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## NEW THINKING IN CRIMINAL STATISTICS

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Throughout the world there is evidence of new thinking in social defense and criminology. There is new thinking, too, in the fields of statistics and population accounting. Many of the concepts developed in economics are having an influence on other aspects of social studies; the new concepts of operations research, theory of games, decision theory, communications and information theory are not without an impact upon many and diverse fields of inquiry.

The recently published (1964) work of Sellin and Wolfgang, *Measurement of Delinquency*, makes a major contribution to the new thinking in crime measurement by showing that there are concepts in criminology which may be scaled. But before they could develop this line of analysis they had to clear away many misconceptions of the past. While their approach is original, they are not alone in developing concepts of this kind. Indeed a new general line of thinking to which their work represents a major contribution may be seen in many Western countries.

The British Home Office and the Scottish Home Department recently established Departmental Committees to consider revision of *criminal statistics*. Although these Committees have not yet reported, permission has been granted for the publication of a paper presented to them by the author. At that time he was Deputy Director of Research in the Home Office, but the report was presented as a private and personal contribution at the request of the Committee. It may be of interest to make this document available in the same form as it was presented, but to relate some of the concepts to the work of Sellin and Wolfgang. It should be noted, however, that the British contribution did not involve experimental trials of ratings which are a central feature of the American book, but there are other features which may make

the comparison of the two approaches of interest to others concerned with problems of crime measurement.

Following is the report which I prepared for *The Departmental Committee on Statistics*:

### A NOTE ON STATISTICS OF CRIME, CRIMINALS AND COURT DECISIONS

1. The writer is of the opinion that the main problems concerning criminal statistics are not matters of detail but relate to quite fundamental concepts, and that ends must be closely examined before means may be considered.

2. Criminal statistics should provide basic information in many fields of study and guidance in many administrative and legal processes. Consideration of the ends in any detail would involve a study of the concepts of several disciplines and the functions of the departments concerned. Such detailed analysis cannot be a practical consideration at this time. It is suggested, therefore, that the possibility of sequential change to meet changing needs should be specifically planned into any system that may be developed.<sup>1</sup>

3. This paper is divided into three parts. In the first some brief notes on basic concepts are set out. In the second the implications of the concepts are related to what appear to be the more important operational questions. The third section puts forward some opinions on possible outlines of solutions.

#### BASIC CONCEPTS

4. The primary function of criminal statistics is to provide quantitative classified information re-

<sup>1</sup>The rating scale of Sellin and Wolfgang meets this criterion, as well as allowing for geographical differences in the concept of "seriousness" of crime.

garding both (a) crimes, and (b) criminals. That is to say, the data must cover: (a) descriptions of *events* which are identified as breaches of the law (as defined at the time and place of the event);<sup>2</sup> and (b) *decisions* made by authorised persons regarding *individuals* who are identified as associated with the criminal act, and, where possible, the consequences of such decisions.

5. The information may be presented in regard to *persons* or *events*, or persons x events, but it is essential that data relating to criminals (persons/decisions) are not confounded with data relating to crimes (events). It should, however, be possible to relate events to persons without confusion.

#### The Concept of Crime

6. It is doubtful whether it is legitimate to discuss the concept of crime as though it was something which can be measured or counted. Certainly it is not possible to make valid inferences from any counts or measurements without reference to the changing norms of acceptable and unacceptable behaviour in different social groups and at different times.<sup>3</sup> It is of course, possible to define crime as the summation over ( $\Sigma$ ) the separate definitions of proscribed behaviour encoded in some form of law. The boundaries of different definitions do not, however, have a constant relationship to the consensus of public opinion or even of "informed public opinion". Thus, reported crime and recorded crime will differ and the gap between the two collectives will change as behaviour, which is perceived as socially acceptable or unacceptable, changes either in relation to space or time factors.

