

## SECONDARY ANALYSIS OF INTERNATIONAL CRIME SURVEY DATA

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The International Crime Survey constitutes a quantum leap in international statistics on crime and justice issues. While there are other long standing statistical series pertaining to crime and criminal justice internationally, none have so directly addressed the questions of crime incidence, the social context of crime, and public attitudes toward crime and criminal justice. The survey fills a substantial gap in the information that we need to understand crime and to formulate responses to it. Moreover, the survey offers this information in a more highly desegregated form than pre-existing statistical systems. As a result, these data can be presented and analysed in many more informative ways than simple national crime rates or age-specific rates for a nation as a whole. Finally, the International Crime Survey offers the advantage of being a more self-conscious and, therefore, self-critical system than the administrative series systems that we have relied upon heretofore. The sole purpose of the survey is to provide data on crime and victims. In contrast, administrative series data systems obtain their information from record systems that document the service provided by police or correctional agencies. These record systems are necessarily subservient to the service delivery system. Consequently, scrutiny of how the data are collected is not a high priority, and it may even be discouraged. Moreover, change to improve these data systems is difficult. In theory, at least, it should be easier in the ICS than in pre-existing data series to know the error structure of the data, to account for error in our analyses and, ultimately, to reduce these errors. For all of these reasons, the ICS is a tremendous step forward in international statistics on crime and criminal justice.

This paper suggests some ways in which this new and valuable data might be used to increase our understanding of crime and crime control. More specifically, it discusses the secondary analysis of the International Crime Survey (ICS). In this context, secondary analysis means the use of these data for purposes other than the principal reason for its collection - the production of annual national estimates of crime and victimisation. In highlighting particular analyses of the survey data, an attempt has been made to emphasise the unique features of the survey described in the foregoing paragraph - the new information that it brings, the ability to disaggregate that information and the opportunity afforded for methodological improvement. Finally, the joint use of the ICS and other data series in secondary analyses will also be discussed.

The specific analyses recommended here are highlighted because they are important for understanding crime and our responses to it. They are also analyses for which victim survey data, and particularly the ICS data, are especially appropriate. In some cases, the current survey cannot support the specific analyses suggested. These analyses could be accommodated in the victim survey method more generally, however, and it is useful to note these uses of the data so that the appropriate information may be included in future versions of the ICS.

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## Exploiting the new information in the ICS

The information collected in the ICS can be new in two respects. First, it may be the first time that such information on crime and victims has ever been collected in any victimisation survey. Second, the information may have been collected, but never in such a comparable way in such a large number of nations. In the first case, previous empirical work will offer little guidance as to the form and content of the analysis, but we can be assured that almost any analysis will be informative. In the second case, previous work will offer some guidance and the major contributions of the work will lie in testing the generalisability of previous knowledge. The "newness" of most of the data in the ICS is of the latter type, and so, enlightenment will come from cross national comparisons of these data. Some of the issues that can be informed by this type of analysis are described below.

Traditionally, the secondary analysis of data from single-nation victimisation surveys have been used to address the following issues:

- 1) the effects of macro-social changes, e.g. changes in the female labour force participation, on national victimisation rates;
- 2) describing and explaining the differential risk of victimisations across individuals;
- 3) describing and explaining the durable and non-durable repercussions of victimisation including fear;
- 4) describing and explaining responses to victimisation with special emphasis on the use of police services.

Less frequently, these surveys have been used to:

- 5) assess public attitudes toward crime and criminal justice policy.

The ICS can shed new light on most of these issues. The specific potential contributions of the survey for each issue will be described in the following sections. For reasons that will be presented more completely in the discussion of methodological research, it will be argued that the survey is more appropriately used for some of these purposes than others.

## Exploring the effects of macro-social changes

One of the greatest impediments to the study of crime and justice issues cross nationally has been the limited availability of data that is independent of the justice system. For many years, police data were the only widely available source of data on crime and the public response to crime.<sup>2</sup> The problem with police data is that, for many well known reasons, they cannot be used as an indicator of the volume of crime in a society.<sup>3</sup> For analyses that tried to determine the effects of public policy

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<sup>2</sup> Bennet, R. and P. Lynch (1990) "Does a difference make a difference? Comparing cross-national crime indicators" *Criminology* 28 (1):153-182.

<sup>3</sup> Biderman, A.D. and A. Reiss, Jr. (1967) "On exploring the dark figure of crime" *The Annals* 374:1-15.

on crime or vice versa, the lack of a crime indicator independent of public policy was crippling.

Victimisation surveys provide estimates of the volume of crime that are independent of police and other criminal justice agencies. The fact that the ICS now includes some thirty nations means that more adequate analyses of public policy can be conducted at the level of nation-state.

