

Measuring crime: trends and coherence in crime statistics

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In cooperation with the Research and Documentation Centre of the Ministry of Justice, Statistics Netherlands has remonitored for the period 1980–1992 the trends in crime prevalence and in the corresponding reactions of the criminal justice system. The investigation compares data which stem from different sources and pays special attention to the coherence between findings.

1. Introduction

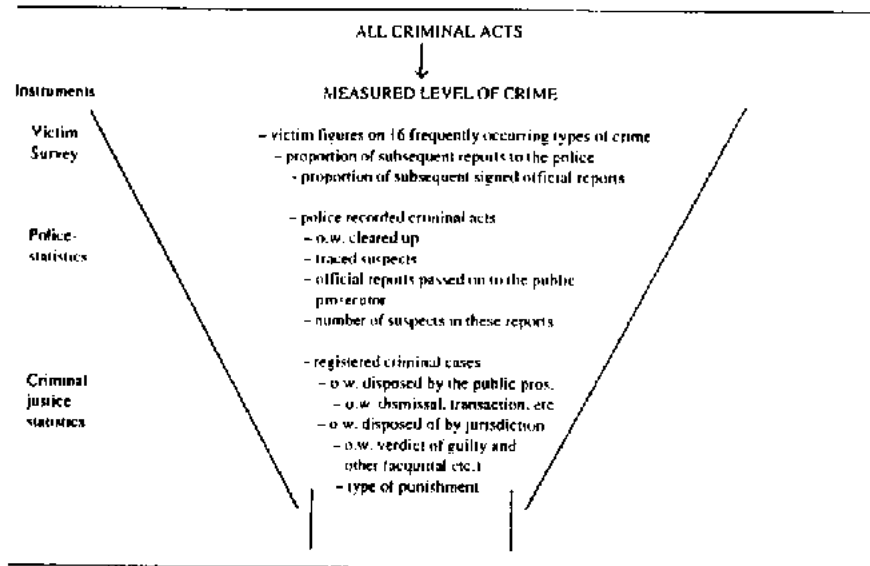
In the Netherlands gathering information on the level, character and development of crime patterns represents a long tradition. Statistics on crimes brought to justice and the verdicts they lead to have been compiled for over a century. In 1935 data on notifications at the police stations started to be registered centrally. In the 1970s the existing crime statistics were complemented by a regular Victim Survey in order to approximate the 'true' crime rate even closer.

Survey response, police records and procedural registers have thus become the three main sources for data on crime rates and the response of the penal system. Together they cover all stages between crime and punishment, from the effects to victims to the ultimate court decisions. Since these sources involve separate approaches, different aspects of the same phenomenon are measured, but the findings can be expected to concur to a certain extent. In practice however the findings often do not seem to correspond. Discrepancies originate from differences in definitions, methodology and scope and they are inherent to the statistical sources (see Geerlof, 1987).

2. Penal trajectory

The available crime data refer to subsequent phases of the penal trajectory, which runs from initial criminal acts to final verdicts and detention. In theory the intermittent measurements can be schematized as follows.

1. Phases of the penal trajectory



All acts punishable by law add up to total crime committed. The full level of these *indictable* offences may be obfuscated because victims are absent or unaware. For some specific types of crime this is rather the rule than the exception, e.g. drunken driving and drug abuse. Also tax and social security fraud and certain environmental offences tend to be underreported.

Crime becomes more measurable as soon as evidence can be obtained from direct victims. Statistics Netherlands uses its *Victim Survey* to approximate a nation-wide victimisation level. This sample survey covers the population of 15 years and over. The questionnaire includes items which tally the experiences of respondents with 16 frequently occurring types of crime such as theft, vandalism, violence and sexual harassment. The aim is to quantify the victim rates in the year before the survey and to

unveil police notification patterns. From 1980 onwards this survey was held annually. The data are used to estimate the total number of criminal acts, crimes reported to the police and crimes of which the notification is signed by the victim. The survey focuses on crime against private persons; items on criminal acts against businesses and institutions are not included. (Buiel, 1986)

The *Police Statistics* compile police registration data such as crimes notified to and recorded by the police, criminal cases investigated and solved, suspects identified as well as indictment reports forwarded to the public prosecutor and the number of persons included in those reports. These statistics use as a source integral enumerations received from police units. All types of crime are covered, including murder and other less frequent crimes. Excluded are those criminal cases dealt with by special law enforcing agencies e.g. referring to economic criminal law and tax law (Van Kalleveen, 1992).