7. Socially acceptable events may, at some times and places be illegal (crimes), but these events will not be reported and will seldom stand any chance of being recorded. Further, socially unacceptable events which are not indictable offences, although reported, will not in present conditions be recorded as crimes.<sup>4</sup>

<sup>2</sup> The concept of an "event" is stressed by Sellin and Wolfgang, (see Ch 9) for their purposes, as they remark, "... *events* [their italics also] not delinquent juveniles, ... the major focal point for establishing an index"

<sup>3</sup> One of the more unexpected results of Sellin and Wolfgang's work is the extreme similarity between assessments of their events by different sectors of society. In view of their findings, this point, although still applicable, may not be so serious as it was previously considered to be.

<sup>4</sup> In England and Wales, the figures usually regarded as the index of crime are, in fact, "Indictable Offences known to the Police".

#### The Concept of Criminal

8. There is a possibility that some of the confusion of criminological concepts is semantic in origin. The term "criminal" is used both as an adjective and as a noun, but the relationship between the two meanings is not as close as is usual between similar adjectives and nouns. It may be admitted by most persons that shoplifting is a "crime" (criminal act), but the one-time shoplifter is not regarded as a criminal; or if under prompting this is admitted, not as a "typical criminal".

9. Confusion exists between the concepts of morals, crimes and socially dysfunctional behaviour. Clearly "Criminal Statistics", as they exist at present, cannot be used to form any legitimate inferences about moral factors.<sup>5</sup>

10. In the remainder of this paper the term "criminal" will be used only as a *noun* to indicate a *person*, "crime" will be used only as a *noun* to describe an *event* defined by the law as such. Where adjectives are needed, other terms will be selected, but if necessary to make the meaning clear, the adjective "criminal" will be given in parenthesis. The term "Criminal Statistics" will not be used except to refer to the publication of that title, and quotation marks will be used. We shall refer to "statistics of crimes", "statistics of court procedures" and other types of statistical data as may seem appropriate.<sup>6</sup>

#### Information and Utility

11. Dr. W. H. Hammond has represented that the test of statistical information is utility.<sup>7</sup> This must be agreed. Indeed there is no meaning to the concept of information except with respect to a purpose. In administrative statistical data the value of information seems best to be assessed by tests related to decision making. The question, "What does the knowledge of fact  $x$  make it possible to do (decide) that would be impossible or impracticable without the knowledge of  $x$ ?", provides a measure of utility. The difference between the utilities of the decisions is identically equal to the utility of the information  $x$ . That is to say, if the same decision would be made with a

<sup>5</sup> Wilkins, *The Measurement of Crime*, BRIT. J. CRIMINO (April, 1963).

<sup>6</sup> This point must be taken as agreed quite generally in theory. Although Sellin and Wolfgang do not use the same type of point of English usage, the separation of the concepts is basic to their work.

<sup>7</sup> Unpublished paper by Dr. Hammond of the Home Office Research Unit.

knowledge of  $x$  as without that knowledge, the utility of the information  $x$  is zero. The same type of measure may be used for assessment of the utility of degrees of precision. Thus, if a decision could be made with the same level of confidence, given either  $x \pm 5\%$  or  $x \pm 10\%$ , then the cost of the reduction of the error term from  $\pm 10\%$  to  $\pm 5\%$  is a waste of resources. Similarly if information at intervals is as good a guide to decisions as continuous information, the cost of continuous collection should not be entertained.

12. Unfortunately, needs may arise in the future for information being generated today, but these needs and the attendant utilities may not now be predictable. Some form of insurance against future loss of utilities is, therefore, essential. How much investment should be placed in insurance against future needs is a difficult question, but it is possible to suggest logical methods for its consideration.

#### Types of Procedures for Collection of Statistical Data

13. The concept of utility is helpful in proposing a strategy for data collection and handling. Four types of processes are suggested: 1. Continuous collection for all persons or all events (continuous census); 2. Collection for all persons or events, but at intervals (census); 3. Collection in respect of a sample of persons or events, as a continuous process (continuous sample); 4. Collection in respect of a sample of persons or events for part time (interval sample). In general the cost of the operation will diminish from type 1 to type 4.

