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22. Research Example: **Victimisation Surveys in Environmental Criminology**

Andromachi Tseloni, Nick Tilley, and Graham Farrell

Introduction

Environmental criminologists have to make the best of more or less dodgy data that have generally been collected for purposes other than developing and testing relevant theory. Different data sets have different strengths and weaknesses. The most commonly used data on crime derive from police sources, but victimisation surveys, the focus of this chapter, have also been used. National victimisation surveys have existed since the 1970s. Examples of the earliest, most prominent and analysed ones include the National Crime Victimization Survey (NCVS) since 1976 in the USA, and the British Crime Survey (BCS) since 1982 in the UK. To our knowledge, the youngest national victimisation survey in Europe is the Cadre de Vie et Sécurité (CVS) [Outline of life and security] since 2007 in France. Major national victimisation surveys are being undertaken in other countries also. For example Mexico has had a national household victimisation survey since at least 2010, with a sample size of over 95,000 in 2014 (see file:///Users/nick/Downloads/envipe2015_presentacion_english.pdf, accessed August 16 2016). Chile's national household victimisation survey goes back further, to 2003. The above surveys aim to capture individuals' and households' crime experiences, attitudes and perceptions. Others, such as the Commercial Victimization Survey (CVS) in the UK, focus on crime and security experienced by businesses. For a detailed account of the information provided in the BCS / CSEW (Crime Survey for England and Wales, the name of the BCS since 2012) please see Tseloni and Tilley (2016).

Police sources and victimisation surveys do not, of course, exhaust the possibilities. Observational data, probation service data, photographic evidence, hospital and ambulance records, fire service data, business records, rubbish collection data, cleaning data etc. may all be used. And all have their shortcomings. This chapter's focus is on the uses and limitations specifically of victimisation survey data. Some comparisons will be made with police data, in particular, given that both are widely

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drawn on for a variety of purposes and both have been used to estimate distributions and trends of a wide variety of crime types and to throw light on hypotheses that might explain those distributions and changes.

This chapter will give examples from the authors' work of ways in which victimisation surveys have been used in environmental criminology to identify spatial distributions of crime and to test and refine hypotheses that speak to these distributions.

It needs to be made clear from the start that there are non-spatial patterns to crime events that form important parts of the broader field of environmental criminology about which much of our research has related but are not dealt with here. These patterns relate, in particular, to target-related crime concentrations, for example those associated with vehicles. Much of our collaborative work has examined in detail ways in which victimisation surveys help understand how and on why crime has concentrated on insecure vehicles and how rates of vehicle theft have changed over time in response to the proliferation of security improvements (see Farrell et al 2011a, b).

Here, though, in accordance with our invitation to contribute to this volume, we focus on the contributions victimisation surveys can make to understanding spatial distributions of crimes. Moreover the section in which this chapter is due to appear is headed, Individual Activity Patterns, so our focus is more particularly on how victimisation surveys may throw light on ways in which individual activity patterns relevant to spatial distribution of crime may be illuminated with the use of victimisation surveys. It may again be worth reminding the reader that some sources of spatial distribution may be little related to individual activity patterns but may relate instead to the accessibility and attractiveness of the potential target regardless of activities by potential victims, offenders, guardians or handlers. Again some of our previous work has spoken to sources of spatial patterns that do not invoke individual activity patterns, but instead features of potential targets. Much of our work on domestic burglary patterns and trends is relevant here (see Tilley et al 2011, Tilley et al 2015, Tseloni et al 2015).

The next section of our chapter makes some initial remarks on the variations in victimisation surveys, which clearly affect what can be concluded from them with what confidence about differing forms of spatial contribution.

I. Victimisation Surveys

National victimisation surveys were established to throw light on the ‘dark figure’ of crime and also to gauge the public’s attitudes to crime and to criminal justice. Not all crimes are reported and of those reported not all are recorded. Moreover the mismatch between crimes actually occurring and crimes recorded varies by place, time and crime type. Victimisation surveys were established to provide a more accurate fix on crime patterns and trends than is possible with recorded crime data.

Victimisation surveys were not initiated to inform environmental criminology. Indeed in a volume marking the 25th anniversary of the first British Crime Survey, which also refers to other victimisation surveys, attention to their relevance to environmental criminology is quite sparse (Hough and Maxfield 2007). There is, for example, only one cited reference to the Brantinghams and that relates to fear of crime rather than to their work on crime patterns and their sources (Ditton and Farrall 2007, p. 224).

