Changes in Crime and Punishment in England and Sweden in the 1980s

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Abstract

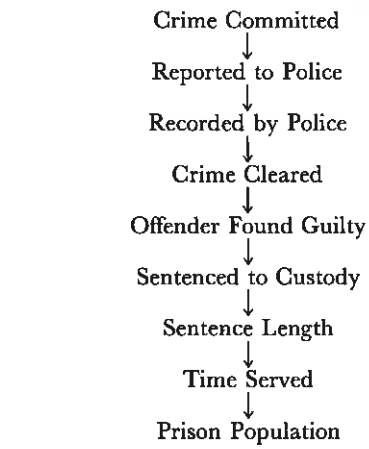
This paper aims to estimate, for England and Sweden, the flow of offenders from crimes committed to crimes reported, recorded and cleared, convictions, prison sentences and time served. The emphasis is on estimating probabilities linking each stage of the criminal justice system (e.g. the probability of an offence leading to a conviction or to a prison sentence). Estimates are provided for six offences in two years (1981 and 1987): residential burglary, vehicle theft, robbery, assault, rape and homicide. Generally, property offences increased in both countries according to victimization and police data, but violent offences increased only in police data. The probability of an offence leading to a conviction generally decreased in both countries. The probability of an offence leading to a custodial sentence and the average time served per offence decreased substantially in both countries for property offences but not for violent offences. The average time served per offence was higher in England than in Sweden. There were some indications that changes in the crime rate were negatively correlated with changes in the probability of conviction, but the major exception to this was residential burglary in Sweden. (*Studies on Crime and Crime Prevention Vol. 2 1993. National Council for Crime Prevention*).

Keywords: victimization, crime rate, conviction rate, imprisonment rate, sentence length, time served.

CRIME, CRIMINAL JUSTICE, AND CROSS-NATIONAL COMPARISONS

A criminal justice system involves a successive funnelling process, shown in a simplified form in Figure 1. Out of all crimes committed, only some are reported to the police. Out of all crimes reported, only some are recorded by the police. Out of all crimes recorded, only some are cleared by detecting an offender. Out of all detected offenders, only some are taken to court and found guilty. Out of all offenders found guilty in court, only some are sentenced to custody. These offenders receive different sentence lengths, and they only serve a proportion of their sentence in prison, thereby becoming the prison population.

FIGURE 1: *Processing of offenders in a criminal justice system*



While the system can easily be described in principle, it is quite difficult to describe in practice, specifying the exact numbers of offenders flowing through at each stage, and ultimately the exact times that offenders serve in prison. Such a specification would have great theoretical and practical relevance. For example, it could help to determine whether changes in prison populations were caused by changes in crime rates, reporting, recording, detection, findings of guilt, the probability of custody, sentences given, or time served. It is particularly difficult to estimate numbers in a national criminal justice system, because of the large numbers of crimes and offenders involved, and the diversity of the constituent areas.

Ideally, individual offenders should be tracked through the different stages of a national criminal justice system using unique identifying numbers. We have not been able to do this. We have used aggregate national data that could be obtained on each of the stages separately (e.g. crimes committed, persons convicted, persons sentenced to custody). While these separate counts do not arise from tracking the same individuals across stages, when examined in relation to each other, they permit reasonably accurate estimates of the flow of offenders from one stage to the next.

Farrington and Langan (1992) presented the first offence-specific national estimates for the flow of offenders through the complete system shown in Figure 1. They provided this information not only for England (including Wales) and the United States (hereafter termed "America") but also for two time periods (1981 and 1986–87). Hence, they were able to compare not only variations between countries but also changes over time.

Farrington and Langan (1992) chose these time periods because tracking offenders through the complete system first required sound data on crimes committed. The best available data on crimes committed comes from large-scale victim surveys. National victim surveys were carried out in England in 1982 (Hough & Mayhew, 1983), 1984 (Hough & Mayhew, 1985), and 1988 (Mayhew et al., 1989). A fourth national victim survey was carried out in 1992 (Mayhew & Maung, 1992), but the detailed results have not yet been published. Each survey enquired about victimization events in the previous year. Hence, the publication of results from the 1988 survey provided the first opportunity in England to compare changes in crime according to a victim survey with those shown in official criminal statistics over a reasonable time period (six years, between 1981 and 1987).

National figures for police-recorded crimes, convictions and sentencing have been available in England for many years. However, figures for average sentence length and average time served were first published in 1986 (Home Office, 1987: 77), and retrospective information was then given for the previous ten years.

American national data on convictions, sentence length, and time served were available only for 1986, not 1987. Hence, changes in America were studied between 1981 and 1986.

Farrington and Langan (1992) studied burglary, vehicle theft, robbery, assault, rape and homicide. They found that vehicle theft was more prevalent in England than in America. Robbery, rape and homicide were more prevalent in America, but England was catching up during this time period. England began this time period with a burglary rate only half that of America, but it had the same burglary rate by the end of the period. Essentially, burglary and vehicle theft increased markedly in England, robbery and assault did not change significantly, while burglary, robbery and rape decreased markedly in America.

The probability of an offender being found guilty in court, and of an offender being sentenced to custody, decreased markedly in England for burglary and vehicle theft, stayed constant or increased somewhat in England for robbery and assault, and increased markedly in America for bur-

glary, robbery, assault and rape. Average sentence lengths and time served were considerably higher in America than in England. Farrington and Langan (1992) suggested that changes in crime rates in England and America during this time period reflected changes in the risk of conviction and custody.

The main aim of the present paper is to provide offence-specific national estimates for the flow of offenders through the criminal justice systems of England and Sweden in 1981 and 1987. Like Farrington and Langan (1992), we focus on burglary, vehicle theft, robbery, assault, rape and homicide. The Appendix at the end of the paper gives full details about comparability, data sources, and estimation procedures. Many figures are estimates, and therefore subject to some inaccuracy; in particular, for reasons specified in the Appendix, the Swedish victimization figures are unsatisfactory and yield only rough order-of-magnitude estimates.

A major justification for cross-national comparisons is to establish how far findings can be replicated and generalized. For example, Farrington and Wikström (1993) showed that many criminal career features were similar for males in London and Stockholm. Also, McClintock and Wikström (1990), using police records, compared violent crimes in Scotland and Sweden, and McClintock and Wikström (1992) compared violent crimes in Edinburgh and Stockholm. This paper is a logical continuation of our previous research on cross-national comparisons of crimes, criminal careers and criminal justice systems.

RESIDENTIAL BURGLARY

Table 1 shows that, according to the English national victim survey (BCS), the estimated population rate of residential burglary increased markedly in England between 1981 and 1987. The number of burglaries increased significantly by 59%, from 744, 000 to 1,180, 000, or from 40.9 to 61.2 per 1000 households. However, according to the Swedish national victim survey (LCS), the Swedish burglary rate decreased slightly (and non-significantly) from 30.0 to 29.7 per 1000 households. It can be seen that the burglary rate was lower in Sweden than in England. The likelihood of victims reporting burglaries to the police was similar in both countries (at about 62–66%) and fairly constant over time. The likelihood of the police recording a burglary was higher in England, but it decreased in both countries.

The population rate of police-recorded burglaries was much higher in England than in Sweden: nearly three times greater in 1987, for example (9.61 versus 3.52 burglaries per 1000 population). The probability of a burglary being considered to be cleared was also much higher in England. The population conviction rate for burglary was about twice as high in England (e.g. .473 versus .227 burglary convictions per 1000 population in 1987). However, the probability of a cleared burglary being followed by a conviction for burglary was much less in England: .164 in 1987, for example, versus .572 in Sweden. As explained in the Appendix, the higher Swedish figure is partly because convictions are for grand theft, which is a more inclusive category than burglary. Also, all these probabilities are over-estimated because they do not take account of the fact that, because of the phenomenon of co-offending, N offences may produce as many as 2N offenders at risk of conviction.

Overall, the probability of a burglary offence (as revealed by the victim survey) being followed by a burglary conviction was quite comparable in the two countries. In England, this probability decreased by 47%, from .0335 in 1981 (1 conviction per 29.8 burglaries) to .0176 in 1987 (1 conviction per 56.9 burglaries). In Sweden, this probability decreased by 32%, from .0311 in 1981 (1 conviction per 32.1 burglaries) to .0211 in 1987 (1 conviction per 47.3 burglaries). The decrease in England largely reflected a decrease in the probability of a

TABLE 1. *Residential Burglary*

	England			Sweden		
	1981	1987	% change	1981	1987	% change
No. survey offences	744,000	1,180,000	+59	105,100	109,000	+4
95% confidence interval	128,000	154,000		13,300	14,500	
Per 1000 households	40.9	61.2	+50	30.0	29.7	−1
p (reported/offence)	.662	.632	−5	.650	.646	−1
p (recorded/reported)	.710	.648	−9	.442	.420	−5
p (recorded/offence)	.470	.409	−13	.287	.271	−6
Total offences recorded	349,692	483,001	+38	30,205	29,525	−2
Per 1000 population	7.05	9.61	+36	3.63	3.52	−3
No. cleared	96,704	126,284	+31	4,032	2,742	−32
p (cleared/recorded)	.277	.261	−6	.133	.0929	−30
p (cleared/offence)	.130	.107	−18	.0384	.0252	−34
No. persons convicted	24,928	20,756	−17	2,143	1,568	−27
Per 1000 population	.574	.473	−18	.318	.227	−29
p (convicted/cleared)	.258	.164	−36	.531	.572	+8
p (convicted/offence)	.0335	.0176	−47	.0311	.0211	−32
Ratio (convicted/offence)	1/29.8	1/56.9		1/32.1	1/47.3	
No. adults sentenced to custody	7,465	9,157	+23	927	835	−10
Per 1000 population	.197	.233	+18	.146	.127	−13
p (custody/conviction)	.448	.544	+21	.525	.592	+13
p (custody/offence)	.0150	.0096	−36	.0163	.0125	−23
Ratio (custody/offence)	1/66.6	1/104.4		1/61.2	1/80.1	
Av. sentence length (m)	10.9	15.1	+39	9.3	9.6	+3
Av. time served (m)	6.3	6.6	+5	5.5	4.5	−18
% of sentence served	58	44	−24	59	47	−20
Av. days served/conviction	85.8	109.2	+27	87.8	81.0	−8
Av. days served/offence	2.88	1.92	−33	2.73	1.71	−37

Note: m = months. No. persons found guilty per 1000 population aged 10+ (England), 15+ (Sweden). Adults are 17+ (England), 18+ (Sweden).

clearance being followed by a conviction, whereas the decrease in Sweden largely reflected a decrease in the probability of a recorded offence being cleared.