#### Types of Information Sources

14. Any data which are not accessible to meet a need have no utility. The cost of storage and retrieval are important considerations. Certainly no data should be collected twice, since the cost of storage and retrieval will, in all normal circumstances, be less than re-collection.

15. Statistical data are usually secondary information, and the basic material for collection process 1 will be information necessary for other purposes. Initially it may be supposed that any information considered necessary to facilitate decisions about individuals has potential value for statistical inference about groups of persons. The same may be said to apply to events. The problem regarding type 1 collection processes is to ensure cheap methods for storage and retrieval of existing information, and these processes should be linked

with automatic collation, summation and analytical processes. Types 2 to 4 processes of collection might be appropriate where: (a) Data were available for the population (all cases or events) but the individual decisions made on the basis of this information were taken at a low level of authority and the storage of the information would be costly (e.g. minor motoring offences); and (b) The information was not secondary, that is, not regarded as necessary for other decisions for all individual persons or events.

#### Classification, Analysis and Interpretation

16. Information becomes statistical data after the processes of classification and summation, and it is usual to add procedures for analysis and interpretation. These processes may be applied to data which exist in some form for other purposes, or the same operations may be applied to other information collected with a view to a specific purpose. It will be obvious that a hard line cannot be drawn between statistical material and case material, nor between data collected for administrative, diagnostic or other purposes. Perhaps the statistical operation is distinct from the research operation upon data in that the former is not concerned with the *content* of case material, but only with the storage, retrieval and classification of information originating in the form of case papers. But the statistical system must be planned to be flexible so that it can incorporate the results of research into the continuing series. If the statistical system cannot accommodate changes, the utility of the system will diminish.

#### OPERATIONAL PROBLEMS

17. The concepts introduced briefly in the preceding section may now be related to what appear to the writer to be the more important problems.

#### Crime and Socially Dysfunctional Behaviour

##### *Types of concept and types of action*

18. The main problems which arise in considering the nature of the measurement of crime are due to confusion of the concept(s). Some see crime largely as a moral problem, others as socially dysfunctional behaviour, and many do not separate the two concepts; and there are other views emphasising different aspects of offensive behaviour. Because the social action regarded as necessary (or legitimate) differs according to the

philosophy, the types of statistical data which would be required to provide the most appropriate information for one view or purpose would be different from that most suited to another. There is some ground common to the different philosophies, and this will be considered first. Later the particular views of the writer may become more obvious and intrusive.<sup>8</sup>

#### *Comparability over time and space*

19. If the conventional definition of crime is accepted as an initial basis for discussion, it is not clear what purposes are well served. It must be assumed that the counts of "crimes" (events) are intended to give some measure of the concept of the total "criminality" in the country. But a general and usual purpose of counting procedures is to afford a basis of comparison over time or between places. But since any state may define any act as "criminal" by legislative action, crime rates between countries (or legal systems) cannot be compared. Some supranational definitions might be made covering *types of behaviour* (events) disapproved by all societies, or by all "Western democracies" or some other collective of societies, but this seems an improbable event. Even if it were possible, the standardisation of definitions would not be sufficient to ensure comparability. No one state or society can determine a universal definition of crime. The valid use of crime rates, since crime is defined by the law, is confined to within one legal system.

20. There are similar problems in comparisons over time within a legal system. The law changes, reflecting the dynamic state of society and hence the definitions of crime which are based on the legal system (some  $\sum$ , over defined actions) also change. Besides the official changes in the law, certain legal definitions are broadly based<sup>9</sup> and are adaptable to changing conditions (e.g., the "legal fictions"). Any statistical data which relate to legal definitions contain the effects of problems of this system of definition.

<sup>8</sup> Sellin and Wolfgang deal with the problem by omitting consideration of "sin", and selecting a list of offences which relate to the "common ground". They also show that the amount of "common ground" is remarkably large.