Victimisation surveys vary widely and their attributes clearly influence the contribution they can make to environmental criminology and in particular what they can tell us about the spatial distribution of crimes. Here are some key differences.

- Surveys can target different victim populations, for example young people, adults, households and businesses and hence contribute to identifying the distribution of the kinds of crime affecting each of them.
- Surveys can be pitched at an international, national or neighbourhood level and can speak to spatial distributions across varying geographic resolutions.
- Surveys can be one-off exercises, include regular sweeps of cross sections of the target population, or include panels asked more than once about their crime experiences, all of which influence what can be learned about changing distributions of crimes.

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- Victimisation surveys collect different data and clearly the nature of the questions asked influences what can be concluded about the distribution of incidents.
- Victimisation surveys can be conducted face-to-face or by telephone or by post or by internet or be computer assisted, which both influence response rates and hence risks of bias in the findings and also the possibility of fieldworkers collecting ancillary observational data as they administer the questionnaire.
- Sample sizes vary widely affecting the level at which statistically significant variations in crime rate can be identified by any spatial indicators used.
- Sampling frames and sampling techniques vary across victimisation surveys.
- Techniques for trying to ensure that all incidents are recalled that fall within the reference period vary.
- Victimisation surveys are conducted by different bodies with different purposes, which influence the quality of the data, the questions asked and the scope there may be for environmental criminologists to influence the questions asked.
- The coding practices used in victimisation surveys vary, influencing the forms of analysis that then become possible for the environmental criminologist interested in crime distribution.

II. Examples of the Use of Victimisation Surveys in Environmental Criminology

This paper will provide three examples showing how national victimisation surveys have been used to develop, test and refine hypotheses drawn from environmental criminology that relate to spatial distributions of various crimes which link back to individual activity patterns.

A. Number of Victimisations and Routine Activities

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National victimisation surveys have routinely been analysed for testing the Lifestyle and Routine Activities theory (RAT) which was developed around the same time as the NCVS (Hindeland, Gottfredson and Garofalo 1978; Cohen and Felson 1979). Such tests rely on information collected by the interviewers which pertains to both direct and indirect measurements of crime exposure. Direct measurements include information about respondents' and their households' activities away from home. Socio-demographic and economic attributes of respondents, such as gender, marital status or number of cars in the household, and other survey derivative data are routine activities proxies. For example, Osborn and Tseloni (1998) used the number of calls the interviewer had to make until successfully contacting the respondent as a proxy for time the house is left empty or time away from home. This section reviews some of our work testing RAT.

Tseloni and Pease showed that using public transport at any rate in the USA, spending evenings out daily and/ or going shopping daily – particularly, if the daily shopper is male or single - exposes North Americans to significantly more personal crimes than when they do not undertake these activities (Tseloni 2000; Tseloni and Pease 2004). Similarly, English and Welsh frequent pub goers (three or more times per week and, especially those living with children) and regular (at least once per week) club goers, particularly males, suffer roughly twice as many personal crimes as those visiting pubs and clubs less often (Tseloni and Pease 2015).

The previous evidence derived from similar statistical analyses of two national victimisation surveys, the 1994 NCVS in the USA and the 2000 BCS in England and Wales. As perhaps noticed, survey indicators of respondents' lifestyle and routine activities differ between the two data sets. This discordance is to a certain extent expected and reflects cultural and lifestyle variations even between two countries so similar with regards to language, prevailing ethnic group and culture, and linked history. What is arguably unexpected is that, despite these theoretical concepts' operationalisation dissimilarities, the above findings agree in providing qualified rather than full support to the Lifestyle and Routine Activities theory.

As discussed in this and the following paragraphs, the NCVS and the BCS differ in many more ways than just their lifestyle and routine activities indicators. Tseloni et al.

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(2004) draw on data from victimisation surveys in England and Wales (the 1994 sweep of the BCS), in the United States (the 1994 sweep of the NCVS), and in the Netherlands (the 1993 sweep of the PM) to test cross-nationally hypotheses relating to burglary incidence variations drawn from Routine Activities and Lifestyle Theory.