The fact that the ICS data are collected at the incident or person level is also a tremendous advantage for analyses that use the nation as the unit of analysis. Most national level data provided in statistical compendia provide aggregated data such as a mean or a median for each country. These aggregate measures are often produced by data systems that simply accumulate counts of the events of interest, e.g. crimes, immigrants, etc. Once these data are collected they cannot be disaggregated or reaggregated to the national level in a different way. This is not true for the ICS. The incident-based nature of the system permits aggregation and disaggregation in a number of ways. This is useful for national level analyses because the range of national estimates derived from the ICS that can be included in statistical compendia is larger than most other statistical systems. Rather than simply including an estimate for the total number of victimisations, the survey can (within the limits of its sample) provide estimates for each type of crime identifiable in the survey as well as for sub-populations of crime victims, e.g. women, teenagers, minority group members, etc. This is a tremendous advantage for nation level analyses because very often a single indicator of crime or crime data for the total population is not specific enough for the analysis envisaged.

The benefit of the ICS for these types of analyses will be realised when the ICS data are included in statistical compendia for general use. Use of these data would be further facilitated if the information is merged with other sources of cross national data on crime and social indicators that are maintained in machine readable form. Likely candidates include the Correlates of Crime (COC) data set that Richard Bennett has assembled as well as the United Nations Survey data set. The advantage of the COC data set is that it includes a large number of social indicators for each nation other than those collected under the auspices of criminal justice agencies. This information is valuable for finding predictor variables in models of crime and justice policies cross nationally. The UN survey data has the advantage of including a great deal of detailed information on aspects of criminal justice policy available nowhere else. Criminologists, hopefully with the support of international scientific foundations, should explore the possibility of merging these various data files into one. Prior to doing that, however, the nation-level statistics should be determined that would be of most use in nation-level analyses of these data. These indicators could be estimated for each nation and offered for inclusion in the merged data set alluded to above.

This action should not be given first priority in plans to facilitate secondary analysis. There are many unanswered questions about the accuracy and comparability of ICS nation-level victimisation rate estimates across nations. Addressing these issues should precede the merging of the ICS data with other international data on crime and justice. The specifics of addressing these accuracy and comparability issues are discussed below.

### **Describing and explaining differential risk of victimisation**

The victim survey method has been instrumental in rejuvenating criminology by providing data for the testing of opportunity models of victimisation risk. These models emphasise the opportunities to commit crime that are afforded by the social context in which the victims live and by their routine activities.<sup>4</sup>

The detailed data on victims and their social environment provided by victimisation surveys engaged the empirically-minded and thereby drew much more attention to this useful theory. As the body of empirical work on opportunity theory grows larger, it has become clear that adequate explanations of the differential risk of victimisation are layered. Factors affecting risk operate at the city-level, the community, the neighbourhood, the block, the household and the individual level.<sup>5</sup> Models that do not take this into account are at best incomplete and possibly misleading. The ICS provides another piece of this puzzle - the nation-state. The survey offers the potential of assessing the effect of nation-state on the risk of victimisation while holding individual and city-level characteristics constant. Cross national comparisons of victim survey data have been made in the past, but never for the range of nations offered by the survey and never with the same degree of comparability of procedures offered here.<sup>6</sup>

Including nation-state in analyses of victimisation risk is important for several reasons. First, although nation is a salient unit for public policy, it is not entirely clear that it is a useful unit for understanding risk of victimisation. There may be much more variation in risk within nation-states than there is between nation-states. Many of the differences in victimisation rates across countries may be due to differences in crime prone populations in those countries. Therefore, it may be more appropriate to compare urban populations across nations rather than simple aggregate victimisation rates. By including nation-state as a variable in models of individual risk, we would obtain an estimate of the importance of nation-state relative to other factors in the prediction of risk. If nation-state does not predict individual level risk net of other factors, perhaps we can overcome our obsession with nation-state to focus on other factors including sub-national units of geography that may serve us better. Second, if nation-state has an effect on risk, then we must begin to explore why that is the case and this will be an extremely fertile area. It may well be that the effect of nation on risk is not due to its criminal justice

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<sup>4</sup> Mayhew, P., R.V.G. Clarke, A. Sturman and J.M. Hough (1975) *Crime as opportunity*, Home Office Report No. 34, HMSO, London; Cohen, L. and M. Felson (1979) "Social change and crime rate trends: a routine activity approach" *American Sociological Review* 44:588-608; Hindelang, M., M. Gottfredson and J. Garafalo (1978) *Victims of personal crime: an empirical formulation for a theory of personal victimization*, Ballinger Publishing Company, Cambridge, Mass.

<sup>5</sup> Lynch, J.P. and D. Cantor (1992) "Ecological and behavioral influences on property victimization at home: implications for opportunity theory" *Journal of Research in Crime and Delinquency* 29 (3):335-362; Sampson, R.A. and J.D. Wooldredge (1987) "Linking the micro and macro-level dimensions of lifestyle, routine activity and opportunity models of predatory victimization", unpublished report, US Bureau of the Census; Smith, D. and G.R. Janjoura (1980) "Household characteristics, neighborhood composition and victimization risk" *Social Forces* 68 (2):621-640; McDowell, D., C. Loftin and B. Wersima (1989) "Multi-level risk factors for burglary victimization", paper presented at the Annual meetings of the American Society of Criminology, (November), Reno, Nevada.