The administration of the public prosecution is the source for statistical information on their penal procedures and jurisdiction patterns. The resulting *Criminal Justice Statistics* contain data on criminal cases forwarded by the police and their subsequent disposal by prosecution and judicial authorities.

The Victim Survey, Police Statistics and Criminal Justice Statistics each cover a segment of the penal trajectory. The number of cases dwindles in subsequent phases, also because these statistics approach different units of statistical measurement. The focus shifts from victims to offences and subsequently to suspects/offenders. This complicates the statistical coherence because an offence often has more victims and offenders often commit more than one offence. The opposite is also possible: respondents turn out to refer to more than one victimisation and crime often is perpetrated collectively.

3. Trends

The Victim Survey

In the first five years of the period 1980–1992 the estimated total number of crimes increased from 5.8 million in 1980 to 6.9 million in 1984 (+16%). Afterwards the total number of crimes stabilised. The number of criminal acts reported to the police and the number of crimes in which an official report was signed grew faster. The number reported to the police increased from 1.8 million in 1980 to 2.2 million in 1992 (+23%). The crimes for which an official report was signed increased even more, from 950 thousand in 1980 to 1.6 million in 1992 (+72%).

Police Statistics

Between 1980 and 1992 the number of recorded crimes rose by 80 percent, from 0.7 million to 1.3 million. This strong increase mainly took place before 1985. After 1984 the number of recorded crimes was still growing but at a much slower pace. The number of crimes cleared up by the police is more constant and even decreased a little in the last few years. As a result the clearing rate fell from 30 percent in 1980 to 19 percent in 1992. The number of suspects and the number of persons in official reports passed on to the public prosecutor follow roughly the same trend as the number of crimes cleared up. In 1992 242 thousand crimes (19%) were cleared up.

Criminal Justice Statistics

In the 1980s criminal cases were more frequently followed by some type of penal procedure. About 200 thousand cases were processed every year. The growth in the number of transactions was spectacular, due to the 1983 extension of the possibility to use this type of disposal. In 1990, 16 percent of all cases ended with a transaction. Simultaneously with the growing number of transactions, the share of dismissals decreased from 40 to 31 percent. About one third of all criminal cases was brought before a judge, of which 91 to 96 percent lead to the verdict guilty. In the period 1982-1990 the number of persons sentenced to imprisonment was stable but the average period of detention almost doubled.