The population rate of custodial sentences imposed on adults for burglary was higher in England (e.g. .233 versus .127 sentences per 1000 of the adult population in 1987). However, the probability of being sentenced to custody after a burglary conviction was somewhat higher in Sweden. Also, the probability of a burglary offence being followed by a custodial sentence for burglary was higher in Sweden, but decreased in both countries. In 1987, this probability was .0096 in England (1 custodial sentence per 104.4 burglaries) and .0125 in Sweden (1 custodial sentence per 80.1 burglaries).

The average sentence length and time served for burglary were both higher in England. The proportion of the sentence that was actually served in custody was similar in both countries and decreased markedly in both between 1981 and 1987. The average time served in custody per convic-

TABLE 2. *Vehicle Theft*

	England			Sweden		
	1981	1987	% change	1981	1987	% change
No. survey offences	284,000	385,000	+36	51,000	65,500	+28
95% confidence interval	62,000	66,000		9,400	11,300	
Per 1000 households	15.6	20.0	+28	14.6	17.8	+22
p (reported/offence)	.949	.949	0	.80	.92	+15
p (recorded/reported)	1.055	.912	−14	.783	.955	+22
p (recorded/offence)	1.001	.865	−14	.672	.878	+40
Total offences recorded	332,590	389,576	+17	31,958	57,531	+80
Per 1000 population	6.70	7.75	+16	3.84	6.86	+79
No. cleared	94,360	98,328	+4	8,099	8,239	+17
p (cleared/recorded)	.284	.252	−11	.253	.143	−43
p (cleared/offence)	.284	.218	−23	.159	.126	−21
No. persons convicted	35,988	25,946	−28	3,412	2,903	−15
Per 1000 population	.829	.591	−29	.506	.420	−17
p (convicted/cleared)	.381	.264	−31	.421	.352	−16
p (convicted/offence)	.108	.0576	−47	.0669	.0444	−34
Ratio (convicted/offence)	1/9.23	1/17.4		1/14.9	1/22.5	
No. adults sentenced to custody	7,324	4,486	−39	452	572	−27
Per 1000 population	.193	.114	−41	.0710	.0870	+23
p (custody/conviction)	.280	.228	−19	.229	.290	+27
p (custody/offence)	.0302	.0131	−57	.0153	.0129	−16
Ratio (custody/offence)	1/33.1	1/76.1		1/65.3	1/77.7	
Av. sentence length (m)	8.0	9.1	+14	3.9	3.9	0
Av. time served (m)	4.8	4.0	−17	2.5	2.1	−16
% of sentence served	60	44	−27	64	54	−16
Av. days served/conviction	40.9	27.7	−32	17.4	18.5	+6
Av. days served/offence	4.42	1.60	−64	1.16	.821	−29

Note: m = months. No. persons found guilty per 1000 population aged 10+ (England), 15+ (Sweden). Adults are 17+ (England), 18+ (Sweden).

tion was higher in England in 1987. It increased in England and decreased slightly in Sweden. The average time served in custody per offence was slightly higher in England, and this decreased in both countries. For example, in 1987, each burglary offence corresponded to an expected time served of 1.92 days in England and 1.71 days in Sweden. The corresponding American figure was 7.69 days.

VEHICLE THEFT

Table 2 shows that vehicle theft increased markedly in both England (by 36%) and Sweden (by 28%) between 1981 and 1987. Possibly because the English figures are more inclusive (including thefts of motorcycles and mopeds: see the Appendix), the population rate of vehicle theft was slightly higher in England: 20.0 versus 17.8 per 1000 households in 1987, for example. (It may be more appropriate to present the rate per

TABLE 3. *Robbery*

	England			Sweden		
	1981	1987	% change	1981	1987	% change
No. survey offences	163,000	177,000	+9	23,500	21,600	−8
95% confidence interval	106,000	77,000		8,800	8,700	
Per 1000 population	4.21	4.41	+5	3.61	3.24	−10
p (reported/offence)	.465	.439	−6	.27	.28	+4
p (recorded/reported)	.243	.382	+57	.493	.636	+29
p (recorded/offence)	.113	.168	+49	.133	.178	+34
Total offences recorded	20,282	32,633	+61	3,126	3,848	+23
Per 1000 population	.409	.650	+59	.376	.459	+22
No. cleared	5,002	6,950	+39	848	822	−3
p (cleared/recorded)	.247	.213	−14	.271	.214	−21
p (cleared/offence)	.0279	.0358	+28	.0360	.0381	+6
No. persons convicted	4,132	4,439	+7	529	421	−20
Per 1000 population	.0951	.101	+6	.0785	.0609	−22
p (convicted/cleared)	.826	.639	−23	.624	.512	−18
p (convicted/offence)	.0229	.0228	0	.0225	.0195	−13
Ratio (convicted/offence)	1/43.6	1/43.8		1/44.5	1/51.3	
No. adults sentenced to custody	2,680	3,184	+19	316	272	−14
Per 1000 population	.0707	.0809	+14	.0496	.0414	−17
p (custody/conviction)	.848	.882	+4	.771	.766	−1
p (custody/offence)	.0194	.0201	+4	.0173	.0149	−14
Ratio (custody/offence)	1/51.5	1/49.7		1/57.6	1/66.9	
Av. sentence length (m)	26.7	34.1	+28	19.2	23.6	+23
Av. time served (m)	13.1	16.6	+27	11.4	11.7	+3
% of sentence served	49	49	−1	59	50	−15
Av. days served/conviction	337.9	445.3	+32	267.3	272.6	+2
Av. days served/offence	7.74	10.15	+31	6.02	5.32	−12

Note: m = months. No. survey offences per 1000 population aged 16+ (England), 16–84 (Sweden). No. persons found guilty per 1000 population aged 10+ (England), 15+ (Sweden). Adults are 17+ (England), 18+ (Sweden).

1000 vehicles at risk, but this figure is not available from victimization survey data.) The probability of victims reporting vehicle thefts to the police was very high in England, and slightly lower in Sweden. Similarly, the probability of the police recording a vehicle theft that was reported to them was very high both in England and Sweden. (The estimates greater than 1 are discussed in the Appendix).

The population rate of police-recorded vehicle thefts was higher in England (e.g. 7.75 versus 6.86 vehicle thefts per 1000 population in 1987). However, as explained in the Appendix, the two rates are comparable when thefts of motorcycles and mopeds are added to the Swedish figures. The rate increased dramatically in Sweden during this time period (by 79%). As with burglary, the probability of a vehicle theft being cleared was higher in England, although it decreased in both countries. The population conviction rate for vehicle theft was also higher in England (e.g. .591 versus .420

convictions per 1000 population in 1987). The probability of a vehicle theft being followed by a conviction was also higher in England. It decreased by 47% in England, from .108 in 1981 (1 conviction per 9.23 vehicle thefts) to .0576 in 1987 (1 conviction per 17.4 vehicle thefts). It decreased by 34% in Sweden, from .0669 in 1981 (1 conviction per 14.9 vehicle thefts) to .0444 in 1987 (1 conviction per 22.5 vehicle thefts).

The population rate of custody for vehicle theft was higher in England, although it decreased in England (from .193 to .114 custodial sentences per 1000 adults) and increased in Sweden (from .0710 to .0870). The probability of being sentenced to custody after a conviction for vehicle theft was higher in England in 1981 (.280 versus .229 in Sweden) but higher in Sweden in 1987 (.290 versus .228 in England). The probability of a vehicle theft being followed by a custodial sentence was initially higher in England, but it then decreased by 57% to .0131 in 1987 (1 custodial sentence per 76.1 vehicle thefts). The comparable Swedish figure was almost identical, at .0129 (1 custodial sentence per 77.7 vehicle thefts).

As with burglary, the average sentence length and time served were both higher in England. The average time served in custody per conviction was also higher in England, although it decreased in England (by 32%, from 40.9 to 27.7 days) and increased slightly in Sweden (by 6%, from 17.4 to 18.5 days). The average time served in custody per vehicle theft offence was also higher in England, but it decreased dramatically by 64% to 1.60 days in 1987. The comparable Swedish figure was .821 days. (No comparable American figure is available.)

ROBBERY

Table 3 shows that the population rate of robbery was higher in England than in Sweden (e.g. 4.41 versus 3.24 robberies per 1000 population in 1987). This rate did not change markedly in either country. The probability of victims reporting robberies to the police was higher in England (although the Swedish figure is for robbery and assault combined). The probability of the police recording a robbery that was reported to them was much higher in Sweden. This probability increased in both countries (by 57% in England and by 29% in Sweden). Overall, the probability of a robbery offence being recorded was comparable in both countries, and it increased over time in both (by 49% in England and 34% in Sweden).

The population rate of recorded robberies was higher in England (e.g. .650 versus .459 robberies per 1000 population in 1987). It increased in both countries, largely because of the increase in recording. The probability of a recorded robbery being cleared was similar in both countries, and it decreased in both. The probability of a robbery offence being cleared was slightly higher in Sweden (e.g. .0381 versus .0358 in 1987).

The population conviction rate for robbery was higher in England (e.g. .101 versus .0609 convictions per 1000 population in 1987). Unlike burglary and vehicle theft, the probability of a cleared robbery being followed by a conviction was higher in England (e.g. .639 versus .512 in 1987). The probability of a robbery offence being followed by a conviction was also higher in England. For example, it was .0195 in Sweden in 1987 (1 conviction per 51.3 robberies) and .0228 in England (1 conviction per 43.8 robberies). Unlike burglary and vehicle theft, this probability did not decrease markedly between 1981 and 1987.