<sup>6</sup> LaFree, G. and C. Birkbeck (1991) "The neglected situation: a cross-national study of the situational characteristics of crime" *Criminology* 29 (1):73-98.

practices per se, but to other aspects of its social structure such as its immigration policy or industrial policy that affect the stability and homogeneity of communities and neighbourhoods. If this is the case, then it will mean a very different role for criminal justice policy and criminal justice agencies in the formation of national crime-control policy. Rather than focusing on criminal justice, these agencies could become advocates for changes in other aspects of national policy that contribute to personal safety. The survey, coupled with other data systems, provides an opportunity to explore how the nation-state can affect individual risk of victimisation, if at all.

Some of the more interesting multi-level analyses that can be done with the ICS will be precluded because of small sample sizes within countries. In countries where the survey has been conducted more than once, the cases from each administration could be pooled (if the instrumentation is sufficiently similar) to provide more cases for analysis. Another approach would involve pooling cases across countries that are similar on important characteristics. This would require building a typology of nations. Nation types would be developed based upon important cultural, social structural and policy attributes. The resulting types could be tested using social indicator data on these various attributes and cluster analysis. If the resulting clusters are sufficiently homogeneous, then the ICS data for these nations could be pooled without losing crucial information.

The current ICS is not well suited to the estimation of multi-level models of victimisation risk largely because of the limited amount of information on sub-national units within countries. The interview includes information on the size of the jurisdiction in which the respondent resides. While the urban versus rural or large versus small place distinctions have been shown to be useful for the analysis of differential risk it is not sufficient.<sup>7</sup> Single nation analyses have shown that crime varies tremendously across small units of geography such that the risk within cities, for example, may be much greater than the differences between cities and more rural areas.<sup>8</sup> Communities, neighbourhoods and even blocks may be better units for the study of differential risk than larger aggregates such as region or city. The ICS, like all national victimisation surveys, needs better information on these sub-national units.

The difficulties in collecting information on small, sub-national units in national victim surveys are well known. Clustering observations to obtain better data on sub-national units reduces the efficiency of samples for national estimate purposes. This precludes obtaining representative samples of victims from these smaller geographical areas. An alternative approach is to draw the sample for national purposes but to include more descriptors of the neighbourhoods and blocks in which respondents reside. These descriptions can be used to define neighbourhood or block types that can be used to estimate the effects of living in certain areas on

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<sup>7</sup> van Dijk, J.J.M., P. Mayhew and M. Killias (1991) "The social correlates of criminal victimizations at micro and macro levels: a further analysis of the 1989 International Crime Survey", paper presented at the British Criminology Conference (July 24-27), York.

<sup>8</sup> Lynch and Cantor, *Ecological...*, op. cit.

victim risk.<sup>9</sup> For these purposes, reasonably high quality information on small areas can be collected using interviewer observation. Unfortunately, many of the ICS interviews are administered by telephone. This precludes interviewer observation. In telephone interviews, we must rely upon one of two strategies - asking the respondent to characterise the area or identifying the area in which the respondent lives in such a manner that attributes of that area can be appended to the interview data. These approaches have been used to characterise neighbourhoods and communities in other national surveys with some success.<sup>10</sup> Including such information in the ICS would make the data more useful for estimating multi-level models.

### **Effects and repercussions of victimisation**

In the secondary analysis of victim survey data less attention has been given to understanding the repercussions or potential repercussions of crime events than to the prediction of victimisation risk. Some non-durable outcomes such as fear have been the subject of substantial study, while durable outcomes such as injury or property loss have received less attention.<sup>11</sup> The question of what predicts the extent of injury or loss, given that you are selected as a target for victimisation would benefit from more study. The ICS can be used to inform these issues, especially in the context of multi-level analyses discussed in the foregoing section.

#### *Predicting durable outcomes*

Of the two most prominent durable outcomes of victimisation - injury and property loss - the ICS is more suitable for the investigation of loss. Sample sizes in each nation are small and injury is a very rare event. Consequently, there will not be enough incidents of injury to support extensive study. Judicious pooling of data on violent crimes across nations may allow for multi-level analyses that would include the effects of national peculiarities in policy or social structure.

Analyses of loss could focus on factors predicting 1) the successful completion of the act as opposed to simply the attempt, and 2) the amount of loss given successful completion. It may be useful to think of victimisation as a process rather than a point in time event.<sup>12</sup> The process involves at least two steps: 1) target selection; and 2) execution or completion of the act. The factors that affect one stage of the process may not affect the other. Consequently, when the two stages are not distinguished, the effects of independent variables, such as the use of

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<sup>9</sup> Hough, M. (1987) "Offenders' choice of targets: findings from the Victims Survey" *Journal of Quantitative Criminology* 3:355-369.

<sup>10</sup> Cantor, D. and J.P. Lynch (1988) Empirical test of opportunity theories of victimization: multi-level and domain-specific models, draft final report submitted to National Institute of Justice, Washington D.C.; Lynch and Cantor, *Ecological...*, op. cit.; Sampson and Wooldredge, *Linking...*, op. cit.

