .730, the probability of a reported offence being recorded by the police was estimated to be .627 (.458 divided by .730).

The total number of burglaries of all kinds recorded by the English police in 1991 was 1,219,464. Since the population was 51,099,500, there were 23.9 burglaries per 1000 persons. Of the recorded burglaries, 285,823 (.234) were considered to be cleared. Multiplying the previous estimate of an offence being recorded (.458) by the probability of a recorded offence being cleared (.234) leads to the estimate that the probability of an offence being cleared was .107.

The total number of persons of all ages convicted of burglary in 1991 was 46,089. Since there were 44,446,400 persons aged 10 or over (the minimum age for conviction in England) in 1991, there were 1.04 burglary convictions per 1000 persons at risk. Also, the probability of a cleared offence being followed by a conviction was .16 (46,089 divided by 285,823). The gap between clearances and convictions is very large in England. In 1991, 47 % of cleared offences led to a charge or summons (sometimes being followed by a finding of not guilty), 11 % were cautioned, 18 % were taken into consideration, 17 % arose from admissions by prisoners, and the remainder were cleared up by other methods (Home Office, 1993a, p.43). In some cases, of course, several offences could be dealt with or cleared on one occasion of conviction. However, from the point of view of the offender, what matters is the number of occasions of conviction (since each produces a legal punishment), not the number of offences dealt with or cleared on each occasion.

The average number of offenders per offence provides the link between offences and offenders. Since there were

1,365, 000 residential burglaries and 1.8 offenders per offence, there were 2,457,000 offenders at risk of conviction for residential burglary. Since residential burglaries comprised only 51.2 % of all burglaries (624,946 out of 1,219,464), there were an estimated 4,794,371 offenders (not necessarily different offenders) at risk of conviction for all types of burglary. Dividing 4,794,371 by the number of burglary convictions (46,089) yields the estimate that there were 104 burglary offenders per conviction, or that the average burglar could commit 104 burglaries before being convicted once. The corresponding probability of conviction for each burglary offender was .0096 (1/104).

In England in 1991, there were 40,156 adults (aged 17 or over) convicted of burglary, of whom 12,194 (.304) received a custodial sentence. Since the population aged 17 or over was 40,177,000, the rate of custodial sentences per 1000 adults was coincidentally also .304. The probability of an offender receiving a custodial sentence was obtained by multiplying the probability of conviction given an offender (.0096) by the probability of custody given a conviction (.304), and this came to .0029, or one custodial sentence per 342.6 burglary offenders. Multiplying probabilities, of course, neglects differences between juveniles and adults in the probability of conviction. Hence, the sentencing estimates are less accurate than the conviction estimates.

For English prisoners released in 1991, the average sentence length for burglary was 17.2 months, and the average time served was 7.9 months, which meant that burglars served an average of 46 % of their sentences. The average days served per conviction was obtained by transforming 7.9 months to 240.3 days (by multiplying by 365/12) and multiplying by the probability of custody given conviction (.304), which came to 73.0 days. The average days served per offender was

obtained by multiplying 73.0 days by the probability of conviction given an offender (.0096), which came to 0.7 days served per burglary offender on average.

Table 1 shows that the survey burglary rate decreased in America from 88 to 54 per 1000 households, while it increased in England (from 41 to 68) and Sweden (from 30 to 42). The probability of reporting a burglary to the police increased a little in England and Sweden, and was lowest in America. The probability of the police recording a burglary that was reported to them was lowest in Sweden and decreased (from .44 to .30) between 1981 and 1991.

The police-recorded burglary rate also decreased in America and increased markedly in England. It increased only slightly in Sweden, because of the decrease in the probability of an offence being recorded by the police. The police-recorded burglary rate was nearly twice as high in England as in America in 1990-91. The probability of a burglary being cleared was highest in England and lowest in Sweden. It decreased markedly in both England and Sweden.

The burglary conviction rate was similar in England and America in 1990-91, at about one conviction per 1000 persons at risk. The Swedish burglary conviction rate is not comparable, because it refers to grand theft. Since grand theft is similar to residential burglary, subsequent Swedish calculations are based on residential burglary (e.g. clearances for residential burglary). The probability of a burglar being convicted increased in America but decreased in England and Sweden. In 1990-91, whereas one in 54 burglary offenders in America was convicted, the corresponding figure was one in 104 in England and one in 154 (residential burglars) in Sweden.

The population rate of custodial sentences for burglary increased in America and decreased in England and Sweden. The probability of receiving a custodial sentence after conviction for burglary was highest in America in 1990 (.75), compared with .57 in Sweden (for grand theft) and .30 in England. The probability of a burglary offender receiving a custodial sentence increased in America and decreased in England and Sweden. In 1990-91, whereas one in 72 American burglary offenders received a custodial sentence, the corresponding figure was one in 343 in England and one in 270 in Sweden.

The average sentence length and time served for burglary were higher in America than in England or Sweden. The average days served per offender increased markedly in America (to 7.2) and decreased markedly in England (to 0.7) and Sweden (to 0.5).