The population rate of custody for robbery was higher in England (e.g. .0809 versus .0414 custodial sentences for robbery per 1000 adults in 1987). The probability of being sentenced to custody after a conviction for robbery was high in both countries, but higher in England (e.g. .882 versus .766 in 1987). The probability of a robbery offence being followed by a custodial sentence was also higher in England. For example, it was .0149 in Sweden in 1987 (1 custodial sentence per 66.9 robberies) and .0201 in

England (1 custodial sentence per 49.7 robberies).

Once again, the average sentence length and time served for robbery were higher in England. Unlike burglary and vehicle theft, the time served for robbery increased considerably in England and stayed tolerably constant in Sweden between 1981 and 1987. Not surprisingly in view of the high probability of custody following a conviction in both countries, the average time served in custody per conviction for robbery was also higher in England. The average time served per robbery offence was higher in England, especially in 1987. This increased in England and decreased in Sweden. The average days served per robbery was 10.15 in England and 5.32 in Sweden in 1987. The corresponding American figure was 39.5.

ASSAULT

Table 4 shows that the population rate of assault was higher in Sweden (e.g. 26.0 versus 14.1 assaults per 1000 population in 1987). However, as explained in the Appendix, assault in Sweden is a considerably wider category than in England, so the two figures are not directly comparable. (The assault figures for Sweden include serious and petty assaults.) This rate did not change markedly in either country. As with robbery, the probability of victims reporting assaults to the police was higher in England. However, as with robbery, the probability of the police recording an assault that was reported to them was higher in Sweden. The probability of an assault offence being recorded was somewhat higher in England (.208 versus .178 in 1987) and increased in both countries (by 25% in England and by 34% in Sweden).

The population rate of recorded assaults was higher in Sweden (e.g. 3.67 versus 2.73 assaults per 1000 population in 1987). It increased in both countries, largely because of the increase in recording. The probability of a recorded assault being cleared was considerably higher in England (e.g. .743 versus .470 in 1987), and so was the probability of an assault offence being cleared (e.g. .155 versus .0835 in 1987).

The population conviction rate for assault was slightly higher in England (e.g. 1.04 versus .942 per 1000 population in 1987). It increased considerably in Sweden (by 27%). The probability of a cleared assault being followed by a conviction was higher in England in 1981 (.662 versus .400). However, it decreased in England by 32% and increased in Sweden by 13%, so in 1987 the probabilities in the two countries were almost identical. The probability of an assault offence being followed by a conviction also decreased in England and increased in Sweden. In 1987, it was .0692 in England (1 conviction per 14.4 assaults) and .0377 in Sweden (1 conviction per 26.6 assaults).

The population rate of custody for assault increased in both countries but was higher in Sweden (e.g. .268 versus .210 per 1000 adults in 1987). The probability of being sentenced to custody after a conviction for assault increased markedly in England (by 39%) but was still higher in Sweden in 1987 (.298 versus .199). However, the probability of an assault offence being followed by a custodial sentence was higher in England. For example, it was .0112 in Sweden in 1987 (1 custodial sentence per 89.0 assaults) and .0138 in England (1 custodial sentence per 72.6 assaults).

As before, the average sentence length and time served for assault were higher in England. The average time served in custody per conviction for assault increased by 55% in England. It was higher in Sweden in 1981 but considerably higher in England in 1987 (40.6 days versus 25.4 days). The average time served per assault offence increased in England and was also higher in England. In 1987, it was 2.81 days in England and .958 days in Sweden. The corresponding American figure was 13.9 days.

TABLE 4. *Assault*

	England			Sweden		
	1981	1987	% change	1981	1987	% change
No. survey offences	507,000	566,000	+12	166,500	173,000	+4
95% confidence interval	146,000	202,000		23,100	24,800	
Per 1000 population	13.1	14.1	+8	25.6	26.0	+2
p (reported/offence)	.402	.433	+8	.27	.28	+4
p (recorded/reported)	.414	.480	+16	.492	.636	+29
p (recorded/offence)	.166	.208	+25	.133	.178	+34
Total offences recorded	98,021	137,135	+40	22,117	30,763	+39
Per 1000 population	1.97	2.73	+39	2.66	3.67	+38
No. cleared	73,449	101,827	+39	12,478	14,447	+16
p (cleared/recorded)	.749	.743	−1	.564	.470	−17
p (cleared/offence)	.124	.155	+24	.0750	.0835	+11
No. persons convicted	48,650	45,640	−6	4,988	6,509	+30
Per 1000 population	1.12	1.04	−7	.740	.942	+27
p (convicted/cleared)	.662	.448	−32	.400	.451	+13
p (convicted/offence)	.0825	.0692	−16	.0300	.0377	+26
Ratio (convicted/offence)	1/12.1	1/14.4		1/33.3	1/26.6	
No. adults sentenced to custody	5,938	8,268	+39	1,428	1,761	+23
Per 1000 population	.157	.210	+34	.224	.268	+20
p (custody/conviction)	.143	.199	+39	.313	.298	−5
p (custody/offence)	.0118	.0138	+17	.0094	.0112	+19
Ratio (custody/offence)	1/84.8	1/72.6		1/106.5	1/89.0	
Av. sentence length (m)	10.8	14.7	+36	4.9	5.0	+2
Av. time served (m)	6.0	6.7	+12	3.3	2.8	−15
% of sentence served	56	46	−18	67	56	−16
Av. days served/conviction	26.1	40.6	+55	31.4	25.4	−19
Av. days served/offence	2.15	2.81	+31	.943	.958	+2

Note: m = months. No. survey offences per 1000 population aged 16+ (England), 16–84 (Sweden). No. persons found guilty per 1000 population aged 10+ (England), 15+ (Sweden). Adults are 17+ (England), 18+ (Sweden).

RAPE

Since there are no reliable victim survey estimates for rape in England or Sweden, Table 5 begins with the police-recorded rape offences. The population rate of recorded rapes increased dramatically in England (by 129%) but was still much higher in Sweden in 1987 (.238 versus .0960 per 1000 females). The probability of a recorded rape being cleared was considerably higher in England (e.g. .707 versus .319 in 1987). The population conviction rate for rape increased by one-third in both countries but was also higher in Sweden (e.g. .0349 versus .0223 convictions per 1000 males in 1987). The probability of a recorded rape being followed by a conviction decreased markedly in England (by 43%) but was still higher in England in 1987 (.172 versus .116).

The population rate of custody for rape increased markedly in Sweden (by 43%) and was higher in Sweden (e.g. .0315 versus

TABLE 5. *Rape*

	England			Sweden		
	1981	1987	% change	1981	1987	% change
Total offences recorded	1,068	2,471	+131	819	1,015	+24
Per 1000 female population	.0419	.0960	+129	.195	.238	+22
No. cleared	722	1,748	+142	346	324	−6
p (cleared/recorded)	.676	.707	+5	.422	.319	−24
No. persons convicted	320	425	+33	86	118	+37
Per 1000 male population	.0165	.0223	+35	.0260	.0349	+34
p (convicted/cleared)	.443	.243	−45	.249	.364	+46
p (convicted/offence)	.300	.172	−43	.105	.116	+10
Ratio (convicted/offence)	1/3.3	1/5.8		1/9.5	1/8.6	
No. adults sentenced to custody	269	396	+47	69	101	+46
Per 1000 male population	.0176	.0209	+19	.0221	.0315	+43
p (custody/conviction)	.918	.968	+5	.885	.910	+3
p (custody/offence)	.275	.166	−40	.0842	.0995	+18
Ratio (custody/offence)	1/3.6	1/6.0		1/11.9	1/10.0	
Av. sentence length (m)	40.1	52.0	+30	22.8	27.2	+19
Av. time served (m)	20.3	27.2	+34	14.5	14.8	+2
% of sentence served	51	52	+3	64	54	−16
Av. days served/conviction	566.8	800.9	+41	390.3	409.7	+5
Av. days served/offence	170.0	137.8	−19	41.0	47.5	+16

Note: m = months. No. persons found guilty per 1000 male population aged 14+ (England), 15+ (Sweden). Adults are 17+ (England), 18+ (Sweden).

.0209 per 1000 male adults in 1987). The probability of being sentenced to custody after a conviction for rape was very high in both countries (e.g. .968 in England and .910 in Sweden in 1987). The probability of a recorded rape being followed by a custodial sentence decreased markedly in England (by 40%) but was still higher in England in 1987 (.166 versus .0995). As usual, the average sentence length and average time served were higher in England, and both increased over time in England. The average time served in custody per recorded rape decreased in England (by 19%) and increased in Sweden (by 16%) but it was still much higher in England in 1987 (137.8 days versus 47.5 days). The corresponding American figure was 247.9 days.

HOMICIDE

Necessarily, there are no victim survey estimates for homicide. Because of small numbers, the Swedish homicide figures are averaged over 1980–82 (for 1981) and 1986–88 (for 1987). Table 6 shows that the population rate of homicide was higher in Sweden (e.g. .0163 versus .0137 per 1000 population in 1987). The probability of a recorded homicide being cleared was considerably higher in England (e.g. .971 versus .728 in 1987). The population conviction rate for homicide was almost identical in England and Sweden (e.g. .0098 versus .0100 per 1000 population in 1987), but the probability of a recorded homicide being followed by

TABLE 6. *Homicide*

	England			Sweden		
	1981	1987	% change	1981*	1987*	% change
Total offences recorded	559	688	+23	123.3	137.0	+11
Per 1000 population	.0113	.0137	+21	.0148	.0163	+10
No. cleared	542	668	+23	88.7	99.7	+12
p (cleared/recorded)	.970	.971	0	.719	.728	+1
No. persons convicted	388	432	+11	59.7	68.9	+15
Per 1000 population**	.0089	.0098	+10	.0089	.0100	+12
p (convicted/cleared)	.716	.647	−10	.673	.691	+3
p (convicted/offence)	.694	.628	−10	.484	.503	+4
Ratio (convicted/offence)	1/1.44	1/1.59		1/2.07	1/1.99	
No. adults sentenced to custody	316	369	+17	57.7	64.1	+11
Per 1000 population	.0083	.0094	+12	.0091	.0097	+7
p (custody/conviction)	.852	.887	+4	.983	.981	0
p (custody/offence)	.591	.557	−6	.476	.493	+4
Ratio (custody/offence)	1/1.69	1/1.80		1/2.10	1/2.03	
Av. sentence length (m)	134.2	133.7	0	126.0	116.4	−8
Av. time served (m)	68.9	66.6	−3	50.4	63.6	+26
% of sentence served	51	50	−3	40	55	+37
Av. days served/conviction	1786	1797	+1	1507	1898	+26
Av. days served/offence	1239	1128	−9	729	955	+31

Note: m = months. * The Swedish figures (except for sentencing) are averaged over 1980–82 and 1986–88. ** No. persons found guilty per 1000 population aged 10+ (England), 14+ (Sweden). Adults are 17+ (England), 18+ (Sweden).

a conviction was higher in England (e.g. .628 versus .503 in 1987).