<sup>11</sup> Skogan, W. and M. Maxfield (1981) *Coping with crime*, Sage Publications, Beverly Hills, California.

<sup>12</sup> Bennet, T. and R. Wright (1984) *Burglars on burglary: prevention and the offender*, Gower Publishing Company, Aldershot.

burglar alarms, may be hidden because they affect completion and not target selection. Modelling completion separately may be informative.

Studies of the amount of loss may not be as interesting as studies of completion. There are no theories concerning the amount of loss, given victimisation, while completion can be informed by opportunity theories. Loss could be driven by the socio-economic status of the victim following the logic that wealthier persons have more valuable property. Alternatively, loss could be determined to a large extent by motor vehicle crime, since cars are usually the most expensive items taken or damaged.<sup>13</sup> The determinants of loss may differ substantially across countries. The lack of attention given to loss generally makes this an interesting area for exploratory analysis.

One problem with using the ICS to study loss is the absence of information on the role of insurance in recovery. The pain attendant to loss will differ considerably according to the method and facility of recovery. Differential rates of recovery from insurance as opposed to self-help would make for very different approaches to securing and safeguarding property. It would be useful in future versions of the survey to differentiate the total value of stolen items and the amount recovered from insurance as opposed to self-help.

#### *Predicting non-durable outcomes*

Many criminologists have noted that fear of crime may be more pernicious than crime itself. A substantial amount of work has been done to understand the sources of fear of crime and particularly the role of criminal victimisation in the generation of fear. We know from preliminary analyses of the 1989 International Crime Survey that fear varies considerably across nations.<sup>14</sup> As with the risk of victimisation, it would be interesting to see what the effect of nation is on the level of fear of individuals when demographic characteristics of the victim, prior victimisation experience, self-protective practices and type of residential area are held constant. This type of analysis will help us understand why nations differ in terms of their level of fear. It may well be that fear is driven by the recent experience of victimisation. If that is the case then crime reduction policy will be the best fear reduction policy. If victimisation risk is unrelated to fear, then perhaps crime-control policy is not the best approach to fear reduction. If risk of victimisation is unrelated to crime in some nations, but highly related in others then we will be obliged to investigate why that occurs. The ICS includes the data necessary to conduct these types of analyses and they should be done.

### **Responses to victimisation**

#### *Calling the police*

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<sup>13</sup> Lynch, J.P. and A.D. Biderman (1984) "Cars, crime and crime classification: what the UCR does not tell us that it should", paper delivered at the Annual Meetings of the American Society of Criminology, (November), Cincinnati, Ohio.

<sup>14</sup> Van Dijk et al., *Experiences...*, op. cit.

One of the major reasons for the growth and development of the victimisation surveys is the uneasiness that the public had over the fact that data on crime was almost totally controlled by the police. Once they were instituted, the surveys confirmed our suspicions about a sizable "dark figure".<sup>15</sup> Surveys have been less useful in increasing our understanding of why people report crimes to the police and why they do not. Most of the substantial analysis done to date on this issue has found that the seriousness of the crime drives reporting to the police.<sup>16</sup> Seriousness in this instance refers to the degree of injury or property loss. It is argued that this view of reporting to the police has arisen largely because of the tendency for sample surveys to focus on the individual and not larger aggregates - in other words, the absence of multi-level models at both the conceptual and empirical levels. If this is the case, then the ICS has the potential to substantially increase our understanding of the decision to involve the police.

Models of reporting to the police have emphasized the attributes of crime incidents and not the social context of crime and victims. The degree of injury and the amount of loss seem to determine whether the police will be called or not. To some extent, the degree of relationship between the offender and the victim has been shown to affect reporting behaviour. There are other findings that suggest the importance of larger social contexts, but these have not been explored systematically. The fact that incidents occurring in school have the lowest reporting levels raises questions about the adequacy of a pure seriousness model. The low reporting rates in schools could occur because the crimes are of a minor nature. They may be the result of the fact that students have the school authorities as an alternative to the police for reporting the incident. If the availability of alternatives affects reporting in schools, it could affect reporting of events that occur elsewhere. Most victim surveys have not collected data on the availability of alternatives to the police. The ICS includes such data and they should be used to examine the effect of social context.

Public opinions about the police and about public institutions more generally can influence the decision to call the police. These data have not often been included in models of reporting to the police because they have been omitted from national level victim surveys. The ICS includes such data.

At a more general level, police organs might negotiate their role with the people that they serve. The police are given cues about public demand for service by the calls they receive. Citizens are given cues by the service they receive in response to their calls. This negotiation will produce "cultures" within jurisdiction that will influence what gets reported to the police and what does not. This "culture" may not affect the reporting of incidents with serious injury or large losses, but it does affect the reporting of lesser incidents. National surveys of victimisation are not well suited to identifying these "cultures" because of the nature of their samples and the confidentiality restrictions that generally adhere in such surveys. The ICS has 30 identified jurisdictions that can be used for this purpose and they should be.