The sample size and methods used in the surveys differed. The 1993 PM sample was 50,704 individuals aged 15 or over, drawn from the sampling frame of national telephone numbers, and the questionnaire was administered using Computer Assisted Telephone Interviewing or CATI. The 1994 BCS sample consisted of 14,520 respondents aged 16 or over, drawn from the post-code address file (sampling frame), while the questionnaire was administered using Computer Assisted Personal Interviewing or CAPI. The 1994 NCVS uses a rotating panel design of those aged 16 and over, with addresses drawn from the Address List of the Decennial Census, using alternately face to face and CATI for administering the questionnaires. Likewise the data collected from the surveys varied across the three countries, as did the methods to select individual respondent from the household (nearest birthday for PM, selection tables for the BCS, and to answer questions for household crime apparently most knowledgeable household member at least 18 years old for the NCVS).

Tseloni et al. abstract from the three victimisation surveys those coded responses to questions that would predict differences in vulnerability to domestic burglary on the basis of lifestyle and routine activity theory. They focus not only on variations in prevalence (risk of being a victim over the reference period), but also variations in incidence, to include risks of repeat incidents over the reference period.

The four risk factors they took from routine activities theory included: ‘target exposure, absence of capable guardianship, attractiveness and proximity to potential offenders’ (Tseloni et al. 2004, p. 73). Each was operationalized using victimisation survey data, as shown in Table 1, with adjustments made for the different questions asked in each of the three victimisation surveys

<TABLE 1 ABOUT HERE>

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In their analysis Tseloni et al then produce negative binomial models of burglary rates for each country. For the most part the findings accord with what would be expected from routine activities theory in the sense that they help explain risk variations. A recent work which examines equity and justice in relation to the crime drop found that households which leave their home empty for 3 to 5 hours on a weekday have experienced lower than national levels of burglary falls between 1993 and 2008/09 (Hunter and Tseloni 2016).

B. Travel to Victimisation Patterns

Crime pattern theory has focused mainly on offender routines and their associated awareness spaces to explain crime patterns (for an overview please see Chapter 16 by Wim Bernasco in this volume). This has led to a fairly substantial literature on offender travel to crime commission patterns (see Hodgkinson and Tilley 2008, for a review of this). Complementing this, Hodgkinson and Tilley focus on travel to victimisation patterns. They conjecture that risks of personal crimes are liable to increase at the intersection of offender awareness spaces and victim unawareness spaces. Those who are in unfamiliar surroundings will be less sensitive to the crime risks they face and hence more vulnerable than in areas which they frequent routinely. The high risks of theft faced by tourists accords with this.

Hodgkinson and Tilley took the 2002-3 sweep of the British Crime Survey to provide a partial test of this hypothesis. The British Crime Survey asked victims two questions that speak to this hypothesis: first, whether the offence occurred within or outside England and Wales and second, whether victims were within or beyond 15 - minute walk from their homes at the time of the incident. Hodgkinson and Tilley found that of the 4,240 incidents that occurred beyond a 15 minute walk from the respondent's home, four per cent took place outside England and Wales¹. The proportion of all incidents occurring beyond 15 -minute walk from the respondent's home varied widely by crime type, as shown in Table 2.

¹ Unfortunately no further questions are asked in these cases. This means that the survey misses all crimes committed against visitors to England and Wales and also omits details of crimes experienced by residents when they are abroad. What was the case in 2002/03 continued at least to 2014/15.

<TABLE 2 ABOUT HERE>

Unsurprisingly only small percentages of household and burglary theft occurred beyond a 15 minute walk from the victim's home. These presumably relate, for example, to second homes that have been burgled. What is interesting is the preponderance of acquisitive personal crimes that occur at a distance from home. Although the victim may be familiar with the area (for example if it is close to an activity node or route between nodes) distance from home is used as a rough indicator or probability of unawareness of crime risk. The pattern of victimisation accords with expectations. Of course, absent controls for other differences of those victimized that might be associated both with higher risks of personal crime and being beyond a 15 minute walk from home (for example age) and absent any measure of proportions of time spent within and beyond the 15 minute walk from home, these findings are at best suggestive. They do, however, accord with theoretical expectations of spatial distributions of victimisation risks and also accord with findings for the crime risks encountered by tourists.

C. Place and Crime

Environmental criminology is equally concerned with individuals' routine activities and place characteristics. Influential studies drawing on the early sweeps of the BCS tested the extent of and criminological theories explaining area crime differences (Trickett et al. 1992; Sampson and Wooldredge 1987). These early studies inspired a body of research that seeks to address how area and place characteristics, including neighbourhood cohesion, affect the geographical distribution of crime. These have been examined on their own or in conjunction with individuals' routine activities and target attractiveness. Pioneering work on individual and area determinants of crime based on victimisation survey data originated roughly at the same period in Canada (Kennedy and Forde 1990) and the US (Smith and Jarjoura 1988). Examples of this body of research drawing on the BCS is overviewed in this section.