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TABLE 2. *Vehicle theft*

	America		England		Sweden	
	1981	1990	1981	1991	1981	1991
No. survey offences (000s)	891	1,227	286	517	51.0	116.6
Per 1,000 households	10.6	12.8	15.6	25.7	14.6	30.1
Av. offenders/offence	1.3	1.6	2.0	2.1	1.6	1.6
P (reported/offence)	.87	.95	.95	.99	.80	.95
P (recorded/reported)	.71	.73	1.05	.94	.51	.41
P (recorded/offence)	.62	.69	1.00	.93	.41	.39
Total offences recorded (000s)	1,074	1,636	333	582	43.4	79.2
Per 1,000 population	4.7	6.6	6.7	11.4	5.2	9.2
Per 1,000 vehicles	6.8	8.7	17.2	23.7	12.9	18.9
P (cleared/recorded)	.14	.15	.28	.24	.23	.11
P (cleared/offence)	.088	.101	.284	.227	.093	.043
No. persons convicted	34,824	56,326	35,988	22,837	3,412	2,916
Per 1,000 population	.177	.265	.829	.514	.506	.413
P (convicted/cleared)	.23	.24	.38	.16	.34	.33
P (convicted/offender)	.015	.015	.054	.017	.020	.009
Ratio (offender:conviction)	64.7	67.8	18.5	57.5	49.0	112.4
No. adults to custody	3,968	13,892	7,324	2,924	452	580
Per 1,000 population	.024	.075	.193	.073	.071	.086
P (custody/conviction)	.29	.65	.28	.16	.23	.30
P (custody/offender)	.0045	.0096	.0152	.0028	.0047	.0026
Ratio (offender:custody)	223.6	104.1	65.9	361.0	214.4	380.7
Av. sentence length (m)	37.3	34.1	8.0	6.6	3.9	3.9
Av. time served (m)	11.7	9.4	4.8	2.8	2.5	2.3
% of sentence served	31	27	60	42	64	59
Av. days served/conviction	102.7	185.1	40.9	13.6	17.4	20.7
Av. days served/offender	1.59	2.73	2.21	0.24	0.35	0.18

Notes: m = months. No. persons convicted per 1,000 population aged 10+ (America, England), 15+ (Sweden). Adults are 18+ (America, Sweden), 17+ (England).

VEHICLE THEFT

Table 2 shows that the rate of vehicle theft per 1000 households in 1990-91 was much higher in England (25.7) and Sweden (30.1) than in America (12.8). The probability of reporting was high in all three countries. The probability of a vehicle theft being recorded was highest in England and lowest in Sweden. The estimated probability of a survey offence being recorded in England in 1981 (1.0) is undoubtedly too high. Presumably, the 1981 survey estimate of 286,000 offences was lower than the true figure. (Its confidence limits were ±62,000.)

The police-recorded rate of vehicle theft per 1000 population and per 1000 vehicles was highest in England and lowest in America. In 1990-91, whereas one in 42 vehicles was recorded as stolen in England, the corresponding rate in Swe-

den was one in 53 and in America was one in 115. Of course, this may partly reflect the much higher rate of vehicle ownership in America. In 1990, there were 189 million registered motor vehicles and 96 million households in America, for an average of nearly two vehicles per household. In England and Sweden in 1991, there was just over one vehicle per household on average. As with burglary, the probability of a vehicle theft being considered to be cleared was highest in England and lowest in Sweden in 1990-91.

The population conviction rate for vehicle theft increased in America and decreased in England and Sweden. Nevertheless, in 1990-91, it was higher in England and Sweden than in America. The probability of an offender being convicted decreased in England and Sweden, but it was still highest in England in 1990-91. Whereas one in 57 vehicle thieves was convicted in England, one in 68 was convicted in America and one in 112 in Sweden.

The rate of custodial sentences for vehicle theft was similar in all three countries in 1990-91. However, the probability of custody following a conviction increased dramatically in America (from .29 to .65) and decreased in England. The probability of an offender receiving a custodial sentence also increased in America and decreased in England (and Sweden).

As before, the average sentence length and time served were highest in America and lowest in Sweden. In 1990-91, the average days served per offender were much greater in America (2.7) than in England (0.24) or Sweden (0.18). The dramatic decrease in the average days served per vehicle theft offender in England (from 2.21 to 0.24) was partly caused by repeated exhortations to sentencers from the Home Office (e.g. 1988, 1990a) to reserve the use of custody for violent offences and not to use it for property offences.

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TABLE 3. *Robbery*

	America		England		Sweden	
	1981	1990	1981	1991	1981	1991
No. survey offences (000s)	1,381	1,150	163	183	23.5	32.3
Per 1,000 population	7.41	5.66	4.21	4.50	3.61	4.74
Av. offenders/offence	1.9	1.7	2.4	2.3	1.7	1.6
P (reported/offence)	.56	.50	.47	.47	.27	.25
P (recorded/reported)	.55	.83	.24	.47	.43	.65
P (recorded/offence)	.31	.42	.11	.22	.12	.17
Total offences recorded (000s)	574	639	20.3	45.3	3.1	6.1
Per 1,000 population	2.50	2.56	.409	.887	.376	.700
P (cleared/recorded)	.24	.25	.25	.23	.27	.18
P (cleared/offence)	.074	.104	.028	.052	.032	.030
No. persons convicted	58,779	64,100	4,132	4,841	529	627
Per 1,000 population	.299	.302	.095	.109	.079	.089
P (convicted/cleared)	.43	.40	.83	.46	.62	.58
P (convicted/offender)	.017	.024	.0096	.0104	.0119	.0107
Ratio (offender:conviction)	58.9	40.9	104.6	96.4	84.3	93.6
No. adults to custody	29,943	44,014	2,680	3,182	316	384
Per 1,000 population	.180	.238	.071	.079	.050	.057
P (custody/conviction)	.70	.90	.85	.82	.77	.78
P (custody/offender)	.012	.022	.0081	.0085	.0091	.0083
Ratio (offender:custody)	83.6	45.3	123.4	117.8	109.3	120.0
Av. sentence length (m)	68.5	81.8	26.7	40.9	19.2	21.4
Av. time served (m)	27.7	33.6	13.1	20.4	11.4	12.0
% of sentence served	40	41	49	50	59	56
Av. days served/conviction	592.6	921.5	337.7	507.8	267.2	284.9
Av. days served/offender	10.1	22.5	3.23	5.27	3.17	3.04