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<sup>15</sup> Biderman and Reiss, *On exploring...*, op. cit.

<sup>16</sup> Schneider, A., A. Burcart and L.A. Wilson (1976) "The role of attitudes in the decision to report crimes to the police" in McDonald, W.F. (ed.) *Criminal justice and the victim*, Sage Publications, Beverly Hills, California.

The ICS includes much more information on the social context of reporting to the police than has been available in most previous national victim surveys. By including this information in models predicting reporting to the police, we may find that a pure seriousness model is not adequate for explaining the activation of the police. Other factors more amenable to manipulation through policy such as the availability of alternatives to the police or public confidence in the police and other institutions may be found to influence the decision to report to the police.

#### *Calling others*

The decision to seek help from sources other than the police is another area that has not received a great deal of attention, largely because of the absence of data on these alternatives in large scale victim surveys. This decision is related to the decision to seek help from the police, but it could benefit from separate analysis. Studies of the decision to call the police contrast: persons who call the police, with those who call no one, and those who seek help from persons other than the police. The latter two groups may be quite distinct and should be so treated. The ICS offers this opportunity and we should take it. By understanding why people use alternatives to the police, we may be able to expand use of these alternatives. The ICS may not be as well suited to explore this issue as it is to investigate reporting to the police, but some exploratory analysis is in order.

#### *Recovery*

Another aspect of response to victimisation that merits attention is the recovery of stolen property. Obviously, police data and insurance data would be better for analysing most aspects of this issue because they should include much more detail than the survey. To the best of our knowledge, however, police data has not been used for this purpose and insurance data are largely proprietary. Moreover, neither of these other sources includes recovery by the victim or some party other than the insurance company or the police. It would be informative to see a distribution of recovery by source (police, insurance and other) by nation. If large differences appear in the extent and source of recovery, then this issue should be explored further.

It is unclear from the instrumentation examined whether the survey includes information on time to recovery. If these data are available for a substantial number of nations, then this should be analysed in addition to simply whether items were recovered or not.

### **Public attitudes toward and participation in crime-control**

Perhaps the greatest strength of the ICS is the amount of information that it contains on public attitudes toward and participation in crime-control policy. This information is tremendously useful both for characterising crime-control policy cross nationally and for understanding public attitudes toward crime-control policies.

#### *Characterising crime-control policy*

Criminologists and policy makers in criminal justice often think of crime-control policy as the actions and intentions of official government agencies. It may be more accurate and useful to think of crime-control policy as the combined actions of the government and the citizenry. Policy may be a negotiated division of labour in which the government agrees to perform certain functions while citizens perform others. This division of labour may differ dramatically across nations. To some extent studies of calls for police service have taken this approach, but the role of the public in social control is much more extensive than simply calling the police. The ICS provides the information on public attitudes and behaviour necessary to more fully describe the division of labour between citizens and the government.

It would be useful to describe and classify nations according to the division of labour in crime-control policy. This has been done in a fashion by van Dijk, Mayhew and Killias when they examined various behaviours and attitudes of citizens such as calling the police, whether they had insurance, the type of self-protective measures they have taken, their attitudes toward punishment, etc. These comparisons, however, involved only one attitude or behaviour at a time. It is argued that it would be more informative to examine these behaviours and attitudes simultaneously because they are interconnected and interdependent. Public self-protection, for example, will be more extensive in places where government intervention in crime-control is less extensive. Public demands for punishment will be greater in societies where public self-protection is more prevalent. A multi-variate typology of national crime-control policies could be developed using the ICS. This typology could include dimensions such as the relative level of public and private effort in crime-control, the severity in the public's demand for legal punishment, public support for crime-control agencies, etc.

This type of multi-variate approach to the definition of crime-control policy may help us better understand differences in single aspects of crime-control policy that made no sense when examined individually. Constructing such a typology may also be of use in some of the multi-level analyses suggested above. Classifying nations by type of crime-control policy provides one logic for pooling data from various nations. It would increase sample size at the individual level without masking important differences at the nation level.

#### *Understanding public choices for crime-control*

While it is useful to characterise crime-control policy in a holistic manner, it is also important to understand why the public holds specific attitudes or engages in specific behaviours. If public officials choose to lead, then they must understand the preferences of the citizenry so that they may change them. If public officials choose to follow, then they must understand the basis of public preferences to distinguish those that are appropriately followed and those that are not. There are a number of attitudes and behaviours worthy of attention including:

- 1) *Public demands for punishment.* The ICS includes questions on public preferences for punishment for specific crimes. Earlier work by van Dijk, Mayhew and Killias suggests that nations differ dramatically in terms of preferences for punishment. It is important to understand what drives these preferences. Are cross national differences in the demand for punishment

due to the demographic composition of the population or to previous crime experience? Do effects of nation on preferences for punishment persist even when characteristics of individuals are held constant? If so, do characteristics of the nation, such as its position in the crime-control typology explain these nation effects?