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Trickett et al. (1992) analysed the very first BCS, 1982, and examined the distribution of crime across area deciles in England and Wales. They found that (a) crime prevalence (the percentage of victims in the surveyed population) and incidence (the percentage of crimes in the surveyed population) rates vary widely across areas; (b) the greatest differences appear to exist with regards to crime incidence rates rather than prevalence rates; and as a result (c) crime concentration (the mean number of crimes per victim) is distinctively higher (while the number of victims lower) in high crime areas compared to low crime areas than would be expected were crime to be randomly distributed. In other words crime rates are disproportionately higher in high crime areas with this difference mostly made up by more crimes per victim rather than more victims, i.e., a disproportionately higher crime concentration (Trickett et al. 1992).

This analysis was replicated employing the 2000 BCS and more recently all the sweeps between 1982 and 2012/13 (Kershaw and Tseloni 2005; Ignatans and Pease 2015). The originally found pattern of highly inequitable area crime distribution has persisted during the lifetime (accompanied by a number of methodological changes) of the BCS. If anything, in fact it has become more inequitable after the crime drop both nationally and internationally (Ignatans and Pease 2015; Under review). Enough has been said however about crime concentration and issues of distributional justice, which are discussed in detail in another chapter of the Handbook ('Repeat victimisation and near repeat victimisation'). The study by Trickett et al. (1992) was the first step for developing spatial investigations of crime patterns based on victimisation survey data.

How is area defined within survey data? 'Area' in victimisation surveys is the geo-coded sampling point of the survey. In the 1982-1988 BCS these were based on electoral wards and since the 1992 BCS on postcode sectors of roughly 2,000 delivery points. There is however considerable variation in the number of selected households and interviews per sampling point. For example, the number of households per sampling point in the 2000 BCS is between 4 and 29 (Tseloni 2006, p. 208). The Trickett et al. (1992) study therefore has been criticised for portraying a very rough picture of the crime distribution: it relies on small area observations of crimes that were reported by the sample of respondents in that area. Crime is both rare and

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concentrated. Therefore sample-based observed crime rates entail sampling errors, which are particularly large in less populated areas and /or those with high non-response (Lynn and Elliot 2000; Kershaw and Tseloni 2005; Osborn, Trickett and Elder 1992). In fact Lynn and Elliot (2000) suggest that area-level crime inferences based on the BCS have some validity across area quartiles (rather than deciles) according to estimated (rather than observed) crime rates from hierarchical models. But more on this later. Despite this criticism the study reported by Trickett et al. (1992) was influential and its findings remain consistent across replications.

A natural step forward from Trickett et al. (1992) is to identify the area characteristics that are associated with high crime rates. The theoretical underpinnings of this work directly relate to the Chicago School of social disorganisation (Park 1936) and the current strands of environmental criminology (Brantingham and Brantingham 1991) and collective efficacy theory (Sampson 2006). Various data sources have furnished area information for explaining victimisation survey – based crime rates:

- Victimization surveys via area aggregated responses, whereby individuals' answers are summed up within each area (Sampson and Wooldredge 1987; Sampson and Groves 1989; Tseloni et al. 2010)
- Local authority and other administrative data, including for example health, local economic, and deprivation profiles (Nilsson and Estrada 2007)
- Decennial Census data (Osborn, Trickett and Elder 1992; Kershaw and Tseloni 2005; Tseloni 2007)
- Social surveys as distinct from victimisation surveys (Goudriaan, Wittebrood and Nieuwbeerta 2006)
- Observational data on neighbourhoods (Lens 2016)

Data from any of the above sources except the first, would have to be added to victimisation survey data. As already mentioned, surveys have a sample (and retain the geo-coded record) of private addresses of the general population. Area characteristics taken from local authority /administrative data, the Census and other social surveys are merged with the victimisation survey data via the surveys' unique geo-coded sample point. This serves as a common data record across sources.

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Victimisation surveys do not, however, have a geo-coded record of the location of any crime incident reported during the interview. Therefore an investigation into area determinants of victimisation survey-based crime rates is meaningful only if the victim's address and incident location coincide or are within the same sampling point. This explains why the bulk of this work focusses on property or household crimes (the terms are used interchangeably in the UK), such as burglary, household theft, criminal damage and their aggregate including also motor-vehicle theft (of /from) that occurred within a 15 minute walk from the victim's residence. A 15 minute walk rule is also used for examining area or neighbourhood effects on personal crimes.