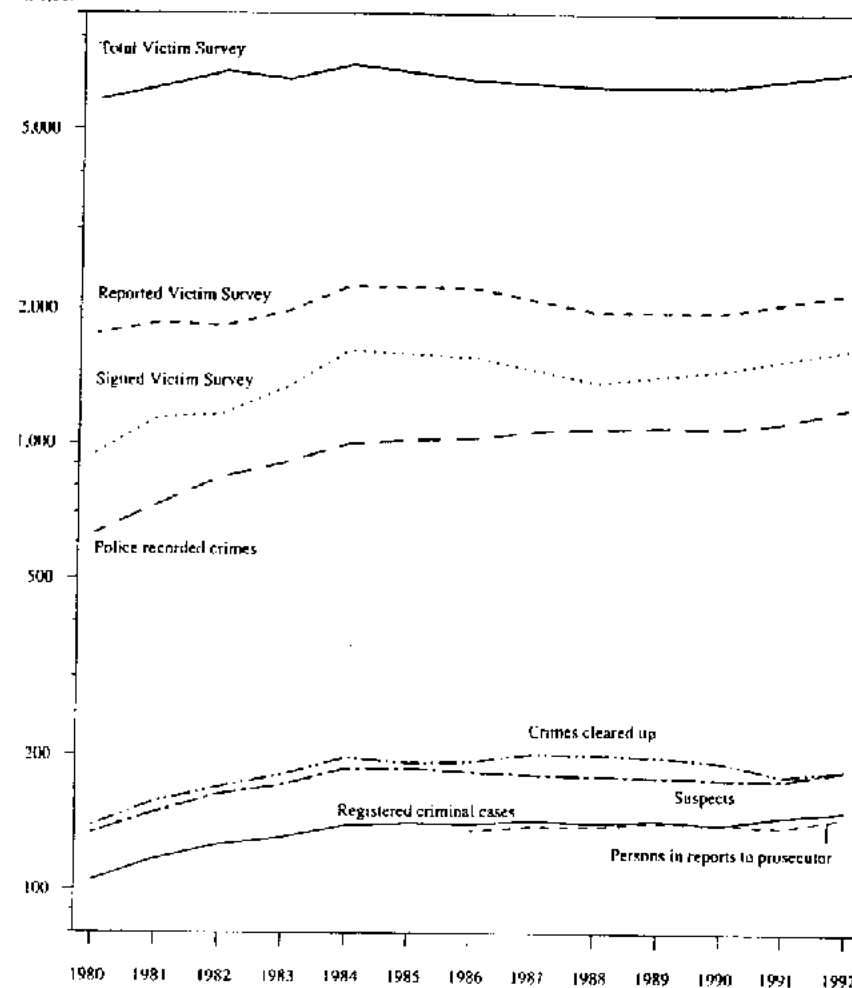
4. Coherence

In our analysis the coherence of crime statistics is tested by comparing trends. The focus is on a dynamic comparison (developments) instead of a static one (levels). In fact differences in the aggregate levels as found in the various approaches are considered structural and constant over time. The transitions however between the approaches can be compared.

- * The estimated number of signed official reports as found by the Victim Survey can be juxtaposed to the number of police recorded crimes as aggregated in the Police Statistics. This can be done for all types of crime mentioned in the Survey items and categorized in the source files of the Police administrations.
- * The number of persons in the official reports which the police forward for prosecution, as aggregated in the Police Statistics, are set alongside the number of criminal cases registered by the public prosecutor as reported in the Criminal Justice Statistics.

The results (figure 1) show that the 1980-1982 period can be broken down into two parts. Up to 1984 there is a rather strong increase in the number of crimes. After 1984 there is a more stable development. The breaking-point in 1984 appears in all three statistics.

1. Coherence of statistics
Total offences (as surveyed, comparable)
(logarithmic scale)
x 1,000



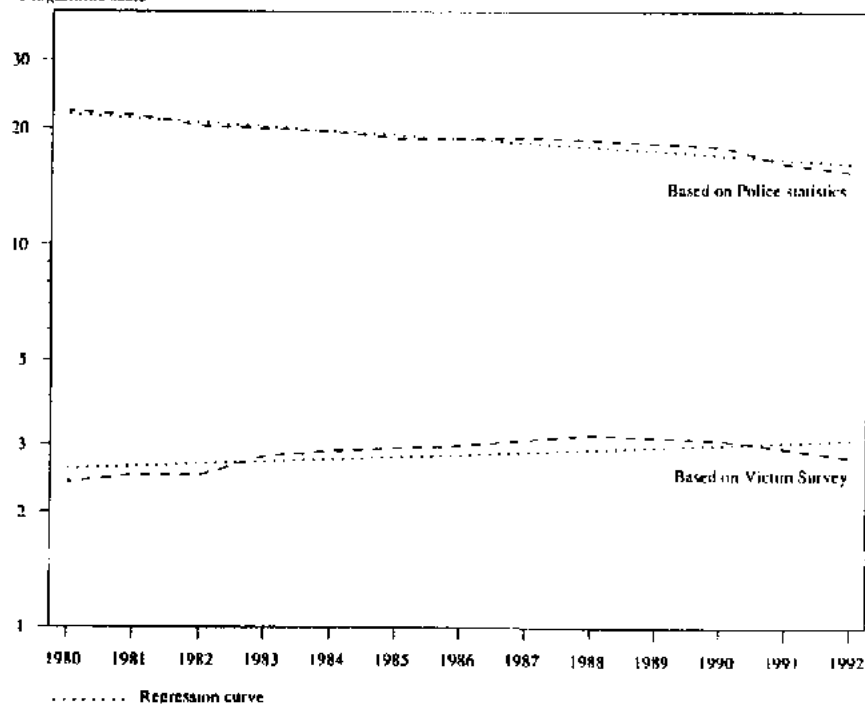
Also a decrease of the dark number (the unrecorded part of crime) can be found. The share of crimes for which an official report is signed increased from 16 percent of the total number of crimes (as surveyed) in 1980 to 24 percent in 1992. This implies that part of the increase in police recorded crimes is due to a better registration by the police instead of resulting from a rise in the 'real' crime rate. Indications for a real rise would have been detected in the Victim Survey.