- 2) *Public satisfaction with police service.* Policing simply cannot be done without widespread public support, yet we understand very little about how that support is engendered and maintained. Is public support affected by the level of service that they receive? Does the public hold the police accountable for levels of fear or victimisation risk? Are the police the victim or beneficiary of the public's general support for governmental institutions at the local or national level? The ICS includes the information necessary to investigate these issues.
- 3) *The decision to insure.* In some nations, insurance companies are the largest victim service agency by far. They compensate many more victims of crime than are ever serviced by the police. Yet we know very little about why citizens seek insurance protection. Some nations have laws that require insurance for certain objects, but not others. Do these national policies affect the general level of insurance coverage in a society? Does experience as a victimisation affect the decision to insure? What about stage of the life cycle such that persons with families are more likely to insure than those without? What role does the sheer volume of possessions play in the decision to insure? Do specific groups fail to insure at higher rates than others? Could the distribution of insurance coverage be due to exclusive practices on the part of insurance companies? Again the ICS offers some data that can inform these questions.

## Methodological issues

The ICS, like any statistical system, is subject to error. It is important for the use and the future of the survey that its error structure be acknowledged and identified. Improvements in and intelligent use of the survey are dependent on information about errors. Statistical systems that fail to acknowledge and confront the question of errors run the risk of losing credibility both among criminologists and the public.

The ICS has a number of advantages relative to aggregated, administrative series in addressing the issue of error. First, there is a large and growing body of theory concerning measurement and sampling error in retrospective surveys and specifically victim surveys. Second, the highly disaggregated nature of the ICS data facilitates secondary analyses that can isolate the magnitude and direction of errors. Third, documentation of procedures used in the survey is abundant. These advantages of the ICS should be used to identify the error structure of the survey. This information can then be used to guide the use of the data. More specifically, information on errors can be used to determine which of the many uses of the data outlined in previous sections should be pursued first and with least concern for error.

### *Theory in retrospective surveys and likely errors in the ICS*

Of all the objectives of the ICS that of providing estimates of the annual incidence and prevalence of victimisation is the most difficult. Crime is a rare event so sampling error is an important factor. Further victimisation is highly clustered in the population among groups that are highly mobile and subject to non-response. Experience from the United States' National Crime Victim Survey and the National Crime Survey Redesign suggest that victim surveys are subject to substantial measurement error. Survey procedures such as mode,<sup>17</sup> reference period length,<sup>18</sup> cuing strategy in the screening interview,<sup>19</sup> the use of proxy respondents,<sup>20</sup> and

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<sup>17</sup> Lynch, J.P. (forthcoming) "The effects of survey design on reporting in victimization surveys" in Bilsky, W., C. Pfeiffer and P. Wetzels (eds.) Criminal victimization and fear of crime among the elderly: survey research, past, present and future, Enke Verlag, Stuttgart; Roman, A.M. and G.E. Sliwa (1982) Final report on the study examining the increased use of telephone interviewing in the National Crime Survey, unpublished report, US Bureau of the Census; Bushery, J.M., C.D. Cowan and L.R. Murphy (1978) "Experiments in telephone-personal visit survey", paper presented at the American Statistical Association Meetings, 4 August.

<sup>18</sup> Bushery, J.M. (1981) "Results of the NCS reference period research experiments", memorandum, Bureau of the Census, Washington D.C.; Biderman, A. and J.P. Lynch (1991) Understanding crime incidence statistics: why the UCR diverges from the NCS, Springer Verlag, New York.

<sup>19</sup> Hubble, D.L. and B.E. Wilder (1988) "Preliminary results from the National Crime Survey (NCS) CATI experiment" Proceedings of the American Statistical Association, (22-25 August), Section on Survey Methods Research, New Orleans, LA.; Lynch, The effects..., op. cit.; Biderman, A.D. and J.C. Moore (1980) Report on the workshop on applying cognitive psychology to recall problems in the National Crime Survey, Bureau of Social Science Research, Inc., Washington D.C.; Biderman, A.D., D. Cantor, J.P. Lynch and E. Martin (1986) Final report of research and development for the redesign of the National Crime Survey, Manuscript, Bureau of Social Science Research, Inc. Washington D.C.

<sup>20</sup> Reiss, A.J. Jr. (1982) Victimization productivity in proxy interviews, Institute for Social and Policy Studies, Yale University, New Haven CT; Biderman A.D., D. Cantor and A.J. Reiss Jr. (1982) "A quasi-experimental analysis of personal victimization by household respondents in the national crime survey"

bounding procedures,<sup>21</sup> have been shown to affect level estimates and, in some cases, the distribution of victimisation rates across sub groups of the population. Although the NCVS is quite different in structure from the ICS, the findings from this work cannot be ignored. Some of these sources of error undoubtedly affect level estimates produced by the ICS, others may affect the analytical uses of the data discussed above. This is especially likely when survey procedures differ across nations.