Each source has its own advantages and disadvantages. Local authority, other administrative and Census data tell us about the service infrastructure, overall socio-demographic and perhaps health profile of the resident population and some statistics on areas' buildings, such as vacant properties. They provide an immensely rich set of factual information free from sampling errors. This is because administrative data refer to the entirety of the resident population and in some instances, such as school records, the population who routinely visit the area. They fall short however of delineating residents' relations with one another, their sense of belonging in the area or visual clues of area's safety and desirability, such as rubbish and graffiti. Social surveys and observational neighbourhood data are best suited to examine these facets of community life and its physical environment.

A growing body of research is concerned with social capital, community cohesion and collective efficacy all of which are thought to improve quality of life in general and, among other specific outcomes, reduce crime (Bourdieu 1986; Putnam 1993; Sampson 2006; Sampson, Raundenbush, and Earls 1997). Information therefore on social capital measures is collected in social, including victimisation, surveys. Indeed the 1982 BCS had some friendship networks and support information which was readily used to revive, test and expand the social disorganisation theory (Sampson and Wooldredge 1987; Sampson and Groves 1989). Observational data on the physical environment and community relations as observed by outsiders are an additional source of neighbourhood characteristics. They have the potential to reflect closely the environmental clues delineated by criminological theory. Both sources however have limitations with respect to the amount of information they can offer – they can only

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inform on what they had originally been designed and equally important costed to capture.

Social capital questions have been included sparingly and on an ad hoc basis in the BCS/ CSEW. A rough list of these questions over the BCS/ CSEW lifetime is given below:

- Do neighbours help each other?
- Would neighbours intervene if graffiti, fighting or rudeness? / Ask someone to pick up litter.
- Or Intervene with misbehaviour
- Neighbourhood cohesion / Close community / Get on well
- Do neighbours help each other? /Look out for each other
- Influence on local decisions
- Would neighbours participate if asked to solve local issue?
- Involved in civil action
- Volunteering including for neighbours
- Do you trust neighbours? / Know people? / Would wallet get returned?
- Like living here
- Close friends /Relatives in the area
- Borrow money at short notice
- Find somewhere to stay the night at short notice

Researchers have employed them even more sparingly, if at all (Sampson and Wooldredge 1987; Walby and Allen 2004). It is possible, as mentioned, to aggregate answers to these (or any) questions of victimisation surveys within areas in an attempt to tap community effects on crime. When doing so a number of pitfalls should be kept in mind, especially when analysing aggregate responses alongside individual ones (Osborn, Trickett and Elder 1992):

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- (a) Sample aggregates within areas do not represent the area population unless appropriate weights are in place, therefore the estimated, especially unweighted, area effects thus produced are biased ²; and
- (b) From the above it follows that Census or local authority / administrative data on population profile are superior to survey based ones and should be used, whenever possible, to explain area crime variation. Further data from other sources provide independent information to victimisation surveys. This information is also uncorrelated with individuals' routine activities and target attractiveness.

Undoubtedly the most informative examinations of victimisation data focus on how individuals' routine activities alongside areas' environmental conditions and also their interactions influence victimisation risk and frequency (Trickett, Osborn, and Ellingworth 1995; Osborn and Tseloni 1998). These refer to different levels of crime predictors, the individual (micro-) and the area (macro- or meso-, if a higher level of aggregation exists), hence such analyses are called multilevel. Further, to account for the hierarchy in survey data, whereby addresses (and therefore respondents and their households) are clustered at (in other words, selected from each already selected) sampling points (Flatley 2014), multilevel analyses employ in principle hierarchical statistical methodology. To our knowledge, Rountree, Land, and Miethe (1994) pioneered victimisation survey hierarchical analyses of individual and area predictors of crime more than twenty years ago.

Hierarchical models allow examination of (a) individual and area (i.e., multilevel) and their interactions' effects on crime; (b) any random variation of these effects at each level of analysis; and (c) the remaining unexplained variation of crime attributed to each level of analysis (Tseloni 2000; Tseloni 2006; Tseloni and Pease 2015).