The fact that the share of crime registered by the police has increased, does have an unintended consequence for the evaluation of the ever decreasing clearing rate. Because the newly added crimes are mainly from categories which are difficult to clear, an increase in registered crime doesn't automatically imply a subsequent growth in clearances. Thus computed on base of the number of police recorded crimes the clearing rate is decreasing. The number of clearances related to the (much higher) total estimated number of crimes, however, shows a more or less stable clearing rate (figure 2).

The general trends as revealed in the data of Police and Criminal Justice Statistics concur quite coherently. The number of cases forwarded for prosecution is some 7 percent lower than the number of criminal cases registered by the public prosecutors. This inconsistency stems partly from the fact that criminal cases arrive there also from law enforcing agencies other than the regular police. The other part may be attributed to flaws in registering by the regular police.

2. Crimes cleared up, percentages based on Police statistics and on Victim Survey

% logarithmic scale



5. Categories of crime

When crime rates are broken down by main categories (figure 3-6) the findings of Victim Survey and Police Statistics agree especially on the impact of property crimes. In both approaches they predominate and determine the general trend. The general breaking-point of 1984 is clearly due to the influence of property crime numbers.

For other categories of crime the estimated number of signed reports is much lower. Because of the relative low number of victims in the sample, rather broad confidence intervals have to be taken into account around the estimates. For vandalism (malicious damage) and for traffic offences (hit-and-run accidents) the concurrence is reasonable. Only for some years the Victim Survey trends deviate clearly from the trends as surfacing in Police Statistics.

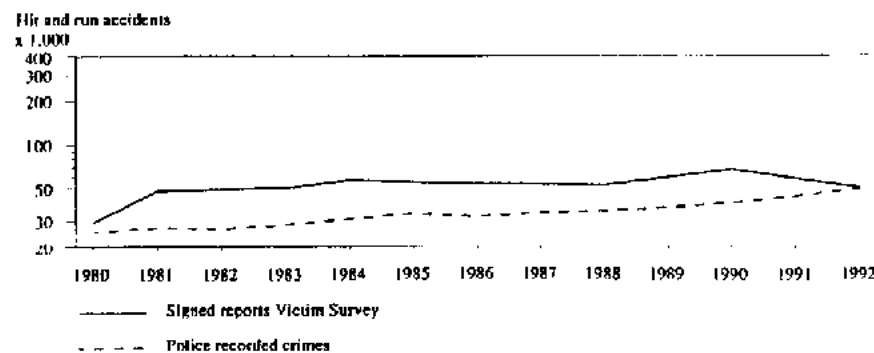
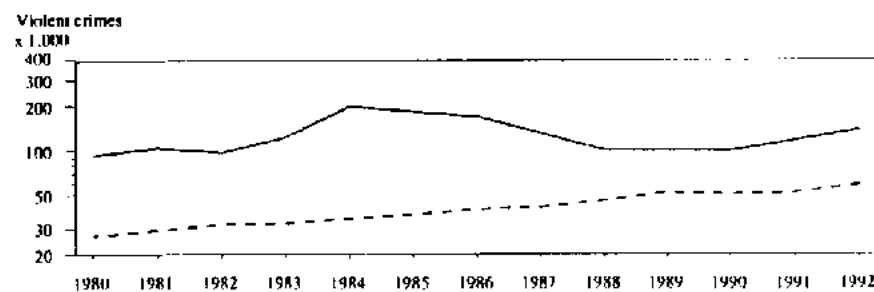
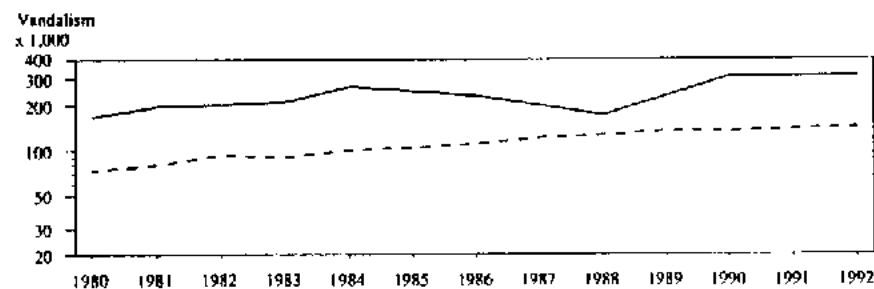
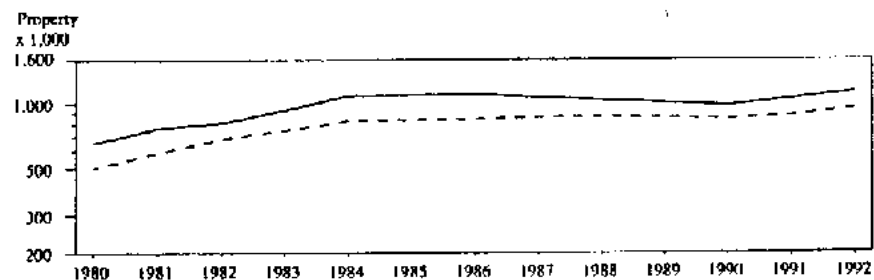
For violent crime categories such as assaults/threats and sexual harassment the correspondence is rather low. The Victim Survey uncovers a rather high prevalence of violent crimes. Not clear is, however, what exactly is measured and how serious the criminal acts mentioned in the survey are compared with the violent crimes recorded by the police. The estimate of the violent crime rate originating from the surveys may reflect more the perceived than the real prevalence of these crimes.