Notes: m = months. No. survey offences per 1,000 population aged 12+ (America), 16+(England, Sweden). No. persons convicted per 1,000 population aged 10+ (America, England), 15+ (Sweden). Adults are 18+ (America, Sweden), 17+ (England).

ROBBERY

Table 3 shows that, in 1990-91, the survey robbery rate was quite similar in all three countries. However, it had decreased considerably in America and increased considerably in Sweden. The probability of an offence being recorded was much greater in America. At least partly because of this, the police-recorded robbery rate was much higher in America in 1990-91 (2.56 per 1000 population) than in England (0.89) or Sweden (0.70). However, both England and Sweden had dramatic increases in this rate. The probability of a robbery being cleared was also highest in America.

The population conviction rate for robbery in 1990-91 was much higher in America (0.30 per 1000 population) than

in England (0.11) or Sweden (0.09). Similarly, the probability of an offender being convicted was much higher in America. In 1990-91, whereas one in 41 American robbery offenders was convicted, this was true of only one in 96 English robbers and one in 94 Swedish robbers.

The population rate of custodial sentences for robbery was also much higher in America. While the probability of cus-

tody following a conviction for robbery was high in all three countries, it had increased considerably in America, and was highest there in 1990-91. As before, the average sentence length and time served for robbery were highest in America and lowest in Sweden. This was also true of the average days served per offender, which increased in America and England but decreased in Sweden.

TABLE 4. *Assault*

	America		England		Sweden	
	1981	1990	1981	1991	1981	1991
No. survey offences (000s)	591	627	507	626	167	193
Per 1,000 population	3.17	3.08	13.1	15.4	25.6	28.4
Av. offenders/offence	1.5	1.6	2.0	2.0	1.1	1.1
P (reported/offence)	.62	.71	40	.48	.27	.25
P (recorded/reported)	.52	.83	.41	.53	.42	.63
P (recorded/offence)	.32	.59	.17	.25	.11	.16
Total offences recorded (000s)	644	1,055	98	184	22.1	36.2
Per 1,000 population	2.81	4.23	1.97	3.59	2.66	4.18
P (cleared/recorded)	.58	.57	.75	.77	.56	.49
P (cleared/offence)	.19	.29	.12	.19	.06	.08
No. persons convicted	46,217	82,563	48,650	45,513	4,988	7,299
Per 1,000 population	.235	.389	1.12	1.02	.74	1.03
P (convicted/cleared)	.12	.14	.66	.32	.40	.41
P (convicted/offender)	.016	.030	.041	.031	.022	.029
Ratio (offender:conviction)	63.5	33.6	24.2	32.2	44.8	33.9
No. adults to custody	17,319	39,062	5,938	6,765	1,428	2,069
Per 1,000 population	.104	.211	.157	.168	.224	.307
P (custody/conviction)	.56	.72	.14	.16	.31	.32
P (custody/offender)	.0089	.0214	.0059	.0050	.0070	.0095
Ratio (offender:custody)	112.9	46.7	169.5	201.6	142.8	105.3
Av. sentence length (m)	38.8	41.5	10.8	17.8	4.9	5.3
Av. time served (m)	16.4	16.1	6.0	8.2	3.3	3.1
% of sentence served	42	39	56	46	67	58
Av. days served/conviction	280.5	351.3	26.1	39.8	31.5	30.4
Av. days served/offender	4.42	10.46	1.08	1.24	.70	.90

Notes: m = months. No. survey offences per 1,000 population aged 12+ (America), 16+ (England, Sweden). No. persons convicted per 1,000 population aged 10+ (America, England), 15+ (Sweden). Adults are 18+ (America, Sweden), 17+ (England).

ASSAULT

As explained earlier, the assault figures in the three countries are not directly comparable. Consequently, we will focus more on changes over time, which are comparable. Table 4 shows that the survey assault rate was surprisingly constant in all three countries. However, the probability of an assault being recorded increased in all three countries, and so consequently did the police-recorded assault rate (by 51 % in America, 82 % in England and 57 % in Sweden).

There are two major reasons for the discrepancy between survey and police-recorded assault rates. One is that the police are increasingly recording more minor, and especially domestic, assaults (Davidoff & Dowds, 1989). Successive Home Office circulars encouraged this (e.g. Home Office, 1990b). Between 1981 and 1991, the categories of violence that increased in the BCS were domestic, home-based and work-based, whereas violence in streets, pubs and clubs decreased (Mayhew et al., 1993, p.97). Family violence is likely to be under-reported in victim surveys. Wikström (1989, p.40) found that 53 % of the increase in police-recorded serious and petty assaults between 1980 and 1987 in Stockholm was accounted for by cases essentially involving no injuries; these increased from 9 % of all cases in 1980 to 20 % of all cases in 1987. The second is that socially-marginal people (such as criminals, drug addicts, alcoholics and the homeless) are disproportionally missing from victim surveys (Wikström, 1991, McClintock & Wikström, 1992). Such people are particularly likely to be victims of violence. It is possible that a real increase in violence in all countries might have disproportionally affected socially marginal people rather than more conventional ones, and hence might not have been detected in victim surveys. In this paper, we assume that victimization data provide our best measure of crimes actually committed.