Therefore they offer unrivalled disaggregation of crime rates with respect to very finely - including their environment - defined targets and invaluable insights for theory testing and crime prevention. In our opinion they should be the backbone of any practical crime prevention advice (Pease and Tseloni 2014). It is important to know to what extent the at risk population groups are so because of their own

² It is inevitable that measures of neighbourhood and community characteristics from social surveys entail sampling errors. These however should be minimal in high quality surveys whilst testing the internal validity of individual responses arguably offers a safety benchmark.

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attributes (be it routine activities, target attractiveness or a combination) or the structure of their place of residence. In the former case the at risk population groups carry that risk wherever they reside and therefore crime preventive interventions should aim to help these people /households. In the latter risky areas should be the focus of renewal interventions and vulnerable groups should be encouraged and supported not avoid living in. The flipside question is whether areas have high crime rates because of who lives there or due to the areas' own attributes. The former cause is called 'composition' and the latter 'context' effect.

Is crime a 'composition' or 'context' problem? The answer depends on the particular crime type, population group and area examined. Two population groups that have inspired various, including crime prevention, policy initiatives and /or fed policy rhetoric are social renters (another term for residents of public housing) and lone parents (commonly called single parents) (6, Fletcher-Morgan and Leyland 2010). The following evidence of these groups' crime vulnerability draws on hierarchical analyses of the 2000 BCS. Social renters experience between double and ten times the national average household crimes depending on their area of residence (Tseloni 2006, p. 226). With regards to personal crimes they experience 40% more household crimes than owner occupiers regardless of where they live (Tseloni and Pease 2015, p. 17). Turning our attention to the second group on average lone parents experience more crimes than others. This positive association between lone parenthood and property victimisation however varies considerably across areas. Lone parents face up to 28 times more property crimes than non-lone parents of otherwise similar profile in the highest crime areas. By contrast, they face national average property crime rates in the safest areas (Tseloni 2006). Lone parents, specifically divorced or separated with children, experience roughly five times more personal crimes than others (Tseloni and Pease 2015, p. 19). With regards to the starting question of this paragraph, the above four examples demonstrate the following: Social renters are highly vulnerable to victimisation by either crime type wherever they live (composition). With regards to property crime the area they live also matters considerably (composition and context). Lone parents are vulnerable by property crime only in high crime areas (context). By contrast, area does not matter with regards to high personal crime victimisation frequency experienced by those divorced /separated with children (composition). This

knowledge can be used to inform crime prevention interventions as mentioned in the previous paragraph.

To conclude this section, knowing the inter-play between individual and area predictors or to use a term favoured by the team and instigated by one of us ‘Who and in what context?’ avoids wasting efforts and money on ‘one size fits all’ policies. However the criminological community has been slow in adopting hierarchical statistical modelling analyses of victimisation survey data. Running the risk of falling into the composition or context trap ourselves, this is no surprise given that the criminological community has made little use of victimisation survey data anyway regardless of methodology.

III. Benefits and limitations of victimisation surveys in environmental criminology

This is not to say, of course that recorded crime data are of no value: for homicide and theft of vehicles they furnish relatively strong data, at least at a national level, given that homicides are normally discovered and victims clearly cannot be surveyed and that theft of vehicles is reported and recorded at a very high rate due to requirements for crime numbers in the event of the need for an insurance claim. Although key events have led to sudden changes in recorded crime numbers, for example in Britain the development of a National Crime Recording Standard which was actively monitored by the Audit Commission, led to some increase in crime. However, in the short term recorded crime data can be quite a reliable indicator of crime levels and for some analytic purposes it may reasonably be assumed that any biases following reporting and recording practices will not unduly influence conclusions. Moreover, police data can be drawn on in relation to offenders, at least in relation to those crimes that are cleared up. Although victimisation surveys can, as shown below, make some inferences about offenders, they provide little direct information on them.

Notwithstanding their own limitations, however, for the most part victimisation surveys provide a better estimate of the rates of crime that are included in the survey than recorded crime figures in relation to the populations from which the sample is

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drawn, provided that the survey has been conducted in a competent manner. They can also provide some suggestive evidence relating to offenders. Many tend to have rather little to say directly on individual activity patterns albeit that some do include relevant questions.

Recorded crime data are notoriously subject to errors. Not all crimes are reported and of those reported many are not recorded. Moreover there is no reason to believe that shortfalls in reporting and recording are random. The reporting and recording rates of crime vary by country, crime type, police service and community. The risk for environmental criminology is obvious. Patterns in recorded crime may as easily reflect patterns of reporting and recording as they do patterns of crime event.