Uses of the survey data that do not involve estimates of the incidence or prevalence of victimisation are probably not as susceptible to error as those that do. Public opinions about crime, fear of crime, or routine self-protective activity are neither rare nor clustered, so sampling variability is not as great as it would be for victimisation. Often it is not essential that the respondent accurately report the details of some "objective" event, but their perceptions of same. In this case, the cognitive task is less demanding, and therefore, less subject to measurement error.

Existing evidence on error in victim surveys can serve as a guide to methodological research on the survey and to intelligent use of the data in secondary analysis. The prior work on the NCVS and other surveys can suggest where the likely large errors are and what can be safely ignored. The major sources of error likely to affect the ICS include:

- 1) *Sampling error*. The fact that the surveys interview a sample of residents in each nation means that the resulting estimates will be affected by sampling error;
- 2) *Non-response*. The level of non-response in the ICS is quite high and it varies across nations. High levels of non-response can result in biased estimates of victimisation rates and can affect the distribution of victimisation across the levels of independent variables;
- 3) *Failures of recall*. Events more proximate to the interview are reported in greater proportion than those more distant from the interview. The most common explanation for this recency bias is the failure of respondents to recall and recount events as time passes. This "forgetting" results in under estimates of victimisation rates;
- 4) *Telescoping*. There is a pronounced tendency in retrospective surveys for respondents to report events as occurring within the reference period of the survey, when these incidents have happened prior to the reference period. This reporting on events not occurring in the reference year leads to over-estimates of victimisation;
- 5) *Mode effects*. The evidence on the effect of telephone interviewing is mixed. Some studies report no effect on the reporting of victims, while others indicate that telephone interviewing depresses the reporting of victimisation;
- 6) *Computer Assisted Telephone Interviewing (CATI)*. There is good evidence from the NCVS that CATI increases the reporting of victimisation. The most

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Proceedings of the American Statistical Association, Section on Survey Methods, pp. 516-521, Washington D.C. American Statistical Association.

<sup>21</sup> Biderman, A.D. and D. Cantor (1984) "A longitudinal analysis of bounding, respondent conditioning and mobility as sources of panel bias in the National Crime Survey" Proceedings of the American Statistical Association (August), Philadelphia.

common explanation for this effect is that this method increases the control over interviewers. This, in turn, ensures that procedures are followed and higher reporting results.<sup>22</sup>

These potential sources of error have been found to exist in victim surveys and are, therefore, likely to affect the ICS. The particular design of the ICS would make some of these sources of error more troubling than others. The importance of recency bias or recall problems is a function of the reference period used in the survey. If respondents are asked to recall and report events for short periods of time, e.g. one-month, the recall problems will not be severe. The ICS employs reference periods of one and five years. With such long periods, recall problems will be substantial. The problem of "telescoping" also differs according to the design. Surveys that attempt to bound the reference period with a previous interview, or in some other way, are much less affected by "telescoping". The ICS, however, does not employ a bounding procedure. Consequently, a large number of out-of-scope incidents will be reported in the survey leading to an over estimate of victimisation.

#### *The import of likely sources of error to analyses of the ICS*

The importance of these likely sources of error depends to some extent on the uses to which the data are put. It is unlikely that the incidence or prevalence estimates produced by the ICS are accurate reflections of the level of victimisation in a society. The use of long reference periods and unbounded interviews may have the fortuitous effect of producing equal and off-setting errors, but this is too much to hope for. Even if we did have such good luck, the nature of the victims captured by the survey would not be representative of the population of victimisation events. The types of events reported to the police will be over-represented. Much of the "dark figure" will remain obscured.

Estimates of change in the level of victimisation within a given nation may not be as much affected by the errors in the survey. As long as procedures (including the survey organ) remain the same across administrations, then change estimates should be usable.

The effects of sources of error on the analytical use of the data are less clear. Analyses of the risk of victimisation within a nation, for example, may be biased by the use of long reference periods in the ICS. Studies of the different reference period lengths in the NCS younger respondents, minority respondents and males report significantly more victimisation when shorter reference periods are used.<sup>23</sup> The long reference periods used in the ICS may lead to increasing or decreasing the effect of independent variables in the model. There is no similar evidence on the effect of bounding across values of independent variables.

Analyses of the data from multiple countries that include nation as a variable in the model are not only susceptible to the errors that affect single nation studies, but also errors resulting from the different procedures and response rates across

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<sup>22</sup> Hubble and Wilder, Preliminary..., op. cit.

<sup>23</sup> Kibilarcik, E., C.H. Alexander, R.P. Singh and G.M. Shapiro (1983) "Alternative reference periods for the national crime survey" Proceedings of the American Statistical Association, pp. 196-201.

nations. Since these differences in response rates and procedures are correlated with a variable in the model - nation - then we must be particularly concerned about their potential effects on the model.

### **Methodological Studies**

There are a number of studies that can be done to suggest whether these concerns about error are warranted. First, further analyses of data collected for methodological purposes in the NCVS can be analysed to estimate the import of errors for level estimates and analytical uses of the data. Second, analyses of the ICS should be undertaken to determine the effects of survey procedures on reporting in the survey. Third, comparisons should be made between the ICS and other sources of data to determine the possible effects of the sources of error discussed above.