The population conviction rate for assault, and the probability of an offender being convicted, increased dramatically in America, increased considerably in Sweden and decreased in England. Similarly, the population custody rate for assault doubled in America, increased by more than one-third in Sweden, and increased only slightly in England. As before, the average sentence length and time served were highest in America and lowest in Sweden, but is hard to know how far this is affected by different definitions of assault. The average days served per offender increased dramatically in America, considerably in Sweden, and slightly in England.

TABLE 5. *Rape*

	America		England		Sweden	
	1981	1990	1981	1991	1981	1991
No. survey offences (000s)	178	130	–	–	–	–
Per 1,000 females	1.84	1.24	–	–	–	–
Av. offenders/offence	1.2	1.2	1.1	1.1	1.1	1.1
P (reported/offence)	.56	.54	–	–	–	–
P (recorded/reported)	.70	1.24	–	–	–	–
P (recorded/offence)	.39	.67	–	–	–	–
Total offences recorded	81,536	102,555	1,068	4,045	819	1,343
Per 1,000 females	.691	.802	.042	.155	.195	.307
P (cleared/recorded)	.48	.53	.68	.76	.42	.37
P (cleared/offence)	.19	.35	–	–	–	–
No. persons convicted	18,914	20,373	320	540	86	148
Per 1,000 males	.200	.198	.017	.027	.026	.043
P (convicted/cleared)	.48	.38	.44	.18	.25	.30
P (convicted/offender)	.074	.108	.27	.12	.095	.102
Ratio (offender:conviction)	13.5	9.3	3.7	8.2	10.6	9.8
No. adults to custody	11,189	15,621	269	499	69	131
Per 1,000 males	.141	.176	.015	.026	.022	.040
P (custody/conviction)	.66	.86	.92	.95	.88	.93
P (custody/offender)	.049	.093	.25	.12	.084	.095
Ratio (offender:custody)	20.6	10.8	4.0	8.6	11.9	10.5
Av. sentence length (m)	85.8	98.3	40.1	58.0	22.8	29.6
Av. time served (m)	34.9	43.3	20.3	29.5	14.5	16.8
% of sentence served	41	44	51	51	64	57
Av. days served/conviction	698.1	1131.6	566.9	856.1	390.1	474.8
Av. days served/offender	51.7	122.3	154.4	103.9	36.9	48.4

Notes: m = months. No. survey offences per 1,000 females aged 12+ (America). No. persons convicted per 1,000 males aged 10+ (America), 14+ (England), 15+ (Sweden). Adults are 18+ (America, Sweden), 17+ (England). Offenders in England and Sweden are recorded offenders.

RAPE

Reliable victim-survey figures for rape are only available for America. Table 5 shows that the survey offence rate decreased by about one-third between 1981 and 1990. However, the police-recorded offence rates increased in all three countries, again possibly because of an increased probability of recording by the police (Home Office Statistical Bulletin, 1989; Lloyd & Walmsley, 1989). In England, successive Home Office circulars (e.g. 1989) encouraged the police to take rape allegations seriously and record them.

Table 5 shows that, in America in 1990, the number of comparable police-recorded rapes (85 % of 102,555, or 87,172) exceeded the number that victims said they reported to the police (53.9% of 130,300, or 70,232) by 24 %. However, it must be borne in mind that the NCVS rape estimate has a relatively large confidence interval, which may also explain this disparity. The police-recorded rape rate was highest in America and lowest in England, as was the population conviction rate.

The number of recorded offences of rape was used in estimating the probability of an offender being convicted in England and Sweden, whereas the number of survey offences of rape was used in America. Despite this difference,

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the estimated probability of an offender being convicted was similar in all three countries in 1990-91: one in 8.2 rapists in England, one in 9.3 in America, and one in 9.8 in Sweden. The population rate of rapists in custody, like the conviction rate, was highest in America and lowest in England. The probability of custody following a conviction for rape was high in all three countries in 1990-91, but it had increased considerably in America. As usual, the average sentence length and average time served were highest in America and lowest in Sweden. The same was true of the average days served per offender, which was over-estimated in England and Sweden because of the use of recorded offenders.

HOMICIDE

Necessarily, there are no victim survey estimates for homicide. Table 6 shows

that the recorded homicide rate was much higher in America than in England or Sweden and was tolerably constant over this time period. The same was true of the population conviction rate. There was one conviction per 1.9 recorded homicide offenders in England in 1991, compared with one per 2.3 in America and one per 3.5 in Sweden.

The population rate of homicide offenders sentenced to custody was also highest in America, although the probability of custody following a conviction for homicide was very high in all three countries. The average time served for homicide was similar in America and England and lowest in Sweden. It increased considerably over time in all three countries. The average time served per recorded homicide offender was highest in England (1,365 days, or 3.7 years), followed by America (3.3 years) and lowest in Sweden (1.4 years).