The population rate of custody for homicide was almost identical in England and Sweden (e.g. .0097 versus .0094 per 1000 adults in 1987). Not surprisingly, the probability of being sentenced to custody (including secure hospitals) after a conviction for homicide was very high in both countries (e.g. .887 in England and .981 in Sweden in 1987). The probability of a recorded homicide being followed by a custodial sentence was higher in England (e.g. .557 versus .479 in 1987). The average sentence length and time served were longer in England. The average time served in custody per recorded homicide was also higher in England (e.g. 1128 days versus 955 days in 1987). The corresponding American figure was very similar, at 1092 days.

CHANGES OVER TIME

Table 7 summarizes changes between 1981 and 1987 in England and Sweden for residential burglary, vehicle theft, robbery and assault. For ease of presentation, increases and decreases are only shown if they are greater than 10%. Burglary and vehicle theft are property offences, while robbery and assault are violent offences. With the single exception of burglary in Sweden, property offences increased in both countries according to the survey and according to police records. However, violent offences increased in police records in both countries but did not increase according to the survey.

TABLE 7. *Summarizing changes over time*

	England				Sweden			
	B	V	R	A	B	V	R	A
Survey offence rate	+	+	0	0	0	+	0	0
Recorded offence rate	+	+	+	+	0	+	+	+
p (reported/offence)	0	0	0	0	0	+	0	0
p (recorded/reported)	0	−	+	+	0	+	+	+
p (cleared/recorded)	0	−	−	0	−	−	−	−
p (cleared/offence)	−	−	+	+	−	−	0	+
Conviction rate	−	−	0	0	−	−	−	+
p (convicted/cleared)	−	−	−	−	0	−	−	+
p (convicted/offence)	−	−	0	−	−	−	−	+
Custody rate	+	−	+	+	−	+	−	+
p (custody/conviction)	+	−	0	+	+	+	0	0
p (custody/offence)	−	−	0	+	−	−	−	+
Sentence length	+	+	+	+	0	0	+	0
Time served	0	−	+	+	−	−	0	−
Time served/conviction	+	−	+	+	0	0	0	−
Time served/offence	−	−	+	+	−	−	−	0

Note: B = Residential burglary; V = Vehicle theft; R = Robbery; A = Assault; + = Increase (greater than 10%); 0 = Change of 10% or less; − = Decrease (greater than 10%).

There are many possible factors influencing crime rates in different countries, and it is not possible for us to discuss them all here nor to draw firm conclusions about their relative importance. It may be that different factors influence changes in different types of offences, and that different factors influence changes in different countries (and indeed in different time periods). However, in the interests of simplicity, we will search for factors that might explain changes in rates of both property and violent offences in both countries.

The relationship between changes in crime rates and changes in the probability of legal punishments will be discussed later. One possible explanation for the differences between changes in survey violence and changes in police-recorded violence focusses on the fact that socially-marginal people (such as criminals, drug addicts, alcoholics and the homeless) are disproportionally missing from surveys (McClintock & Wikström, 1992). Such people are particularly likely to be victims of violence. It is possible that a real increase in violence between 1981 and 1987 in both England and Sweden might have affected socially marginal people rather than more conventional ones.

Another possibility is that the increase in police-recorded assault in both countries has been partly driven by an increasing tendency to record family violence (Davidoff & Dowds, 1989). Similarly, there may have been an increasing tendency to record rapes between intimates (Lloyd & Walmsley, 1989). Family violence is unlikely to be discovered in surveys. Hence, a recorded increase in family violence could easily coincide with no change in survey measures of violence. Table 7 shows that, while the probability of an offence being reported to the police generally did not change in either country, the probability of a reported offence being recorded increased particularly for violent offences; and the probability of an offence being cleared increased in both countries for assault. Inevitably, offences of

TABLE 8. *Summarizing differences between England and Sweden in 1987*

	B	V	R	A	P	H
Survey offence rate	E	E	E	S		
Recorded offence rate	E	E	E	S	S	S
p (reported/offence)	0	0	E	E		
p (recorded/reported)	E	0	S	S		
p (cleared/recorded)	E	E	0	E	E	E
p (cleared/offence)	E	E	0	E		
Conviction rate	E	E	E	0	S	0
p (convicted/cleared)	S	S	E	0	S	0
p (convicted/offence)	S	E	E	E	E	E
Custody rate	E	E	E	S	S	0
p (custody/conviction)	0	S	E	S	0	S
p (custody/offence)	S	0	E	E	E	E
Sentence length	E	E	E	E	E	E
Time served	E	E	E	E	E	0
Time served/conviction	E	E	E	E	E	0
Time served/offence	E	E	E	E	E	E

Note: B = Residential burglary; V = Vehicle theft; R = Robbery; A = Assault; P = Rape; H = Homicide; E = England greater (by more than 10%); 0 = England-Sweden difference 10% or less; S = Sweden greater (by more than 10%).

family violence have high clear-up rates, because the offenders are always known. In contrast, the probability of burglaries and vehicle thefts being cleared decreased in both countries.

Both in England and Sweden, the probability of an offence leading to a conviction generally decreased between 1981 and 1987 (except for assault in Sweden). Previous to 1982 it was the victim's decision whether to prosecute or not in cases of petty assault in private premises, but in 1982 the law was changed so the police were required to prosecute these offences if they were reported. In England, the decrease was because of the increase in the police using cautions and unrecorded warnings rather than prosecuting offenders in court, and because of the effect of increasing procedural safeguards for alleged offenders (Farrington & Langan, 1992: 19–20). In both countries, there may have been an increasing concern to decrease the costs of the criminal justice system by diverting offenders from convictions.

The probability of receiving a custodial sentence following a conviction increased in both countries for burglary, but otherwise did not change consistently. The probability of an offence leading to a custodial sentence decreased in both countries for burglary and vehicle theft. Sentence lengths increased for all offences in England, but time served only increased for violent offences. In Sweden, sentence length increased only for robbery, and time served decreased for all offences except robbery. In England, the time served per offence generally decreased for property crimes and increased for violent crimes. In Sweden, it decreased for all offences except assault.

Differences between England and Sweden

Table 8 summarizes differences between England and Sweden in 1987. Differences are only indicated if they exceed 10%. According to the survey and police-recorded offences, England had a higher crime rate for burglary, vehicle theft and robbery,

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

Changes in	Raw data	Logarithmic transformation
p (reported/offence)	.15	.20
p (recorded/reported)	−.54	−.54
p (cleared/recorded)	−.40	−.43
p (cleared/offence)	−.63*	−.63*
p (convicted/cleared)	−.65*	−.66*
p (convicted/offence)	−.79**	−.82**
p (custody/conviction)	−.29	−.34
p (custody/offence)	−.78**	−.79**
Av. sentence length	.16	.10
Av. time served	−.26	−.31
Av. time served/conviction	−.34	−.39
Av. time served/offence	−.77**	−.77**

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

while Sweden had a higher crime rate for assault, rape and homicide. However, the higher rate of assault in Sweden may be misleading, because of the wider definition of assault in Sweden. Also, the higher rate of rape in Sweden may be misleading; McClintock and Wikström (1990: 216) suggested that the Scottish police were less willing to record an offence as rape than the Swedish police, and the English police may be similarly less willing.

With the single exception of robbery, the clearance rate was higher in England. Similarly, with the single exception of burglary, the probability of an offence leading to a conviction was higher in England. The rate of custody per capita was higher in England for burglary, vehicle theft and robbery, but higher in Sweden for assault and rape. However, the probability of a conviction leading to a custodial sentence was higher in England for only one offence: robbery. In contrast, the probability of an offence leading to a custodial sentence was higher in Sweden for only one offence: burglary. Consistently, sentence lengths and time served were higher in England, and the expected time served per offence was also higher in England for every offence.

CRIME RATE VERSUS RISK OF PUNISHMENT

Farrington and Langan (1992) noted that changes in the crime rate in England and America tended to vary (inversely) with changes in the risk of conviction and custody. We tested this hypothesis more systematically by correlating changes in the crime rate (based on the victim survey) between 1981 and 1987 with corresponding changes in many of the other quantities shown in Tables 1–4. This analysis was conducted for four offences in England and Sweden (burglary, vehicle theft, robbery and assault) and four offences in America (burglary, robbery, assault and rape). It could not be carried out in America for vehicle theft because of the lack of national data on convictions and sentencing, but it could be carried out for rape because of the reliable rape estimates in the American National Crime Survey.

The correlations were calculated using both raw percentage change data and the logarithms of percentage change data. The advantage of using logarithms is that they make proportional increases and decreases exactly symmetrical. For example, a doubling of the crime rate is a 100% increase,

whereas a symmetrical halving of the crime rate is a 50% decrease. Percentage decreases appear smaller in comparison with percentage increases. Using natural logarithms, a doubling has the value of .693 (ln 2), whereas a halving has the value -.693 (ln 0.5). Hence, increases and decreases are symmetrical with logarithmically transformed data.