<sup>9</sup> The phrase "broadly based" is used to cover the two types of source of variations, the one semantic and the other perceptual. Since these two factors interact and the resulting difficulties of comparison are similar, no distinction will be made in this note. Nominalist and realist philosophies, although relating to different research strategies, present similar problems in statistical data collection.

21. Presumably legal definitions are designed to serve legal purposes, and they are not open to criticism because they do not function in an optimum way for other purposes. Among the legal purposes which these definitions serve, the more important may be the determination of guilt or innocence of the individual offender. The emphasis in a trial (or hearing) is on the individual in the dock and the facts of the case in relation to the law. None the less, it will be obvious that descriptions of behaviour may be set forth which relate to other frames of reference. A system of classifying "what actually happened", which is optimum for legal purposes, is not the only system of classifying what happened. Other purposes than the determination of guilt in which present day society may be equally interested may require other methods of description. Societies today use many forms of social incentives and deterrents to induce individual members to conform to social norms.

#### *Multiple Classification*

22. Standard methods of problem solving include the classification of incidents in different ways in order to facilitate different solutions and to provide means for the assessment of the probable outcome of changes in the situation under study. For example, it was found by operational research workers during the war that flying accidents were seldom due to one "cause"—there were usually two or more factors which, if not present, might have resulted in the accident not taking place. The statistical policy of the Directorate of Accident Prevention of the Royal Air Force was, therefore, to classify each accident according to *all* the abnormal features in the situation so that the likely effect of any modification could be assessed. If crime is multi-causal, then it may be argued that the absence of any one factor in a situation might have changed the probability of its outcome. Socially damaging incidents (crimes) may be described and defined in many ways (on the same basic information) to facilitate the many different approaches to control and investigation. In the case of fires we do not allow the identification of an arsonist to inhibit development of means to prevent fires or to minimise the damage when they occur from whatever cause. The fact that some person (criminal) can be blamed for (found guilty of) a socially damaging incident (crime) does not absolve society from seeking ways to prevent or minimise damage irrespective of the form it may take or the guilt of the offender.

23. The central problem in devising statistics of crimes is to find ways for classifying events (crimes) which maximise the power of the information for purposes of different specific social action. The criterion by which existing "Criminal Statistics" should be tested is their fitness for these purposes (actions). Indeed, this is a general criterion for testing any form of social statistics.

24. In the light of this criterion it seems that the current definitions of "crime" for purposes of counting "crimes (indictable offences) known to the police" must be considered unsatisfactory. It would seem to be a matter for informed opinion to decide whether at least one "crime index" should reflect closely the lay public's views of what constitutes a "crime" or a "serious crime". If a "democratic definition" is regarded as appropriate, techniques exist for its refinement. If the definition of "crime" does not reflect the lay public's views of what crime is, the publication of figures for lay consumption will, it follows, be misleading and social pressures will develop leading to unsatisfactory action strategies.<sup>10</sup>

#### *Complaints and public opinion*

25. It may be held that the "crime complaints" reflect the public's views and awareness of socially disapproved behaviour which exceeds a threshold value such that they consider that the police ought to do something about it. As a measure of the pressure of police work it may be that "complaints" provide a better index than "indictable offences". It is, of course, probable that the threshold value of disapproval for a constant event will change with time and from place to place; that complaints will reflect the public expectation of behaviour and that this will provide a relative rather than an absolute measure of "crime". This is true. It is true also of the concept of "crime", whether this be measured by reference to indictable offences or some other legal definition or collective of such definitions.

#### *Two measures may be better than one*

26. It may be possible to obtain a better measure of the phenomena which most people have in mind when they speak of crime if it were possible

<sup>10</sup> This is exactly the point addressed by Sellin and Wolfgang and, indeed, they show that the scaling by the lay public does not differ significantly from the scaling of those professionally concerned with crime in different capacities. The matter of an index for action, or different forms of information for different purposes is, however, a rather different issue.

to make two distinct and different measurements—one relating to *reported behaviour* by some system such as now, and one relating to *reporting behaviour* on the part of the general public. By relating changes in *reported behaviour* ("crimes" or complaints) to changes in *reporting behaviour* a robust index seems to be possible.