TABLE 6. *Homicide*

	America		England		Sweden	
	1981	1990	1981	1991	1981	1991
Total offences recorded	22,516	23,438	559	725	123	131
Per 1,000 population	.098	.094	.011	.014	.015	.015
Av. offenders/offence	1.2	1.2	1.1	1.1	1.4	1.4
P (cleared/recorded)	.72	.67	.97	.94	.72	.63
No. persons convicted	12,204	12,324	388	427	60	52
Per 1,000 population	.062	.058	.0089	.0096	.0089	.0074
P (convicted/cleared)	.76	.78	.72	.63	.67	.63
P (convicted/offender)	.47	.44	.64	.54	.36	.28
Ratio (offender:conviction)	2.1	2.3	1.6	1.9	2.8	3.5
No. adults to custody	9,818	10,474	316	367	58	49
Per 1,000 population	.059	.057	.0083	.0091	.0091	.0073
P (custody/conviction)	.88	.95	.85	.89	.98	.94
P (custody/offender)	.41	.42	.54	.48	.35	.27
Ratio (offender:custody)	2.4	2.4	1.8	2.1	2.9	3.7
Av. sentence length (m)	169.7	220.3	134.2	159.8	126.0	110.0
Av. time served (m)	64.6	96.3	68.9	94.1	50.4	64.0
% of sentence served	38	44	51	59	40	58
Av. days served/conviction	1730	2783	1785	2460	1507	1834
Av. days served/offender	808	1220	1137	1365	536	520

Notes: m = months. No. persons convicted per 1,000 population aged 10+ (America, England), 15+ (Sweden). Adults are 18+ (America, Sweden), 17+ (England). Offenders are recorded offenders. The Swedish figures for 1981 are 1980-82 averages in some cases (see text).

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TABLE 7. *Differences between countries*

	America vs. England		England vs Sweden		America vs Sweden	
	1981	90-91	1981	1991	1981	90-91
Survey offence rate						
Burglary	A 2.1	E 1.3	E 1.4	E 1.6	A 2.9	A 1.3
Vehicle theft	E 1.5	E 2.0	E 1.1	S 1.2	S 1.4	S 2.4
Robbery	A 1.8	A 1.3	E 1.2	S 1.1	A 2.1	A 1.2
Recorded offence rate						
Burglary	A 1.1	E 1.9	S 1.1	E 1.3	S 1.0	S 1.5
Vehicle theft	E 1.4	E 1.7	E 1.3	E 1.2	S 1.1	S 1.4
Vehicle theft (V)	E 2.5	E 2.7	E 1.3	E 1.3	S 1.9	S 2.2
Robbery	A 6.1	A 2.9	E 1.1	E 1.3	A 6.6	A 3.7
Rape	A 16.5	A 5.2	S 4.6	S 2.0	A 3.5	A 2.6
Homicide	A 8.7	A 6.6	S 1.4	S 1.1	A 6.5	A 6.3
Conviction rate						
Burglary	E 1.6	E 1.2	–	–	–	–
Vehicle theft	E 4.7	E 1.9	E 1.6	E 1.2	S 2.9	S 1.6
Robbery	A 3.1	A 2.8	E 1.2	E 1.2	A 3.8	A 3.4
Rape	A 12.1	A 7.5	S 1.5	S 1.6	A 7.7	A 4.6
Homicide	A 7.0	A 6.0	E 1.0	E 1.3	A 7.0	A 7.9
P (convicted/offender)						
Burglary	E 1.9	A 1.9	E 2.1	E 1.5	A 1.1	A 2.8
Vehicle theft	E 3.6	E 1.1	E 2.7	E 1.9	S 1.3	A 1.7
Robbery	A 1.8	A 2.3	S 1.2	S 1.0	A 1.4	A 2.2
Homicide	E 1.4	E 1.2	E 1.8	E 1.9	A 1.3	A 1.5
P (custody/conviction)						
Burglary	A 1.6	A 2.5	S 1.4	S 1.9	A 1.1	A 1.3
Vehicle theft	A 1.0	A 4.1	E 1.2	S 1.9	A 1.3	A 2.2
Robbery	E 1.2	A 1.1	E 1.1	E 1.1	S 1.1	A 1.2
Rape	E 1.4	E 1.1	E 1.0	E 1.0	S 1.3	S 1.1
Homicide	A 1.0	A 1.1	S 1.2	S 1.1	S 1.1	A 1.0
Av. time served						
Burglary	A 2.1	A 2.2	E 1.1	E 1.7	A 2.4	A 3.6
Vehicle theft	A 2.4	A 3.3	E 1.2	E 1.2	A 4.7	A 4.1
Robbery	A 2.1	A 1.6	E 1.1	E 1.7	A 2.4	A 2.8
Rape	A 1.7	A 1.5	E 1.4	E 1.8	A 2.4	A 2.6
Homicide	E 1.1	A 1.0	E 1.4	E 1.5	A 1.3	A 1.5
Av. days served/offender						
Burglary	A 1.8	A 10.3	E 1.7	E 1.3	A 3.1	A 13.6
Vehicle theft	E 1.4	A 11.6	E 6.3	E 1.3	A 4.5	A 15.2
Robbery	A 3.1	A 4.3	E 1.0	E 1.7	A 3.2	A 7.4
Homicide	E 1.4	E 1.1	E 2.1	E 2.6	A 1.5	A 2.3

Notes: A = America higher. E = England higher. S = Sweden higher.
The Swedish burglary conviction figures are not comparable to America and England (see text).
(V) = In relation to number of vehicles rather than population.