Victimisation surveys were developed to try to make good major weaknesses in recorded crime data. They were able to quantify the numbers of crimes that are omitted from recorded crime data. International victimisation surveys adopt the same methods in different jurisdictions and hence allow comparisons between countries. National crime victimisation surveys, where sample sizes are big enough, can be used to compare crime rates by area within countries.

Victimisation surveys are weaker in relation to relatively rare crimes where sample sizes are insufficient to yield meaningful findings. National sample surveys are able to say little about patterns in micro areas, for example street networks although this may be possible with very local surveys (see Umar et al this volume). Data on the timing of incidents is even less reliably collected through surveys than through recorded crime data unless diaries based on memorable dates within the reference period are employed. Non-response is a further problem. Early BCS/ CSEW, for example, sweeps enjoyed very high response rates, but these have fallen slightly recently. Moreover, response rates where the target population comprises businesses have been lower than response rates where the target population comprises households or individuals. Many victimisation surveys have been confined to those above a certain age and hence omit crimes targeting the young. Sample frames can omit highly vulnerable populations, such as the homeless and transient. Sample frames also normally omit visitors to a country, who may be vulnerable.

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In answering questions about their experiences of crimes, well-designed surveys try hard to avoid errors that spring from respondents failing to assign crimes to the period about which they are being asked to recall, but there are clearly dangers of both including crimes that fall outside the reference period or omitting those that do. Well-designed surveys also try to obtain sufficient detail of crime incidents to make sure that they are allocated to the correct crime category, where everyday language might place them in the wrong one. But again, there is inevitably some scope for error here.

<TABLE 3 ABOUT HERE>

IV. Why is More Use Not Made of Victimisation Surveys in Environmental Criminology?

Victimisation surveys can be technically complex to use. The 2013-2014 Crime Survey for England and Wales (CSEW, formerly BCS), for example, ran to over 260 pages, including all modules, some of which were only asked of sub-sets of respondents. The technical guidance runs to 84 pages. The availability of the questionnaires and the technical support documents help avoid errors, of course, but they are testament to the difficulties faced by the crime scientist hoping to use the data.

There are some changes in repeated surveys from sweep to sweep making trend identification quite difficult. The crime surveys in different countries vary in more or less subtle ways, making comparisons for many findings difficult. The survey is undertaken to meet multiple needs, most of them administrative, meaning that when used for purposes not originally envisaged key questions are not asked or are asked in ways that make compromise some analyses of the data.

The CSEW survey now includes questions relating to traditional crimes such as domestic burglary and theft of and from cars. There is a separate exercise to collect data on the crimes experienced by 10-15 year olds. It also has questions on domestic violence, sexual offences, cybercrime, mobile phone crime and fraud. There are sections on respondents' own offending and on their drinking and illicit drug taking.

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It also includes questions relating to experiences of the criminal justice system and views on how it is functioning. It contains background questions on household composition, employment, leisure activities, driving habits and respondent's age, sex and ethnicity. There are suites of questions relating to precautionary behaviour, household security and vehicle security measures. The sample size and selection methods are set to allow meaningful analysis of crime patterns nationally (while representativeness by police force area was limited to the 2004/05 BCS/ CSEW). The sample choice methods mean ordinarily that it is essential to work with weighted data.

This is to say that the CSEW (or other victimisation surveys in other jurisdictions and relating to businesses as well as to individuals and households) may be a potential treasure trove for environmental criminologists in their efforts to test their hypotheses, but it is not for the faint-hearted. For ourselves, building on previous work with the CSEW, at the time of writing we are undertaking research on routine activities and violent crime and have a further grant to examine patterns of experience of antisocial behaviour. In our research endeavours we have benefitted from advice from advisory group members who are involved in administering the CSEW. Notwithstanding the extensive experience of some members of the research team this advice has been invaluable and helped us avoid errors. It is also the case that research assistants who have come to work with us have been inducted into the complexities of the CSEW. Although the data are freely available to researchers to download and to use, in practice doing so without a helping hand from someone who has already made use of the survey would be difficult and would risk serious errors.

Conclusion

Environmental criminologists have dedicated much attention to the analysis of patterns of activity of detected offenders and the locations of crimes reported to the police, but less so on patterns identified in victimisation surveys. In this chapter, analyses of the settings or conditions that affect victimisation risk and frequency have been presented for various types of crime. The benefits and limitations of using victimisation or population surveys in environmental criminology have also been discussed. Crime surveys are expensive and complex to run. They are also complex to

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use properly. They are insufficiently and inadequately drawn on, despite comprising the most robust data available on most types of crime.