27. Sample survey techniques could provide a measure of the changes in reporting behaviour by means of attitude scales or by means of subjective utility assessments.

28. Crimes which are not known to exist until investigation of other complaints lead to their discovery; crimes of which members of the public are unaware; crimes where there is no victim, may in some sense be "crimes", but they are of a different order from the majority of incidents which the layman considers to be "criminal" events. Crimes may, of course, be discovered by the police in the course of their work, but the victims remain unknown, and there are crimes where the victim may be regarded as the whole of society. If the public is unaware of a crime, or does not believe the incident to be a "crime", no complaint will be made because no one can disapprove of an unknown event. But these types of incidents are rare and it is unlikely that they will represent a large proportion of "serious crime". There are also very important distinctions in criminological thought between "socially defined criminals" and "law-made criminals". This distinction could be usefully retained and made patent, rather than obscured and neglected in the statistics.

29. It seems probable that the majority of "crimes (indictable offences) known to the police" are notified to the police by the victim, or, if a corporate body, by some authorised person representing the institution. (It is unfortunate that these facts are not known.) It would greatly assist the interpretation of any statistics of crimes (events) if rises and falls in the "crime index" could be related to different types of notification, or other ways whereby the events became "known".

#### *Types of notification of "crimes"*

30. It seems necessary to give consideration to whether (a) some classification of the method whereby the "crime" first became known should be standardised and applied to (i) all cases, or (ii) certain types of offences (e.g. violence against the person); and (b) where a number of *crimes* (e.g. continuous offences) become known by the same

report, the number of crimes is less important than the number of separate reports.<sup>11</sup>

#### A NEW FOCUS FOR MEASURING "CRIME"

31. The writer would prefer to see more radical changes than those proposed in paragraph 30 above, but along the same general lines. The role of the victim in the concept of jurisprudence has diminished over the centuries, but public interest is today beginning to re-focus. It seems that consideration should be given to whether the emphasis in statistical data regarding crimes should not be moved from the abstract concept of crime (events) to the person or concept of the victim. Such a change would facilitate the solution of many intractable problems. It seems that more useful information for purposes of social action could be derived from data about victims and the nature of the event *suffered by them*, than from information regarding the concept of the crime or the criminal.

32. It may be thought that the main purpose of the administration and government in the field of crime is not to protect morals but to protect the victim. If so, then a need exists for data to assist in the direction of this task. At present there are no measures of the effect of legally proscribed ("criminal") acts on the victims. The number of offenders is known in terms of "statistical persons", but there is no information regarding even "statistical" victims.

33. It has been noted earlier that one test of the utility of any measures is that they can be used to compare different areas of the country. Indeed, rates which do not permit of valid comparisons cannot be justified in terms of any utility. It is suggested that a base which would give good comparability and measure what most people mean by

<sup>11</sup> The problem of continuous offences is a difficult one which arises from the compulsion to count rather than measure events. Sellin and Wolfgang stress the number of separate *events*. For most of the offences included in their index this presents no real problem. It is possible to instruct persons to consider separately "each distinct robbery regardless of the number of victims", or to count each unlawful entry in the case of burglary. In the event of larceny there may be some problem in identification of "each distinct operation" (p. 293). But has a forger committed as many crimes or "events" as he has made false entries? Any counting system will present problems and some unsatisfactory assessments. It must be agreed, however, that the concept of an event avoids the even more unsatisfactory concept by which one event may be classified as one crime or almost any number, and some of the less serious incidents are capable of expansion to many breaches of law.