DIFFERENCES BETWEEN COUNTRIES

Table 7 summarizes differences between countries in the major measures of crime and punishment. For example, in 1981, the survey offence rate for burglary was 2.1 times higher in America than England, whereas by 1990-91 it was 1.3 times higher in England than America. In 1981, the survey offence rate for burglary was 2.9 times higher in America than Sweden, whereas by 1990-91 it was only 1.3 times higher in America than Sweden. Because of problems of comparability, no figures are shown for assault.

Many of the results have been mentioned in discussing earlier Tables but are quantified here. We will merely draw attention to some of the most noteworthy findings. For example, the America: England ratio for police-recorded robbery narrowed from more than 6:1 to less than 3:1 during this decade, and the America: England ratio for police-recorded rape narrowed from over 16:1 to only 5:1. Similarly, the America:Sweden ratio for police-recorded robbery narrowed from nearly 7:1 to nearly 4:1, and the Sweden:England ratio for police-recorded rape narrowed from nearly 5:1 to 2:1.

The England:America ratio for the probability of a vehicle thief being convicted decreased dramatically from nearly 4:1 to near-equality, while the America: Sweden ratio for the probability of a burglar being convicted increased from near equality to nearly 3:1. Similarly, the America:England ratio for the probability of custody following conviction for vehicle theft increased from near-equality to over 4:1. Generally, these changes occurred because the risk of punishment was increasing in America and decreasing in England and Sweden.

The most dramatic relative changes were in the average days served per offender, also reflecting increasing punitiveness in America and decreasing punitiveness in England and Sweden, especially for property offences. The America: England ratio increased in this decade from near-equality to over 10:1 for burglary and vehicle theft. Similarly, the America:Sweden ratio increased from 3:1 to 14:1 for burglary and from 4:1 to 15:1 for vehicle theft. Compared with Sweden, England decreased in this decade from being 6 times more punitive for vehicle theft to near-equality. These are dramatic changes in a short time period.

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TABLE 8. *Percentage changes over time*

	America		England		Sweden	
	81-86	86-90	81-87	87-91	81-87	87-91
Survey offence rate						
Burglary	-30	-13	+50	+11	-1	+41
Vehicle theft	-7	+30	+28	+29	+22	+69
Robbery	-30	+10	+5	+2	-10	+46
Assault	-10	+8	+8	+9	+1	+9
Rape	-30	-4	–	–	–	–
Recorded offence rate						
Burglary	-17	-9	+24	+33	+3	+6
Vehicle theft	+9	+29	+16	+47	+50	+18
Vehicle theft (V)	+2	+24	+2	+35	+31	+12
Robbery	-10	+13	+59	+37	+22	+53
Assault	+24	+22	+38	+32	+38	+14
Rape	+6	+9	+129	+62	+22	+29
Homicide	-13	+9	+22	+4	+10	-7
Conviction rate						
Burglary	-19	0	-27	-16	-29	+6
Vehicle theft	+3	+45	-29	-13	-17	-2
Robbery	-7	+8	+6	+8	-22	+46
Assault	+16	+42	-7	-1	+27	+10
Rape	+11	-11	+29	+25	+34	+23
Homicide	-16	+11	+10	-2	+12	-26
P (convicted/offender)						
Burglary	+14	+10	-54	-25	-28	-31
Vehicle theft	-8	+4	-47	-39	-21	-45
Robbery	+53	-6	+4	+4	-9	-2
Assault	+41	+34	-1	-24	+37	-4
Rape	+63	-11	-43	-22	+7	+1
Homicide	-1	-6	-11	-5	+2	-22
P (custody/conviction)						
Burglary	+26	+2	+8	-23	+13	-4
Vehicle theft	+72	+31	-19	-30	+27	+2
Robbery	+24	+3	+4	-7	-1	+2
Assault	+26	+2	+39	-20	-5	+8
Rape	+34	-2	+5	-1	+3	+2
Homicide	+8	0	+4	0	0	-4
Av. time served						
Burglary	+23	+4	+5	+20	-18	+4
Vehicle theft	-8	-13	-17	-30	-16	+10
Robbery	+16	+5	+27	+23	+3	+3
Assault	0	-2	+12	+22	-15	+11
Rape	+12	+11	+34	+8	+2	+14
Homicide	+26	+18	-3	+41	+26	+1
Av. days served/offender						
Burglary	+77	+16	-48	-32	-33	-31
Vehicle theft	+45	+19	-64	-70	-16	-39
Robbery	+119	+2	+37	+19	-7	+3
Assault	+78	+33	+54	-25	+10	+16
Rape	+145	-4	-19	-17	+12	+17
Homicide	+35	+11	-11	+34	+29	-25

Notes: (V) = In relation to number of vehicles rather than population.

CHANGES OVER TIME

Table 8 summarizes percentage changes over time in the major measures of crime and punishment in both time periods studied (e.g. 1981-86 and 1986-90 for America). Of course, the change in the total time period can be obtained by multiplication. For example, for recorded burglary in England, 1.24 (1981-87 change) multiplied by 1.33 (1987-91 change) comes to 1.65, showing that the 1981-91 increase was 65 %. Conclusions about changes over time are likely to be more valid than conclusions about differences between countries or even about probabilities in one country in one year, because extraneous biassing factors are likely to remain tolerably constant over time within a country.