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Author's bioline

Graham Farrell is Professor of International and Comparative Criminology at the School of Law, University of Leeds. His broad research interest is in Crime Science, particularly situational crime prevention – designing-out and nudging people away from crime with recent research on why crime has been declining in many countries – the ‘crime drop’.

Nick Tilley is a member of UCL's Jill Dando Institute of Crime Science. He is also an Emeritus Professor of Sociology at Nottingham Trent University and an Adjunct Professor in the Griffith Criminology Institute in Brisbane. Long-term research interests include the global crime drop, programme evaluation methodology, situational crime prevention, and problem-oriented policing.

Andromachi Tseloni is Professor of Quantitative Criminology and leads the Quantitative and Spatial Criminology Research Group at Nottingham Trent University. She is currently Treasurer of the British Society of Criminology and member of the Nottingham Crime and Drugs Partnership Board. Her research revolves around crime victimisation and inequalities; the ‘crime drop’; crime perceptions; social capital; and cross-national comparisons.

Table 1: Routine Activity Theory victimization survey indicators

Element of Routine Activity Theory	Indicator	Variable
Target exposure	Residence type	Detached/semi-detached
		Terraced/Row
		Flat/Apartment
		Other
Social guardianship/ occupancy	Household composition	Number of adults in household
		Includes children
		Lone adult
		Marital status
	Divorced	
	Separated	
	Widowed	
	Employment status	Separated
		Full time
		Part time
		Home maker
		Retired
Sick/disabled		
Social guardianship	Lifestyle indicators	Hours house left empty
		Evenings out per week
		Time shopping
Physical guardianship	Physical security	Participation in neighbourhood watch
		Presence of security measures (including locks, lights on when house empty, lights on timer/external lights, burglar alarm/dog)
Target attractiveness	Income	Average income
		High income
		Low income
	Most recent educational level	Primary school
		Middle school
		High school
		University degree
	Cars	None
		One
		Two
Three		
Four of more		
Proximity to potential offenders	Type of area	Urban

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		Non-urban
		Level of urbanisation
	Population	Population of area of residence

Table 2. Type of offence by whether or not it occurs within 15 minutes of where the victim lives

Type of crime	Total offences	Per cent occurring beyond 15 minutes of where the victim lives
Snatch with stealth (including attempts)	408	72.8
Personal theft (excluding snatch with stealth)	730	70.8
Robbery (including attempts)	157	49.0
Common assault (including attempts)	668	42.8
Wounding (including sexual)	283	41.7
Threats	851	39.1
Theft from vehicles	1,440	32.2
Theft of vehicle	337	28.5
Attempted theft of vehicle	622	25.7
Bike theft	1,384	20.8
Vehicle vandalism	431	20.2
Other vandalism	992	8.3
Burglary in dwelling	864	5.7
Burglary in outhouse	468	4.3
Other household theft	965	3.4

Note: Unweighted data

Table 3: Victimization surveys and recorded crime as data sources for environmental criminology

Types of information	Victimization survey	Recorded crime
Time of incident	Incidents during reference period	Report time and data stamped Earliest and latest time
Information on offenders	Little – victim views	Data on arrestees
Comprehensiveness	For those sampled all crimes covered in survey	All recorded crimes
Repeat incidents	In principle all, in practice capped	Those recorded, depends on reporting and recording levels
Location of incident	General information on attributes of location Geocoded sampling point of residence	Geocoded
Environment of incident	Observations of fieldworker and/or as covered by survey instrument	Not directly recorded
Geographical concentration of incidents	By specific area for crime at or near home	By specific area
Target attractiveness	Often information on security for targets and non-targets and precautionary activities of victims and non-victims	Sometimes security of some targets
Routine activities of victims and non-victims/ awareness spaces	As covered by survey instrument, often same information on victims and non-victims	Generally no information, although sometimes some information on victims
Routine activities of likely offenders /awareness spaces	Generally no information As perceived by victims (drugs and alcohol influence)	Generally no information
Routine activities of guardians	As covered by survey instrument, often some information	Generally no information
Routine activities of handlers	As covered by survey instrument, often some information	Generally no information
Change over time	For repeated sweeps good trend data	Uncertain, depends on consistency of reporting and recording