Table 9 shows the most important correlates of changes in the crime rate (over 12 offences in 3 countries). Focussing on the logarithmically transformed data, changes in the survey crime rate between 1981 and 1987 correlated -.82 ($p < .01$) with changes in the probability of an offence being followed by a conviction, -.77 ($p < .01$) with changes in the average time served per offence, and -.79 ($p < .01$) with changes in the probability of an offence being followed by a custodial sentence. Changes in the crime rate also correlated -.63 ($p < .05$) with changes in the probability of an offence being cleared. Changes in the survey crime rate did not correlate significantly with changes in the probability of receiving a custodial sentence after a conviction, with changes in the average sentence length, or with changes in the average time served per custodial sentence.

It is interesting to investigate how far these results are replicated with the police-recorded crime rate. Changes in the police-recorded crime rate correlated .69 ($p < .05$) with changes in the survey crime rate between 1981 and 1987 (using logarithmic data). Changes in the police-recorded crime rate also correlated -.69 ($p < .05$) with changes in the probability of a conviction following a recorded offence. Hence, there was a significant negative correlation between changes in the crime rate and changes in the probability of conviction whether survey-based or police-recorded crime data were used. This correlation did not merely reflect the conjunction of an increasing crime rate and a constant conviction rate. In both England and Sweden, the conviction rate decreased in the majority of cases.

Partial correlation analyses showed that the correlation between changes in the survey crime rate and changes in the probability of an offence being followed by a conviction was lower, but still substantial, after controlling for all the other variables shown in Table 9. For example, this correlation was -.45 ($p = .08$) after controlling for changes in the average time served per offence, -.33 after controlling for changes in the probability of an offence being followed by a custodial sentence, and -.71 ($p < .01$) after controlling for changes in the probability of an offence being cleared. In contrast, the correlations between changes in the crime rate and changes in these latter variables did not hold up after controlling for changes in the probability of an offence being followed by a conviction. For example, the partial correlation between changes in the crime rate and changes in the average time served per offence, controlling for changes in the probability of an offence being followed by a conviction, was -.13 (N.S.). Hence, it can be concluded that the most important correlate of changes in the crime rate was changes in the probability of an offence leading to a conviction.

Table 10 summarizes the most important percentage changes on which this analysis is based. For example, in England the survey burglary rate increased by 50%, while the probability of a burglary leading to a conviction decreased by 47%. In Sweden the survey rate of vehicle theft increased by 22%, while the probability of a vehicle theft leading to a conviction decreased by 34%. In America, the survey robbery rate decreased by 31%, while the probability of a robbery leading to a conviction increased by 27%.

Clearly, the major exception to the inverse relationship between changes in crime rates and changes in the probability of punishment is residential burglary in Sweden. While the probability of an offence leading to a conviction decreased by 32%, and the average time served decreased by 37%, the survey burglary rate in Sweden

TABLE 10. *Summary of changes over time*

	Percentage change in:				
	Survey Crime Rate	p (cleared/ offence)	p (convicted/ offence)	p (custody/ offence)	Av. days/ offence
England					
Burglary	+50	−18	−47	−36	−33
Vehicle theft	+28	−23	−47	−57	−64
Robbery	+5	+28	0	+4	+31
Assault	+8	+24	−16	+17	+31
Sweden					
Burglary	−1	−34	−32	−23	−37
Vehicle theft	+22	−21	−34	−16	−29
Robbery	−10	+6	−13	−14	−12
Assault	+2	+11	+26	+19	+2
America					
Burglary	−30	+10	+7	+34	+45
Robbery	−31	+28	+27	+58	+70
Assault	−10	+54	+38	+74	+64
Rape	−31	+65	+59	+112	+127

stayed constant. It would be interesting to investigate why Sweden differed from England and America in residential burglary; for example, whether this was a function of characteristics of burglary offenders and offences in Sweden (e.g. the relationship with drug addiction), or whether it was related to societal differences (e.g. the more extensive welfare system in Sweden). Generally, the inverse relationship was stronger in England and America than in Sweden; for example, changes in the survey crime rate correlated -.88 ($p < .01$) with changes in the probability of an offence leading to a conviction when the analysis was restricted to the eight offences in England and America.

CONCLUSIONS

The major contribution of this paper is to provide national estimates for the flow of offenders through the criminal justice system, from the commission of crimes through police recording and conviction to imprisonment. These national estimates have been provided for England and Sweden in 1981 and 1987. However, it must be emphazised that our figures are only estimates, based on numerous assumptions detailed in the Appendix. More accurate figures could be obtained by actually tracking a cohort of apprehended offenders through convictions, sentences and imprisonment. This is far more feasible in Sweden, where every person has a unique identification number which can be used for data linkage. Special attention should be paid to co-offenders (Reiss & Farrington, 1991). If offenders could also be interviewed about their offending histories, it might also be possible to link up criminal justice data with estimates of the probability of offences leading to apprehension.

The major limitations of our analyses are that they are based on only four types of offences in two years. It would obviously be better to study more offences in more years, but we are limited by the availability of data

(especially from victimization surveys). Ideally, the BCS should be conducted every year. Ideally, a special Swedish victimization survey should be conducted every year. Urgent improvements are needed in the victimization questions in the LCS, to make them more comparable with police-recorded crimes.

We have discovered interesting differences between England and Sweden and interesting changes over time, but we have not been able to reach firm conclusions about the explanations for these differences and changes. The strong negative relationship between changes in crime rates and changes in conviction or imprisonment rates in English and American data was not replicated in Swedish data. More extensive measurement between countries and over time of numerous factors thought to influence crime rates would be needed in order to explain cross-national differences and changes over time convincingly.

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APPENDIX

Data sources

Comparability

There are three problems of comparability: between England and Sweden, over time, and between victim survey and criminal justice data. Comparisons between countries are the most problematic. With the exception of rape in Sweden, the legal definitions of these crimes did not change between 1981 and 1987 in either country, and neither did the official police rules for classifying offences. Also, for these crimes, the victimization questions are reasonably comparable over time in each country. (Note: "England" includes Wales.)

In England, rape can only be committed by a male offender against a female victim. This was also the case in Sweden in 1981. However, in 1984 the Swedish rape law was changed to allow males and females to be both victims and offenders (SFS 1984: 399; see National Council for Crime Prevention, 1990). Nevertheless, very few females are recorded as rape offenders and very few males are recorded as rape victims in Sweden. Also, in mid-1987, the Swedish rape law was changed again so that vaginal penetration was not required for rape (McClintock & Wikström, 1990: 213). Despite these changes, for most practical purposes rape offenders and victims in England are quite

similar to rape offenders and victims in Sweden. In 1987, for example, there were no females recorded as rape offenders in Sweden.

The legal definitions of homicide (murder, manslaughter and infanticide), robbery (theft by force or threat of force) and vehicle theft (including unauthorized taking) are quite comparable in England and Sweden. However, the Swedish figures for vehicle theft exclude thefts of motorcycles and mopeds, which are included in the English figures. (There is a separate Swedish victimization question for the theft of motorcycles and mopeds, but unfortunately it also includes theft of bicycles.)

Burglary raises some problems of comparability. In Sweden, the police statistics show household burglary, burglary of summer cottages, and burglary of basements and attics separately (Dolmén, 1990: 65). Generally, basements and attics in Sweden are used for storage purposes in multiple-occupation dwellings, and are not physically connected to the household's dwelling. In England, a burglary of an outbuilding is classified as residential only if the outbuilding is physically linked to the household's dwelling via a connecting door (Mayhew et. al., 1989: 121). Hence, in most cases, burglaries of basements and attics in Sweden would not correspond to residential burglaries in England, and so they have not been included in our figures. Burglaries of summer cottages are included in the English victim survey figures, but summer cottages are less common in England than in Sweden. In order to achieve the best possible comparability, we compared residential burglary in England with household burglary and burglary of summer cottages in Sweden.

Assault also raises problems of comparability. Serious assaults ("woundings") in England are defined as assaults causing injuries, broken bones, teeth knocked out, unconsciousness, or cuts. Less serious assaults ("common assaults") are those causing bruises, swelling, a black eye or negligible injury. Only the serious assaults are included in the official statistics of crimes and convictions, since common assaults are classified legally as non-indictable or summary offences.

In Sweden, there are three categories of assaults: serious assaults (e.g. life-threatening grievous bodily harm), petty assaults (usually involving injury or at least visible marks such as a black eye or bruises), and violence to public officials (in most cases, police officers). Assaults on police officers in England are classified as summary offences, except in the rare cases where they are sufficiently serious to be counted as woundings. Assaults causing negligible injury would be classified as molestation in Sweden. We decided that the best comparability could be achieved by comparing serious assaults in England with serious and petty assaults in Sweden. In this comparison, assault in Sweden is clearly more inclusive than assault in England, since Swedish assaults include those causing bruises, swelling or a black eye.

Victim-reported offences

The British Crime Survey (BCS) interviewed 10,905 persons in 1981 and 10,392 in 1987 (Hough & Mayhew, 1983: 39; Mayhew et. al., 1989: 93). The BCS aimed to achieve a face-to-face interview with a random sample of persons aged 16 or older (one per household), and the completion rate was 80% in 1981 and 77% in 1987. The survey used a cluster sampling technique. The maximum number of offences in a series that were counted was 5. Great efforts were made to ensure that crime definitions in the national victim survey were comparable with crime definitions in the official police-recorded statistics. However, differences from police statistics are inevitable, because police statistics also include crimes against organisations and against persons under 16.

In Sweden, victimization questions were asked as part of the annual Living Conditions Survey (LCS), which is an all-purpose

national survey including questions on many different topics. Unfortunately, the victimization results are presented differently from year to year and are rather unsatisfactory for the purposes of our comparison (see Statistics Sweden, or SCB, 1991). In particular, assault and robbery are combined under the single heading of violence causing visible marks and the residential burglary and vehicle theft figures include vandalism as well as theft. Moreover, the "burglary" question in the LCS actually is whether a theft (or vandalism) has taken place in the household's residence. It is inevitable that results from an omnibus national survey are less satisfactory than those from a specially designed victimization survey such as the BCS, because the number of questions and amount of time spent on victimization is very much less in the omnibus survey.