Generally, the decreases in survey crime rates in America in 1981-86 were not seen in 1986-90, although burglary kept on decreasing. Indeed, burglary decreased steadily from the first year of the NCVS in 1973 to only half its original level in 1992 (Zawitz et al., 1993, p.7). Vehicle theft turned around from a small (7 %) decrease to a considerable (30 %) increase, while robbery turned around from a considerable (30 %) decrease to a small (10 %) increase.

In contrast, the increases in survey crime rates in England in 1981-87 generally continued in 1987-91. However, burglary increased from 40.9 to 61.2 per 1000 households in 1981-87, but then only to 67.8 in 1991. In Sweden, the survey crime rate increases in 1987-91 were much greater than in 1981-87. Substantial increases were seen in burglary (by 41 %), vehicle theft (by 69 %) and robbery (by 46 %) in 1987-91, although this last figure is rather dubious, as explained earlier. None of the survey assault rates changed very much.

Generally, increases in recorded offence rates in America were greater in 1986-90 than in 1981-86, although in the case of burglary the decrease was less in

1986-90. The American homicide rate decreased by 13 % in 1981-86, but then increased by 9 % in 1986-90, yielding an overall 1981-90 decrease of 4 %. In contrast, in England and Sweden, all recorded offences increased in all time periods, except for homicide in Sweden in 1987-91. Increases in recorded assault rates were much greater than increases in survey assault rates in all three countries. The differences between victim-survey and police-recorded crime rates has been attributed to the increasing bureaucratization of the police (e.g. Menard, 1987).

America had big increases in the probability of an offender being convicted for robbery, assault and rape in 1981-86, but only for assault in 1986-90. It must be remembered that the 1981 American conviction and sentencing figures were less exact than in 1986 or 1990. In contrast, the substantial decreases in this probability in England in 1981-87 for burglary, vehicle theft and rape largely continued in 1987-91, as did the substantial decreases in this probability in Sweden for burglary and vehicle theft. The English decreases in the probability of conviction were caused by: (1) the increasing use of recorded cautions and unrecorded warnings for detected offenders (Home Office, 1990c; Farrington, 1992); (2) the Police and Criminal Evidence Act 1984, which increased procedural safeguards for accused persons (Farrington & Langan, 1992); and (3) the introduction of the Crown Prosecution Service in 1986, and its increasing tendency to discontinue cases rather than to prosecute (Home Office, 1993a, p.119). Also the downgrading of unauthorized taking of a motor vehicle from an indictable to a non-indictable offence in the Criminal Justice Act 1988 was symptomatic of the Home Office's view of the decreasing seriousness of this offence.

In America, the substantial increases in the probability of custody following a conviction in 1981-86 were generally not

seen in 1986-90, except for vehicle theft. This was partly because this probability was already high by 1986 and had little scope to increase further. In England, this probability decreased for most offences in 1987-91, while it did not change in Sweden. The average time served generally increased for all offences except for vehicle theft and assault. The average days served per offender increased markedly in America in 1981-86 but much less in 1986-90. In England and Sweden, this decreased steadily for burglary and vehicle theft. It increased for robbery in England, and rather strangely increased for assault in 1981-87 (from 1.08 to 1.65) but then decreased in 1987-91 (to 1.24). Of course, it must be borne in mind that the time served by 1991 releasees is not necessarily the same as the time served by offenders sentenced to custody in 1991, although the time served by releasees may be more relevant to issues of general deterrence.

TABLE 9. *Correlations with changes in the survey crime rate*

Changes in:	1981-91	1981-87	1987-91
Recorded crime rate	.65*	.66*	.27
p (cleared/offence)	-.69*	-.64*	-.80**
Conviction rate	-.37	-.41	.07
p(convicted/offender)	-.83**	-.83**	-.69*
p(custody/conviction)	-.35	-.44	.05
p(custody/offender)	-.75**	-.83**	-.46
Av. sentence length	-.33	-.06	-.23
Av. time served	-.49	-.46	-.28
Av. time served/conviction	-.55	-.57	-.16
Av. time served/offender	-.78**	-.84**	-.51

* p <.05, ** p<.01 (two-tailed).

Note: America was 1981-90, 1981-86 and 1986-90.
Based on 12 offences in 3 countries.

CRIME VERSUS PUNISHMENT

Farrington and Wikström (1993) presented correlations between changes in the survey crime rate and changes in key measures of punishment, and we extend their analysis in Table 9. Of course, the 1981-87 correlations shown in Table 9 are almost identical to those presented by Farrington and Wikström (1993, p.155). The correlations in this Table are based on 12 offences: burglary, vehicle theft and assault in all three countries, robbery in America and England, and rape in America. We did not include robbery in Sweden because of doubts about the validity of changes in the survey crime rate.

All correlations were calculated using logarithms of percentage change data, so that proportional increases and decreases

(e.g. doubling and halving) were exactly symmetrical. Farrington and Wikström (1993, p.155) showed that there was in fact little difference between correlations based on logarithms and raw change data, but we consider that the logarithmic method is more satisfactory.