"crime" would be *damage done or loss or injury sustained by actions known or believed to be illegal*. Not only would a measure of this kind enable geographical areas to be compared, but, and this seems even more important, comparisons could be made regarding the effects of different kinds of social evils. There are limited social resources to deal with social problems and these should be deployed with a strategy which maximises social utility. Social action strategies cannot be evaluated unless comparable data are available to assess different social needs. Scales exist whereby personal injury or death may be translated into social costs (e.g. industrial injuries, road accidents etc).

#### Action and Intentions

34. The proposal to measure "crime" by means of social cost factors involves a change of base from "what the offender tried to do" (intent) to what was the effect of his actions. This approach avoids many administrative (as distinct from philosophical) difficulties. The matter of intent is important in moral issues, but morals and social costs are not the same thing and should be separated in the statistics. The two concepts of what happened and what was intended should happen, should not be confounded in one figure which serves to illuminate neither the social nor the ethical matters. Intent is a concept which relates more to the actor than to the action, and the introduction of intent into the description of crimes (events) tends towards the same error as confusion of "crimes" (events) with criminals (persons). Perhaps the utility of this separation of concepts is best indicated by an example. An area (X) may exist which has exactly (n) criminals who commit (N) offences, and who have the same intent as in another area (Y) also with exactly (n) criminals and (N) offences. But area (X) may suffer less social damage than area (Y) because, say, criminals in area (X) are less competent. By present statistics the number of crimes and criminals in area (X) would be exactly the same as in area (Y) and they could not be distinguished in any way. But clearly appropriate social action in the two areas might be very different. Again, suppose that the lack of social damage in area (X) was due, not to lack of competence of the offenders, but to extra competence of the police force; it would seem that these and similar factors should be revealed rather than hidden by the concept of "intent".

35. It will be recognised that the approach proposed is related to "welfare economics"—a field of statistical, econometric and mathematical theory which has developed rapidly in the last decade. Using known methods, areas could be compared on many indices of crime if crime were considered in terms of the social cost. Changes in the value of money, different rates of economic development, local and general economic boom and depression and the like could be related to "crime" through the medium of social costing. Some experts in the United States are beginning to think along these lines, but the idea of social welfare costing does not find such a ready acceptance here. Although Sellin and Wolfgang reject the idea of expressing everything in terms of the dollar, it is only a simple linear transform which is lacking to convert their seriousness scale for crimes into a scale of subjective social costing. It is then only a small step from subjective assignment of costs to more rigorous methods of ascertaining values. No such schemes could be put into action immediately; pilot investigation would be necessary to work out an inexpensive system and to remove snags in the detailed planning. But such measures of the state of crime may be developed independently of statistics of criminals (persons) and court disposals (decisions).

#### Criminals

##### *Persons and Decisions*

36. The legal concept of intent and most matters of interest to jurisprudence fall to be considered in connection with statistics relating to criminals (persons) rather than to crimes (events). Clearly, an event has neither intent nor responsibility—these are attributes of *persons*. The statistical person must be a "real" person and not the statistical fiction of current "Criminal Statistics", where one person may be several statistical persons in any one year, and a guilty corporation is a male aged 25! The units in data concerning courts could, it is proposed, be more correctly discussed as "decision"—not person—statistics. Statistics of court decisions are not statistics of criminals (persons); the two concepts should be clearly separated. In assessments of court work the number of persons involved in the decisions may be important, but the main factor must be the number of decisions. Of course, the person (criminal) is *affected* by the court decisions, but the final decision, in cases where there are more than one, is the

factor of most concern from the viewpoint of the person in the dock, and the value (utility) of the decision.

37. The decision process is itself important, but it is desirable to leave consideration of this until we have discussed the problems of statistics of criminals (persons). At present there is considerable overlap and duplication of records in the flow of information regarding criminals. For example, when an offender is disposed of by the court (a decision) the person's movements are determined by that decision, and information about these movements is required by two central and certain regional organisations. The Criminal Record Office (and perhaps regional C.R.O.s) may require information so that the offender's history may be brought up to date, and the Statistical Branch of the Home Office requires information for statutory purposes.