The LCS interviewed 7,703 persons aged 16–84 in 1981, and 7,052 in 1987, with completion rates of 86% in 1981 and 81% in 1987. The LCS was based on simple random sampling, and the maximum number of offences in a series that were counted was 6. The comparability between victimization questions in the LCS and crime definitions in the official police-recorded statistics is generally poor.

The calculations will be explained with special reference to residential burglary. Unless otherwise stated, they are similar for all other offences. Victim survey estimates are available for three other serious offences (robbery, assault, vehicle theft) in England, and for vehicle theft and violence (assault and robbery combined) in Sweden.

According to the BCS, an estimated 744,000 burglaries were committed in England in 1981 (see Table 1), with a 95% confidence interval of ± 128,000; and 1,180,000 burglaries were committed in England in 1987, with a 95% confidence interval of ± 154,000 (Mayhew, 1990). Hence, the 59% increase in burglary in England between 1981 and 1987 was statistically significant ($t = 4{\cdot}36$, $p < .001$). The 36% increase in motor vehicle theft was also significant ($t = 2{\cdot}24$, $p < .05$), but the changes in robbery and assault were not. The confidence intervals were relatively large for robbery; 163,000 ± 106,000 in 1981, for example. (Note: Generally, results are given to 3 significant figures in the tables, although they are not always accurate to 3 significant figures. In some cases, there may be slight discrepancies in the tables between annual estimates and percentage changes. These occur because percentage changes are based on more accurate estimates than the figures shown in the tables.)

In the victim surveys, burglary and vehicle theft are considered to be crimes against households, whereas robbery and assault are viewed as crimes against persons. The estimated number of households in England was 18,195,000 in 1981 and 19,273,000 in 1987 (Mayhew et al., 1989: 100). Therefore, the rate of burglary per 1000 English households increased by 50%, from 40.9 in 1981 to 61.2 in 1987. The estimated number of persons in England aged 16 or over was 38,724,000 in 1981 and 40,137,000 in 1987 (Mayhew et al., 1989: 100). Hence, there was little change in the rate of robbery per 1000 persons, from 4.21 in 1981 to 4.41 in 1987.

Unfortunately, the LCS does not provide estimates of the number of burglaries committed each year, but only for selected years (four between 1978 and 1988). However, the LCS does publish the percentage of households burgled each year. In 1987, there were an estimated 78,000 household burglaries, with 1.8% of households burgled (SCB, 1991). In 1981, 1.9% of households were burgled, but the number of burglaries was not reported. The number in 1981 was estimated by taking account of the change in the percentage of households burgled and the change in the number of households. The estimated number of Swedish households was 3,497,801 in 1981 and 3,670,335 in 1987 (SCB, 1982b, 1988b). Hence, since the number of households in 1981 was 95.3% of the number in 1987, and since the

percentage burgled was 105.6% of the percentage in 1987, the estimated number of households burgled in 1981 was 78,000 × .953 × 1.056, which comes to about 78,500.

In 1987, there were an estimated 31,000 burglaries of summer cottages, with 1.0% of households burgled (SCB, 1991). In 1981, 0.9% of households suffered summer cottage burglaries, but the estimated number of these burglaries was not published. A similar calculation to that described above yielded an estimate of 26,600 summer cottage burglaries in 1981. Hence, the total number of residential burglaries in Sweden in 1981 was estimated to be (78,500 + 26,600) or 105,100. The rate of residential burglary per 1000 households decreased marginally by 1%, from 30.0 in 1981 to 29.7 in 1987.

In deriving an order-of-magnitude estimate for the confidence interval, it was simplest to assume that the rate of residential burglary was equivalent to the proportion of households burgled (p). The standard error of a proportion p is the square root of p(1-p)/N, and the 95% confidence interval is ± 1.96 times this standard error. Hence, for 1981, p = .030, the standard error = .00194, the confidence interval is ± .0038, and multiplying by the number of households this becomes ± 13,300 burglaries approximately. As expected, the change in the Swedish residential burglary rate between 1981 and 1987 was not significant.

There were an estimated 144,000 vehicle thefts in Sweden in 1987, with 3.8% of households victimized (SCB, 1991). In 1981, 3.1% of households were victimized, but the estimated number of vehicle thefts was not published. However, a similar calculation to that described above yields an estimate of 112,000 vehicle thefts in 1981.

As already mentioned, the LCS vehicle theft figures include offences involving only vandalism against motor vehicles, many of which would have been attempted thefts. The BCS figures for vehicle theft exclude attempted thefts. Hence, in the interests of comparability, it is desirable to deduct the vandalism-only offences from the Swedish figures. The LCS does not normally publish the percentage of vehicle thefts involving only vandalism. However, this was 59% in 1984/85 and 50% in 1978. Taking the average of these figures (54.5%) and deducting this proportion from the above numbers of vehicle thefts yields an estimated 51,000 completed vehicle thefts in 1981 and 65,500 in 1987, a 28% increase. Taking account of our estimated confidence intervals, this was not a statistically significant increase. (Swedish burglary offences involving only vandalism were not excluded because the BCS burglary figures include offences where nothing was stolen.)

The LCS published only that 1.8% of persons were violence victims in both 1981 and 1987 (SCB, 1991). However, from the relationship between the percentage victimized and the estimated number of violent offences published in five other years between 1978 and 1988, it was estimated that on average 1.8% corresponded with about 192,300 violent crimes. The estimated number of persons in Sweden aged 16–84 was 6,509,661 in 1981 and 6,666,392 in 1987 (SCB, 1982b, 1988b), an increase of 2.4%. Assuming this increase between 1981 and 1987 about an average figure of 192,300 yields an estimate of about 190,000 violent offences in 1981 and 194,600 in 1987.

As already mentioned, assault and robbery were not distinguished in the LCS, but they were disaggregated by assuming that the proportion of robberies was the same among victim-reported crimes as among police-recorded crimes. In 1981, there were 3,126 robberies out of 25,243 police-recorded assaults and robberies (12.4%), while the corresponding figures in 1987 were 3,848 robberies out of 34,611 police-recorded assaults and robberies (11.1%; see SCB, 1982a, 1988a). Applying these proportions yielded estimates of 23,500 robberies and 166,500 assaults in 1981 and 21,600 robberies and 173,000 assaults in 1987. The changes over time in the numbers of these offences were not statistically significant.

Farrington and Langan (1992) used information about the number of offenders per offence to estimate the number of offenders at risk of conviction. Unfortunately, this information is not available for Sweden. Hence, this factor is disregarded in our calculations. Since the number of offenders per offence averaged about 2 for the four survey offences in England, this means that the probability of an offender being found guilty or sentenced to custody in our tables is probably over-estimated by a factor of about 2.

According to English victims, 66.2% of burglaries were reported to the police in 1981 (or became known to the police for other reasons) and 63.2% in 1987 (Hough & Mayhew, 1983: 11; Mayhew et. al, 1989: 16). The proportion of offences reported to the police was not asked in the LCS in 1981 and 1987. However, it was asked in 1978 and 1984/85 (SCB, 1991), and these figures are shown in Table 1. The burglary reporting figure is the weighted average of the reporting of household burglary (.62 in both years) and burglary of summer cottages (.74 and .71 respectively). The figure for the reporting of motor vehicle theft excludes the vandalism-only offences. Unfortunately, this disaggregated figure (.80) for completed thefts was only shown for the 1978 survey. However, the proportion of all motor vehicle thefts reported increased by 15% between 1978 and 1984/85 (from .58 to .67) and so it was assumed that the proportion of completed thefts reported increased similarly (from .80 to .92). It was not possible to disaggregate the reporting of robberies and assaults in Sweden. The reporting figures are based on small numbers in some cases; for example, in 1987 for assault and robbery, the percentage victimized corresponds to 127 victims, with 28% of crimes reported.

In England, the number of comparable (i.e. residential) burglaries recorded by the police was 349,692 in 1981 and 483,001 in 1987 (Hough & Mayhew, 1983: 46; Mayhew et al., 1989: 15,101). Hence, the probability of a residential burglary being recorded by the police was estimated to be .470 in 1981 and .409 in 1987, a 13% decrease. By dividing the probability of an offence being recorded by the probability of an offence being reported, it could also be estimated that the probability of the police recording a residential burglary that was reported to them was .710 in 1981 and .648 in 1987. This calculation neglects the possibility that some offences will have been recorded without being reported, for example when a crime is first discovered as a result of an admission by an apprehended offender (see e.g. Farrington & Dowds, 1985). However, it is not possible to derive a national estimate of the prevalence of recording without reporting. There are many reasons why the police do not record crimes reported to them, including their doubts about the honesty of the victim and about whether the act was a crime (see e.g. Hough & Mayhew, 1983: 12).

The estimate of a vehicle theft being recorded in England in 1981 (1.0) seems unsatisfactory. In reaching this figure, the number of comparable vehicle thefts recorded by the police (ie. comparable to those included in the BCS) was estimated. The total number of vehicle thefts recorded by the police was reduced by 5% to exclude attempted thefts, and by a further 10% to exclude thefts of commercially owned vehicles, both of which were excluded from the BCS (Hough & Mayhew, 1983: 46). Presumably, the 1981 survey estimate was lower than the true figure. (Its confidence limits were ± 62,000.) The number of comparable robberies was estimated by reducing the police figures by 12% to take account of victims under 16 (who were excluded from the BCS), and the number of comparable assaults was estimated on the same basis by reducing the police figures by 15%.

In Sweden, 20,014 household burglaries were recorded by the police in 1981, and 20,351 in 1987 (Dolmén, 1990: 119). However, these figures include offences subsequently classified as "no crimes". ("No

crimes" are excluded from the English Criminal Statistics.) The number of "no crimes" for burglary was 232 in 1981 and 254 in 1987. These were subtracted from the recorded figures to yield 19,782 household burglaries in 1981 and 20,097 in 1987. Similarly excluding "no crimes", the number of summer cottage burglaries recorded by the police was 10,423 in 1981 and 9,428 in 1987. Hence, the total number of police-recorded residential burglaries in Sweden was 30,205 in 1981 and 29,525 in 1987. By comparing recorded offences with survey offences, the probability of a burglary being recorded was estimated to be .287 in 1981 and .271 in 1987. The probability of the police recording a residential burglary that was reported to them was then calculated to be .442 in 1981 and .420 in 1987. These figures are under-estimates of the true probability of recording a residential burglary, because of the inclusion of vandalism-only offences in the survey figures.