In 1981-91, changes in the survey crime rate were significantly correlated (r=.65, p=.022) with changes in the recorded crime rate. However, this was only true in 1981-87 (r=.66, p=.020), not in 1987-91 (r=.27, ns). The biggest discrepancies between survey and recorded offence rate changes in 1987-91 were for robbery and assault in England (larger recorded changes) and for burglary and vehicle theft in Sweden (larger survey changes). As explained earlier, the Swedish victimization data were the least satisfactory, and it is possible that the 1987 figures were under-estimates.

In both time periods, changes in the survey crime rate were significantly negatively correlated with changes in the probability of an offence being cleared and in the probability of an offender being convicted. However, changes in the survey crime rate were significantly negatively correlated with changes in the probability of an offender being sent to custody and in the average time served per offender only in 1981-87, not in 1987-91.

In 1981-91, the strongest negative correlation (r= -.83, p=.0008) was between changes in the survey crime rate and changes in the probability of an offender being convicted. This correlation held independently of changes in the probability of an offence being cleared (partial r=-.65, p=.030), whereas the correlation between changes in the survey crime rate and changes in the probability of an offence being cleared did not hold independently of changes in the probability of an offender being convicted (partial r= -.13, ns). We therefore conclude that the most important correlate of the change in the survey crime rate in these data is

the change in the probability of an offender being convicted. However, it must be emphasized that our results are based on small numbers (12 offences in three countries).

The high negative correlation between the survey crime rate and the probability of an offender being convicted occurred because there were some large and coincidental changes in these measures within these short time periods. For example, in America in 1981-86, robbery decreased by 30 % and the probability of conviction increased by 53 %, while rape decreased by 30 % and the probability of conviction increased by 63 %. In England in 1981-91, burglary increased by 66 % and the probability of conviction decreased by 66 %, while vehicle theft increased by 65 % and the probability of conviction decreased by 68 %. In Sweden in 1987-91, burglary increased by 41 % and the probability of conviction decreased by 31 %, while vehicle theft increased by 69 % and the probability of conviction decreased by 45 %. Farrington and Wikström (1993, p.156) concluded that the major exception to this high negative relationship (in 1981-87) was Swedish burglary, but Swedish burglary showed the same relationship in 1987-91. The major exception in the second time period was American assault in 1986-90, where a small increase in the crime rate of 8 % coincided with a large increase in the probability of conviction of 34 %.

CONCLUSIONS

The major contribution of this paper is to provide national estimates for the flow of offenders through different criminal justice systems, from the commission of crimes through police recording and conviction to imprisonment. Extending our previous work, these national estimates have been provided for six offences in three countries between the 1980s and

1990s. It must be emphasized that our figures are only estimates, limited by numerous assumptions.

Our present estimates are better than our previous ones in a number of ways. The American data are more complete, including vehicle theft convictions and sentencing, and better estimates of juvenile convictions. The Swedish data include the average number of offenders per offence and all recorded offences of burglary and vehicle theft. Also, the estimated number of recorded offences comparable to survey offences is more adequate than before in America and Sweden.

During this time period, there were large decreases in burglary in America, according to both victimization and police data. Similarly, there were large increases in burglary and vehicle theft in England, and in vehicle theft in Sweden, according to both types of data. There were large increases in assault in the police data but not in the victimization data in all three countries, which may at least partly reflect increased police recording of family violence. The risk of conviction and custody generally increased in America and decreased in England and Sweden, especially for burglary and vehicle theft.

We have found a high negative correlation between changes in the crime rate (according to victimization data) and changes in the probability of an offender getting convicted. However, our correlations are based on small numbers and we cannot claim to have demonstrated a causal effect of the risk of conviction on the probability of committing crimes. There is a need to investigate the dose-response relationship between changes in the risk of punishment and changes in crime rates, using many observations, attempting to investigate which tends to come first. It might perhaps be argued that increases in the crime rate might cause decreases in the probability

of conviction, if population conviction rates stayed constant. However, Table 8 shows that population conviction rates changed markedly in many cases, and Table 9 shows that changes in survey crime rates were negatively correlated (-.37) with changes in population conviction rates in 1981-91.

National crime rates are undoubtedly influenced by many different factors, with different weightings in different times and places. Farrington and Langan (1992) discussed some of these factors, including demographic changes and changes in unemployment rates. We do not have time or space here to investigate whether the risk of conviction is important independently of any of these other factors. There is a need for extensive studies of the relationships between changes in victim-survey crime rates and changes in numerous other factors over many times and places. It is plausible to suggest that the magnitude of changes in crime rates depends partly on the strength of effects (the dose-response curve relating an influencing factor to the crime rate) and partly on the magnitude of changes in influencing factors. Different results may be obtained in different times and places because of the different magnitudes of changes in influencing factors. The influence of the probability of conviction may be apparent when it changes considerably in a short time period, but less apparent when it changes little or when other influencing factors change greatly. Conversely, an influencing factor (e.g. the demographic composition of the population) may be strongly related to the crime rate, but its influence may not be detected because it changes relatively slowly.

We believe that studies of when victim-survey crime rates correlate with the probability of conviction and imprisonment, and when they do not, can be very illuminating in advancing knowledge about what factors influence changes in national crime rates over time. However,

we do not have time or space here to review this topic or the extensive literature on deterrence (see e.g. Blumstein, Cohen & Nagin, 1978). However, at the very least, we think that the high negative correlation between changes in victim-survey crime rates and changes in the probability of an offender being convicted that we have discovered merits more extensive research designed to investigate this relationship in more countries and more time periods.

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