In the case of property crimes Police Statistics and Criminal justice statistics concur also rather well (figure 7-10). Also the share of violent crimes tend to correspond relatively well until in 1992 the trends start to diverge. For traffic offences the discrepancy between police and public prosecution data is growing over time.

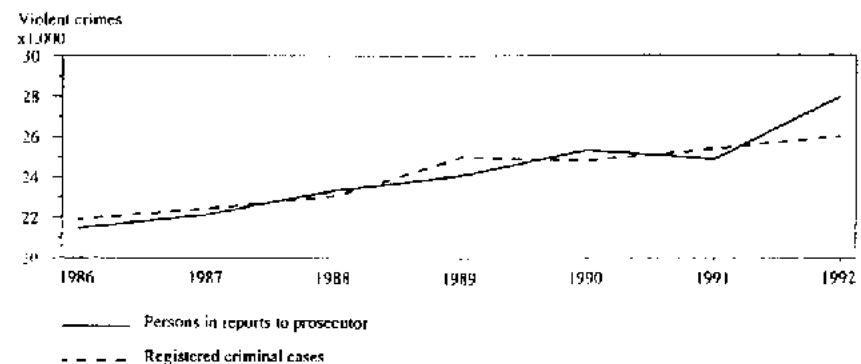
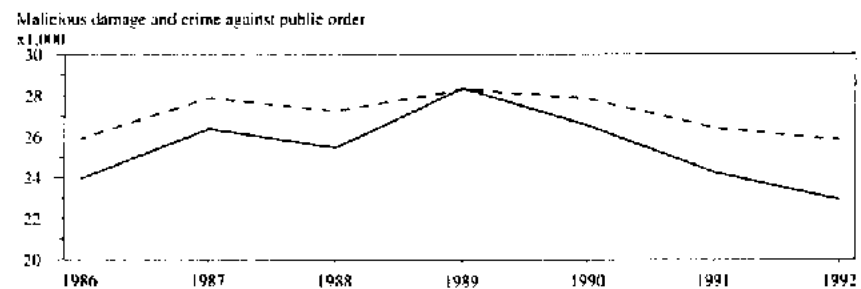
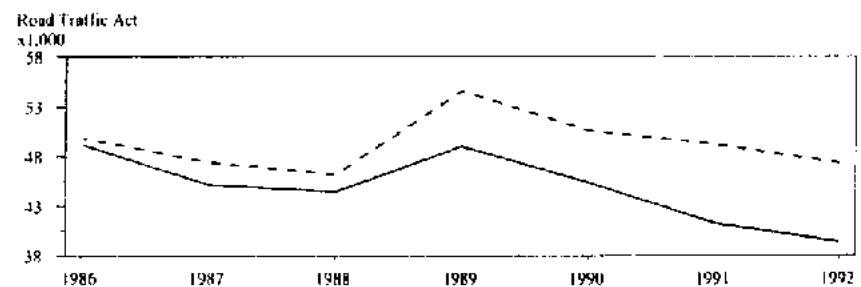
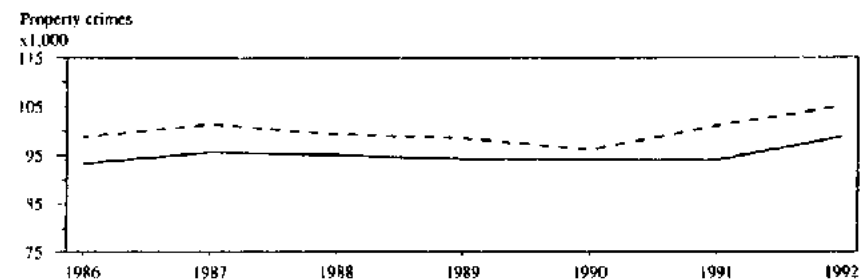
6. Crime in figures