For vehicle theft, robbery and assault in Sweden, the probability of a reported offence being recorded is over-estimated. This is because the number of recorded vehicle thefts includes commercial vehicles and attempts, both of which are excluded from the survey figures; while the number of recorded robberies and assaults includes offences against persons under 16, which are excluded from the survey figures. It was not possible to estimate the proportion of recorded offences that would not be survey offences (as the BCS did).

Police-recorded offences

In England, as already mentioned, the total number of residential burglaries recorded by the police in the official Criminal Statistics was 349,692 in 1981 and 483,001 in 1987, a 38% increase (Home Office, 1982a: 44; 1988a: 36). Since these figures represent the population of offences rather than a sample, tests of statistical significance are not applicable. As a rough rule of thumb, changes greater than 10% or likely to have some practical significance over this 6-year time period. During the same time period, the total resident population of England and Wales increased by 1%, from 49,634,300 in 1981 to 50,242,900 in 1987 (Office of Population Censuses and Surveys, or OPCS, 1990). Hence, the number of recorded burglaries per 1000 population also increased by 38%, from 7.05 in 1981 to 9.61 in 1987. The rape rates are shown per 1000 females.

In Sweden, as already mentioned, the total number of residential burglaries decreased slightly by 2%, from 30,205 in 1981 to 29,525 in 1987. During the same time period, the total resident population increased by 1%, from 8,323,033 to 8,381,515 (Dolmén, 1990: 125). Hence, the number of recorded burglaries per 1000 population decreased by 3%, from 3.63 in 1981 to 3.52 in 1987. As in England, the rape rates are shown per 1000 females, although in 1987 there may have been a few male victims included in the Swedish statistics. Because of the small numbers, the homicide figures are the averages over 1980–82 and 1986–88.

As already mentioned, the Swedish figures for vehicle theft exclude thefts of motorcycles and mopeds, which are included in the English figures. However, the number of police-recorded thefts of motorcycles and mopeds in Sweden can be obtained. Excluding "no crimes", there were 11,404 of these thefts in 1981 and 7,763 in 1987. Adding these figures to the number of vehicle thefts shown in Table 2 makes the rate of total vehicle theft per 1000 population 5.21 in 1981 and 7.79 in 1987. Hence, when the Swedish vehicle theft figures were made more comparable with the English figures, the population rates in 1987 were almost identical.

In England, 27.7% of recorded burglaries were considered to be detected or "cleared up" by the police in 1981, and 26.1% in 1987 (Home Office, 1982a: 44; 1988a: 36). A cleared up offence does not invariably involve an offender being charged in court. In 1987, about 51% of all recorded clearances involved a charge, while 11% involved a recorded police caution (warning), 16% in-

volved offences "taken into consideration" in court, and 22% were cleared by other means, principally through admissions by prisoners convicted of something else (Home Office, 1988a: 46). Comparable figures are not available for 1981 or specifically for burglary. However, in a special national survey in 1977, Burrows and Tarling (1982: 20) found that 43% of burglaries were cleared up by charging, 5% by cautioning, 33% by taking into consideration, and 19% by other means (see also Burrows, 1986).

In Sweden, the official police clear-up figures include "no crimes". However, Statistics Sweden specially provided us with the number of cleared offences excluding "no crimes". There were 2,472 household burglaries and 1,560 summer cottage burglaries cleared up in 1981, and 1,691 household burglaries and 1,051 summer cottage burglaries cleared up in 1987. Hence, 13.3% of residential burglaries were cleared in 1981, and 9.29% in 1987. As in England, clearances can occur in Sweden if a person arrested for one offence admits others, or if prisoners admit additional offences (see Knutsson, 1983; Ahlberg & Knutsson, 1987). Due to a change in Sweden 1982 in the rules for prosecution of assaults taking place in private places the clearance rate of assaults increased for technical reasons in the magnitude of roughly five percent (Ahlberg & Knutsson 1992). The 16% increase in assault clear-ups reported in Table 4 is therefore somewhat "overestimated".

By multiplying probabilities or comparing figures, the probability of a survey offence being cleared can be estimated. For example, in England in 1981, the probability of a survey burglary being recorded was .470, and the probability of a recorded burglary being cleared was .277. Hence, the probability of a survey burglary being cleared was (.470 × .277) or .130. The probability of a burglary being cleared decreased by 18% between 1981 and 1987, from .130 to .107. In Sweden, the corresponding decrease was 36%, from .0384 to .0252.

Juvenile and adult convictions

In England, 24,928 persons were found guilty of residential burglary (as a principal offence) in 1981, and 20,756 in 1987, a 17% decrease (Home Office, 1982b, 1988b, Tables S1.1A, S2.1A). These figures refer to different occasions of conviction, not to the total number of charges on any given occasion of conviction, and exclude offences taken into consideration. As far as the offender is concerned, what matters is the number of occasions of conviction, not the number of charges. Each occasion of conviction produces a legal punishment for the offender, but the number of charges does not have a great effect on the severity of the punishment. Thus, a person who has committed two burglaries would be far better off to have them both dealt with on one occasion of conviction than on two separate occasions.

In Sweden, conviction figures are not available for residential burglary specifically. However, 2,143 persons were found guilty of grand theft (as a principal offence) in 1981, and 1,568 in 1987, a 27% decrease (SCB, 1982a, 1988a). Most offences of grand theft are residential burglaries. But among the grand theft convictions there is an unknown proportion of other types of theft than residential burglary. Probably, most of these are non-residential burglaries. These figures refer to different occasions of conviction, not to the total number of charges on any given occasion of conviction. The conviction figures for homicide were obtained specially from the Statistics Sweden. In 1980–82, 308 persons were convicted of homicide (including attempts), and in 1981 58.1% of the convictions were for completed as opposed to attempted homicide. Hence, the 1981 homicide estimate was (.581 × 308/3) or 59.7. A similar calculation yielded the 1987 estimate of 68.9.

The minimum age for a finding of guilt in England is 10. There were 43,432,500 persons in England aged 10 or over in 1981, and 43,916,900 in 1987 (OPCS, 1990).

Hence, the burglary conviction rate declined by 18%, from .574 per 1000 persons (aged 10 or over) in 1981 to .473 in 1987. These figures neglect the possibility of plea bargaining, where a person may be apprehended for one offence and found guilty of a less serious offence. The per capita rate of convictions for rape was based on the number of males in the population aged 14 or over, since only this category of persons could be found guilty of rape in England at this time.

The minimum age for a finding of guilt in Sweden is 15. There were estimated to be 6,737,139 persons in Sweden aged 15 or over in 1981, and 6,913,399 in 1987 (Dolmén, 1990: 125). Hence, the burglary conviction rate declined by 29%, from .318 in 1981 to .227 in 1987 per 1000 persons aged 15 or over. The per capita rate of convictions for rape was based on the number of males aged 15 or over.

In England, the number of cleared-up offences of residential burglary was 96,704 in 1981, and 126,284 in 1987 (Home Office, 1982a: 44; 1988a: 36). Hence, the probability of a conviction, given a cleared-up offence, declined by 36%, from .258 in 1981 to .164 in 1987. Strictly speaking, this is a ratio rather than a probability, because clearances refer to *offences* while findings of guilt refer to *offenders*. (As pointed out earlier, the number of offenders per offence is not shown in these tables.) However, it is convenient to present a probability in the tables. In Sweden, the probability of a cleared burglary being followed by a conviction for burglary was higher, at .531 in 1981 and .572 in 1987. These figures may be over-estimates, because the cleared offences are of residential burglary whereas the convictions are for grand theft, which can include offences other than residential burglary.

A comparison of the number of persons found guilty with the number of survey offences in England showed that the probability of conviction given a burglary was .0335 in 1981 and .0176 in 1987, a decrease of 47%. Putting this another way, there was one conviction per 29.8 burglaries in 1981 and one per 56.9 burglaries in 1987. When account is taken of the number of offenders per offence who are at risk of being convicted, the true probability of conviction given a burglary is lower: .0284 in 1981 (one in 35.2 burglaries) and .0129 in 1987 (one in 77.5 burglaries) according to Farrington and Langan (1992: 13).

For vehicle theft, robbery and assault in England, the calculation took account of the number of offences comparable to survey offences that were recorded by the police. For example, for robbery in 1981, there were 163,000 survey offences and 18,361 comparable recorded offences, out of a total of 20,282 recorded robberies. Hence, the total number of robberies was estimated to be (163,000 × 20,282/18,361), or about 180,000, and the number of persons convicted (4,132) was compared to this to obtain the probability of conviction given a robbery (.0229). This estimate could also be obtained by multiplying the probability of a robbery conviction given a clearance (.826) by the probability of a clearance given a survey robbery (.0279). Since victim survey estimates are not available in England for rape or (necessarily) for homicide, the probability of conviction given an offence in these cases was based on the number of recorded offences.

The calculations were similar in Sweden. For example, comparing 2,143 persons found guilty of burglary in 1981 with 105,100 burglaries, the probability of conviction given a burglary was .0311, showing that there was one conviction per 32.1 burglaries. The corresponding figures in 1987 were .0211 and one in 47.3 burglaries. As for England, the rape and homicide figures were derived from recorded offences.

Adults sentenced to custody

The probability of being sentenced to custody, average sentence length, and average time served is only estimated for adults (those aged 17 or over in England and those aged 18 or over in Sweden). It is difficult to

obtain offence-specific estimates of these quantities for juveniles in England. For example, English juveniles can be given "care orders" that commit them to the care of local authority social workers, who may decide to send them to more or less secure institutions (Farrington, 1984). However, the number of different types of offenders sent to secure institutions each year, and the average time they spend there, are not known. Very few Swedish offenders under age 18 were sentenced to custody. For example, in 1981, only 5 out of 378 persons aged 15–17 convicted of burglary (grand theft) were sentenced to custody, compared with 927 out of 1,765 persons aged 18 or over.