Much of the methodological work undertaken in support of the NCVS examined only the effects of survey procedures on estimates of the level of victimisation in a given time period. Much less is known about the effects of these procedures on the analytical uses of the data. We know, for example, that longer reference periods produce lower estimates of victimisation than shorter reference periods. We do not know, however, if models of victimisation risk estimated with data from surveys with a one-year reference period would differ substantially from those employing a six-month reference period. The same is true for bounded as opposed to unbounded interviews. These types of analyses should be undertaken using the NCVS, the City Survey data from the NCVS or specially data sets collected for methodological purposes. If such analyses demonstrated that survey procedures do not substantially effect the models estimated, then we could use the ICS data for analytical purposes with greater confidence.

The ICS data themselves can be used to shed light on the potential errors in the survey. One such analysis could compare models using data from the five year reference period with those using the data from the one year reference period employed in the survey. If the models differ substantially, it will suggest that reference period length is affecting the analytical uses of the survey. A second analysis could be done at the level of nation-state. Models could be run predicting annual victimisation rates for nations using the survey design features employed in each nation as predictors. If degrees of freedom permitted, population characteristics could be entered as control variables. If design features were strong predictors of annual estimates, then we must continue to investigate the question of the comparability of the data cross nationally. Similar analyses could be done at the level of the individual respondent in those countries where survey procedures varied, e.g. CATI for one component of the sample and in-person interviews for others.

Useful studies could be done comparing nation level data obtained from the ICS with that obtained for other sources. Specifically, the issue of non-response could be addressed by comparing the demographic data from the survey in each nation with census data or other survey data from that country. With somewhat less precision, comparisons can be made between estimates from the ICS and those from other victim surveys in countries where these surveys exist. These comparisons should not be made on the basis of level estimates because these will

surely differ across surveys with very different procedures. Perhaps the rank order of nations based upon other surveys could be compared to the rank order of nations from the ICS. In some cases adjustments could be applied to estimates from surveys with very different procedures.<sup>24</sup> This kind of comparison will be neither precise or simple, but it will tell us if estimates of victimisation rates are more or less sensitive to procedural differences in victim surveys. These surveys may be more robust than existing theory would lead us to believe.

### **The use of police and victimisation survey data**

Although this paragraph ought to say something about how police and survey data may be used to increase our understanding of crime, it has less to say about how they should be used than how they should not be used. These two data sources should not be used primarily to produce comparable estimates of the level and trend in crime. The methods used to produce victim surveys and police statistics are radically different. The estimates that they produce are virtually irreconcilable, and we should not expend a great deal of energy making them comparable.<sup>25</sup> Police data and victim survey data tap very different components of the crime problem. They capture very different information on the crime events included in each. We should spend less time making the estimates from the two methods consistent, and more on determining what each can do best. For example, we know that victim surveys will under-estimate the level of violence that results in very serious injury. Police and hospital records are much better sources of information on these matters. Victim surveys should not be designed primarily to address this sub-class of crimes. Victim surveys are much better sources of data on property crimes and lesser assaults than are police data. Each method should be allowed to describe that which it describes best. Inconsistencies between police data and victim survey data should be seen as interesting topics for investigation rather than embarrassing anomalies that threaten the legitimacy of one or the other method. The major threat to the legitimacy of the methods is the wrong-headed and simplistic expectation that the two should produce readily comparable estimates of crime.

### **Conclusion**

Some of the secondary analyses described above are more urgent or more feasible than others. Top priority should be given to the investigation of methodological issues in order to address questions about the accuracy of annual estimates of victimisation rates cross nationally. Unless these issues are dealt with, many of the most interesting analyses of the ICS data will be suspect. Second priority should be afforded to analyses of the data that are not much affected by the error structure of the survey. These include analyses of public attitudes toward crime and crime-control policy, the character of crime-control policy in terms of the

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<sup>24</sup> For a good start on this process see Block, R. (1989) A cross-national comparison of victims of crime: victim surveys in eleven countries, unpublished paper, Loyola University of Chicago.

<sup>25</sup> Biderman and Lynch, Understanding..., op. cit.

mix of public and private activity involved, and responses to crime (with special emphasis on calling the police). Third priority should be given to analyses that are likely to be affected by errors in the survey. These analyses are those that rely upon incidence or prevalence estimates of victimisation at the national and perhaps the individual level. Clearly, analyses that emphasise the comparisons of national level estimates of crime and victimisation should await more work on troubling methodological issues that affect accuracy and comparability. At minimum, if such analyses are done, variables should be included in the model to account for suspected sources of error and non-comparability across nations. Analyses of risk at the individual level that include nation-level variables are arguably less affected by known sources of error in the survey. Nonetheless, confidence in these analyses would be greater if methodological work were done first to demonstrate that known sources of error are unlikely to bias these analyses.



Policy Issues