Table 1 compares for the year 1992 the crime rates as derived from the three statistical sources. This accounting scheme is based on balanced estimates. Intersections between sources are juxtaposed. The number of criminal acts estimated from the survey response diminishes greatly, because victims often do not go to the police. If they do in many cases no official report is made up. The Victim Survey and the Police statistics correspond on about 1.2 million crimes. Their discrepancy amounts to 0.4 million. This gap is in reality somewhat larger because crimes against businesses and institutions do not surface as much in the survey as in the Police Statistics. About 80 percent of the police recorded crimes are not cleared. Of the suspected offenders 40 thousand are not sent by the police to the public prosecutor. The other 200 thousand are registered by the public prosecutor. The effectiveness of the police and justice apparatus can only be judged tentatively by these findings. One influential circumstance is that not all crimes are equally serious. Minor offences such as bicycle theft or vandalism turn up life size in the survey but do

3. Comparison Victim Survey and Police Statistics



7. Comparison Police Statistics and Criminal Justice Statistics



seldom to follow up. The opposite is true for serious offences they remain in the trajectory. Also the units of measurement change in the course of the trajectory. The perspective slides from offences to offenders. By hypothesizing a one-to-one relation the figures are made comparable. This is allowed because the overall Police figures show that the number of cleared offences equals the number of suspects. Criminological research however indicates that a small number of offenders is responsible for most of the criminal acts. It may be that offenders are caught and prosecuted only for some of their crimes, leaving the others unprocessed. The criminal justice system leaves therefore less offenders scot-free than the scheme indicates on first sight. The chance that the police catches someone for a single offence may be for instance five percent. In the course of twenty of such offences the chance to be caught at least one time is increased to 64% $(1-(19/20)^{20})$ (Bergluis et al. 1994).

7. Evaluation

Comparison of the three approaches leads to the conclusion that a general correspondence exists between crime statistics. In the period 1980-1992 trend patterns for similar variables correspond, especially for the predominant category of property crimes.

Table 1. Overlaps and discrepancies between levels of Victim Survey estimates (VS), Police Statistics (PS) and Criminal Justice Statistics (CJS), balanced, 1992*

	VS	PS	CJS
< 1 000			
Total	6.698	1.259	212
Only in Victim Survey			
Not reported	4.536		
Not reported signed	533		
Difference VS - PS and CJS	421		
In VS and PS			
No suspect	1.016	1.016	
Not sent to the prosecutor	40	40	
Only in Police Statistics			
No suspect		4	
Not sent to the prosecutor		1	
In VS, PS and CJS	146	146	146
In PS and CJS		53	53
Difference PS-CJS			
in VS and CJS	5		5
Only in CJS			9

*): Supposed is that one offence equals one offender. Included all indictable offences according to the Penal Code, Road Traffic Act, Drugs Act and Weapons and Munitions Act. Excluded Economic Offences Act, Tax Law, Military Law and some other Acts.