#### Criminal's Debt to Society—The Ledger Accounts

38. The operations required to provide information about offenders are very similar to those required by classical double-entry book-keeping, but the different "books" in the "Criminal Statistics" case are kept from different source material. The C.R.O. record and the Statistical Branch Offender Index are exactly similar to the ledger accounts and show the debit incurred by the offender to society, together with his payments (penalties). In the same way as modern book-keeping makes use of original documents for posting ledgers and the like, including the extracting of sales statistics, profit and loss accounts, balance sheets, etc., "Criminal Statistics" data could be derived from the *secondary use of original documents* without special effort having to be diverted for statistical purposes as such. Unlike book-keeping, social accounting need not always be concerned with recording all items of information, but sampling may be inserted at various stages of processing as an economy or expediting measure.

#### Multiple Use of Primary Documents

39. Cheap copying systems are now available and the multiple purposes to be served by the primary source material could be met by routine copying, and far better than by special creation of subsidiary primary source material. Such copying of primary documents would serve as the basis for varying sampling fractions, where the proportion

of the population sampled was determined according to the expected utility of the information. The storage of the primary information would ensure that utility not now foreseen was safeguarded.

### Court Decisions

#### *Decisions and Outcomes*

40. The work of the courts has interest in its own right and the interest should be served by the statistical data, without confounding with other interests. The source material may, of course, be complex, but it is the function of the statistical processing of the primary information to separate out the concepts for policy and action. It should not be necessary to raise special primary information in order to meet statistical needs in this sector.

41. The delays which occur in bringing offenders to trial, the frequency of appeals, the proportion of defended and undefended cases, the frequency with which offenders at different courts plead guilty, and many other factors affect the type of court work, but data on few of these matters are available in the current "Criminal Statistics".

42. Any decision, it may be thought, is intended to maximise the probability of an outcome which is desired by the decision maker. If this is so, the outcome of the treatment (decision) determined by the court is relevant and provides the link between statistics of criminals and statistics of court decisions. Data of this kind were specifically requested by the Streatfeild Committee. At present, such data as are available are obtained by specific "research" studies.

#### Inter-relation of Data—Crimes, Criminals and Decisions

43. Before it is possible to inter-relate the data covering different concepts it is, of course, necessary to differentiate them. The satisfactory integration into "Criminal Statistics" of data relating to crimes (events), criminals (persons) and courts (decisions), can be achieved only when it is possible to separate them. Information regarding "crime" should be related to the information about the criminal whenever possible, and both should be related to the court decisions. The court decision should be related to information regarding

the outcome of the treatment, and so throughout. All the information required for statistical purposes is available in some form in a primary source document. The problem is in providing means for linking this material and in the design of an efficient means for the information to flow to those who have need of it. It is the writer's view that these problems are soluble cheaply and that better data could be obtained with less "paper work" for the police and other agencies concerned with action, than is at present the case.

44. It seems essential that at some *one place* there should exist a comprehensive record of offenders with a continuously maintained record of their offences (the "ledger accounts"). This place should be responsible for copying and supplying to other persons and agencies the information required—other agencies should not have to collect again data which could be copied. If no such comprehensive records exist, there will be no way for providing courts with the information they need or ways whereby treatments may be evaluated. If the documents are not in one place, the time and complexity of tracing the appropriate source will add to the cost and the full benefits of automation will not be obtained. It would seem that the requirement to provide information to the central agency (whatever form this might take) should be statutory.

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(Part Three which discussed systems of documentation is not reproduced here since it is of limited interest).

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Lord Kelvin is reported as saying, "When you can measure what you are speaking about and express it in numbers you know something about it, but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind". Measurement is developing rapidly in many branches of social science, and few would now wish to reverse this trend. There is a long way to go before a sound strategy of social action, policy and research can be developed, but the types of measure proposed by Sellin and Wolfgang in respect of criminality are adaptable to other fields and allow of comparisons in terms of perceived social utilities.