In England, sentenced adults could go to prisons, borstals, or detention centres in 1981, and to prisons, youth custody centres, or detention centres in 1987. Borstals, youth custody centres, and detention centres were for persons under age 21, and in 1988 they were renamed young offender institutions (Home Office, 1989b: 2). A borstal sentence was indeterminate, with a minimum of six months and a maximum of two years (in 1981). It was replaced by a fixed youth custody sentence in 1983. A detention centre sentence was for a maximum of 6 months in 1981 and 4 months in 1987. In addition, beginning in 1982, adults aged 21 or over could be given a partly suspended sentence, which meant that they served the first part of their sentence in prison and then had the remainder of their sentence suspended; it could be activated if they were reconvicted during its term.

In England, the number of adults found guilty of residential burglary was 16,659 in 1981 and 16,826 in 1987. Of these, 7,465 (44.8%) were sentenced to custody in 1981, and 9,157 (54.4%) were sentenced to custody in 1987. Taking account of the population aged 17 or over (37,882,700 in 1981 and 39,367,400 in 1987), this represented an increase of 18%, from .197 to .233 per 1000 adults. The probability of a survey burglary leading to a custodial sentence (.0150 in 1981) was calculated by multiplying the probability of a survey burglary leading to a conviction (.0335 in 1981) by the probability of a conviction leading to a custodial sentence (.448 in 1981). This calculation implicitly assumes that the probability of a survey burglary leading to a conviction is the same for juveniles and adults. The probability of a burglary leading to a custodial sentence decreased by 36%, from .0150 in 1981 to .0096 in 1987. Equivalently, 1 in every 66.6 burglaries led to a custodial sentence in 1981, and 1 in every 104.4 in 1987. Expressing this in another way, the average burglar could commit 66.6 burglaries for every custodial sentence in 1981, and 104.4 in 1987.

The number of adults sentenced to custody for homicide in England includes those (26 in 1981 and 13 in 1987) who received a secure (restricted) hospital order under the Mental Health Acts 1959 and 1983. It was thought to be more realistic to include these as custodial sentences. The number of secure hospital orders was negligible for all other types of offences. The custody rates are calculated per 1000 males for rape.

In Sweden, the number of adults found guilty of burglary (grand theft) was 1,765 in 1981 and 1,410 in 1987, a decrease of 20%. Of these, 927 (52.5%) were sentenced to custody (prison) in 1981, and 835 (59.2%) were sentenced to custody in 1987. (These figures were obtained specially from Statistics Sweden.) Taking account of the population aged 18 or over (6,366,292 in 1981 and 6,575,520 in 1987), this represented a decrease of 13% in the custody rate, from .146 to .127 per 1000 adults. Using the previous estimate of the probability of a burglary being followed by a conviction (.0311 in 1981 and .0211 in 1987), 1 in every 61.2 burglaries led to a custodial sentence in 1981, and 1 in every 80.1 in 1987. The probability of a burglary leading to a custodial sentence decreased by 23%, from .0163 in 1981 to .0125 in 1987. The number of adults sentenced to custody for homicide in 1980–82 and 1986–88 was obtained spe-

cially from the Statistics Sweden. Unfortunately, the figures included completed and attempted homicides. However, the figures for completed homicides were obtained for 1981 and 1987. In 1981, of 60 completed homicides, 31 were sentenced to prison and 28 to a secure hospital, making 98.3% sentenced to custody. In 1987, the corresponding percentage was 98.1%. The number of adults sentenced to custody in 1980–82 and 1986–88 for completed homicides was estimated from the percentage sentenced for completed homicides in 1981 and 1987.

Sentence length and time served

In England, the average sentence length and average time served are not routinely published for specific categories of offences. Indeed, the average sentence length and time served after sentence to initial release were first provided for males and females aged 21 or over in the 1986 Prison Statistics (Home Office, 1987: 77), and retrospective information was then given for the previous 10 years. These quantities were first provided for males and females aged under 21 in the 1988 Prison Statistics (Home Office, 1989: 76) and retrospective information was then given for the previous four years. However, the Home Office kindly supplied us with offence-specific figures for persons released in 1982 and 1988 (Childs, 1990). These years following 1981 and 1987 were the most relevant, because the average time served for these serious offences was about 7 months for 1982 releasees and 8 months for 1988 releasees. Hence, on average, a person sentenced to custody in one calendar year would have been released in the following calendar year. The figures for burglary do not distinguish between residential and non-residential offences.

The 1982 releasees included some who were given the indeterminate sentence of borstal, and the Home Office provided us with offence-specific figures for average time served in borstal (Childs, 1990). For example, the average time served in borstal by burglary offenders released in 1982 was 8.4 months. In 1981, a time served of 8.4 months would have corresponded to a fixed sentence of 12.6 months, since all short-term fixed sentences carried one-third remission. Hence, the average sentence length of burglars given borstal in 1981 was assumed to be 12.6 months. Adding 17,530 burglars serving fixed sentences averaging 10.5 months to 3,684 burglars serving borstal sentences averaging 12.6 months yielded an overall average sentence length for burglary in 1981 of 10.9 months.

The figures supplied by the Home Office included juveniles in penal institutions, but their numbers would have been too small to have much effect on the averages. They do not include offenders given secure hospital orders. Similarly, the figures do not include the average time served after parole revocation, but taking account of it would make a negligible difference to the estimates (see Farrington & Langan, 1992: 43).

It is impossible to achieve exact comparability between the English Criminal Statistics and Prison Statistics, partly because of slight differences in classifications of offences and partly because the Criminal Statistics do not show the results of later appeals against sentences. Some people may already be in prison when they are sentenced to custody for a different offence. Also, some people are admitted to prison when they are unconvicted (on remand), others when they are convicted but unsentenced, and others when they are sentenced. Any time spent in prison before a sentence counts towards the time that has to be served (in both England and Sweden). Hence, some people shown as receiving a prison sentence in the English Criminal Statistics will not be admitted to prison after sentence, because they are remanded in custody beforehand and receive a sentence that they have already served. The Home Office figures do not include the average time spent on remand before sentence. This is not routinely published, but the figures for 1987 releasees were included in the Report of the Carlisle Committee (1988: 147).

These figures showed that, on average, about 10% of a prisoner's sentence was spent on remand. However, no attempt was made to adjust the figures for time spent on remand.

For burglary in England, the average sentence length was 10.9 months in 1981 (for 1982 releasees) and 15.1 months in 1987 (for 1988 releasees), a 39% increase. However, the average time served of these releasees increased only slightly, from 6.3 months to 6.6 months. The proportion of a burglary sentence that was served in prison decreased from 58% to 44%. By multiplying the average time served by the probability of receiving a custodial sentence after a conviction, the average time served per conviction was calculated. For example, in 1981, 6.3 months (× 365/12) translated into 191.6 days; multiplying by .448 led to the estimate of 85.8 days served per conviction for burglary. The number of days served per offence was then estimated by multiplying this figure by the probability of a conviction following an offence (.0335 for burglary in 1981), which yielded the figure of 2.88 days served per burglary. The average number of days served per burglary decreased in England from about 3 (2.88) in 1981 to about 2 (1.92) in 1987. Roughly speaking, the average time served for burglary in each custodial sentence was of the order of 200 days in both years, and the number of burglaries committed per custodial sentence increased from about 67 in 1981 to about 100 in 1987.

In estimating sentence length and time served in England for homicide, it was necessary to take account of life sentences. (A negligible proportion of other categories of offenders received life sentences.) The Home Office kindly provided offence-specific figures for the average time served by lifers first released in 1982 and 1988 (Fuller, 1990). The average time served by prisoners serving life sentences for homicide offences was 10.5 years in 1982 and 10.1 years in 1988. It is known that prisoners serving long fixed sentences (over 10 years) typically serve about half of them (Home Office, 1989: 94). Hence, for the purposes of calculating average sentence lengths, life imprisonment was treated as equivalent to a 20-year sentence.

At the time of writing, it is not possible to know exactly how long prisoners sentenced to life in 1981 or 1987 will serve. The estimates shown in Table 6 are based on the number of homicide offenders sentenced to fixed or life sentences in each year. For example, in 1981, 138 of these offenders were given life and 152 were given fixed sentences. The lifers were treated as having an average sentence length of 240 months (20 years) and an average time served of 126 months (10.5 years). Fixed sentence homicide offenders released in 1982 had an average sentence length of 38.2 months and an average time served of 17.0 months. Hence, the weighted average sentence length for these 290 homicide offenders was 134.2 months, and their weighted average time served was 68.9 months. A similar calculation yielded the 1987 estimates.

In Sweden, the average sentence length for burglary (grand theft) was 9.3 months in 1981 and 9.6 months in 1987 (SCB, 1982a, 1988a). The average time served is not published in official statistics. However, for sentences less than 2 months, the whole time is served. For sentences between 2 months and less than 2 years, two thirds of the time was served before 1983, and half of the time is served now in almost all cases. For sentences of 2 years or more, the time served is determined on an individual basis, with a minimum of half and a maximum of two-thirds (see Commentaries to the Swedish Penal Code, vol. 3: 57). We assumed that the average time served in these cases was half-way between these limits, or 58%. Statistics Sweden provided us with the distribution of sentence lengths for each type of offence. From knowing how many sentences were of less than 2 months, between 2 months and less than 2 years, and 2 years or more, we estimated the average time served. For burglary (grand theft), the average time

served came to 5.5 months in 1981 and 4.5 months in 1987.

In estimating sentence length and time served in Sweden for homicide, it was necessary to take account of life sentences. As in England, a negligible proportion of other categories of offenders received life sentences. Life sentences were treated as equivalent to a 15-year fixed sentence, because they are usually transformed into sentences of this length. For example, calculations based on data presented by Rydgren (1989) show that the average time served by life sentence prisoners in Sweden was 8.25 years, which is quite close to our estimate of 58% of a 15-year sentence. The average sentence length and estimated time served for completed homicides in 1981 and 1987 were obtained specially from Statistics Sweden. They apply only to offenders sentenced to prison, not to those sentenced to secure hospitals, and hence are based on very small numbers and subject to fluctuation from year to year.