In absolute figures there is still a notable gap between survey based estimates of the number of crimes officially reported and signed and the number of crimes indicated by the police records. Although an underreporting by police administrations may not be excluded, the gap is most likely caused by overestimations inherent to the survey approach due to definitory inconsistencies, double counting, memory effects (forward time telescoping) and interaction bias (socially desirable answers) etc.

Both Victim Survey and Police Statistics data can be used as crime rate indexes. It's important to bear in mind that both approaches collect data for differing purposes, from a different perspective (retrospective memories vs. recorded entries) and on subsequent segments of the penal trajectory. One of the main reasons to initiate the Victim Surveys was dissatisfaction with the manner in which police recordings are able to monitor crime levels, trends and patterns. They fall short if detailed insight is needed on the prevalence of minor criminal acts. Victim Surveys allow for victimisation rate estimates prior to the reporting and registering procedures in which public and police filter the occurrence of criminal acts. Survey findings are closer to the 'true' crime rate because the unreported and unregistered part of crime is also included. The police recorded crime reflects also the police workload. The number of suspects they report can be considered as police 'production figure'. Compared to the Victim Survey Police Statistics cover more types of crime. As a rule the heavier crimes are more consistently registered than the less serious types of crime.

The Victim Survey is a valuable complement to the Police Statistics because it reveals information necessary for a proper judgement of the police data. When police data show recorded crimes on the increase this may to a considerable extent be the result of a more exhaustive registration. It is worthwhile realizing that police recorded crime cannot only be rated to reflect criminal trends but also the attitude of the public and the police towards crime. Different factors may be involved.

- * In the 1980s a growing consciousness of the effects of crime on society stressed the importance of registration in order to 'visualise' the crime problem.
- * For policymaking recording crime and police activities grew also in importance. Automation programmes allowed for a better measurement of police performance. Resulting figures were used to allocate manpower and means.

As revealed by the comparison with the Victim Survey the Police Statistics have become more exhaustive. Vis-a-vis the Criminal Justice Statistics it can be concluded that police qualifications of crime has been shifting over time, especially in the case of violent crime. Police Statistics register a greater increase in the more serious crime categories, although the overall crime trends in both statistics run parallel. Bag-snatching, for instance, appears in the present statistics more often as violent theft while before police qualified this event as a simple theft. The Police Statistics turn out therefore to overrate the growth of the more serious crime categories.

8. Conclusion

This analysis first of all emphasizes the fact that crime figures and rates need to be reviewed critically. There are various statistical approaches each having their own scope, range and merits. The resulting statistics are limited and may suffer from some serious weaknesses. Only parts of the criminal acts in 'true reality' can be detected. The approaches show a selective sensitivity to particular types of crime. Comparable remarks have been made for crime statistics of England and Wales. Lewis (1992: 15) concludes: '(...) sources are not alternatives but rather complement each other. Even when they are used together we do not obtain anything like a full picture of crime. Indeed, the situation has been likened to a dark stage with two spotlights which illuminate part of the action extremely well while other areas remain in semi-gloom.'

It is also important to statisticians to clarify the crime 'rate', he is dealing with. If the Victim Survey or Police Statistics are used to index developments in crime, a series of considerations has to be taken into account. For the sample-based Victim Survey it is advisable not to absolutize the estimated levels. For the recorded crime the level is also influenced by changes in crime reporting and registration procedures. To a large extent these limitations are inherent to crime statistics.

Nevertheless this analysis shows trends in crime statistics do concur. This finding can be used as a premise for further reaching attempts to coherently integrate crime statistics. Several blind spots still remain. The challenge of crime statistics is to arrive at a more extended and integrated coverage of the field.

References

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¹⁾ J.G.C. Keeter en J. Jansen-Tas: *Criminaliteit en strafrechtelijke reactie. Ontwikkelingen en samenhangen* (Criminality and the reaction of the penal system. Trends and coherence.), 1994