Introduction

Shane D. Johnson, Kate J. Bowers and Alex F.G. Hirschfield¹

This Special Issue of Crime Prevention and Community Safety: An International Journal is based on papers presented at the 10th International Seminar on Environmental Criminology and Crime Analysis (ECCA), held in Liverpool in June 2001. This annual event began in 1992 and has been held at many locations around the world, including North America, Australia, Japan, South Africa, Norway and Spain.

Environmental criminology as a discipline

The last six decades have seen the emergence of studies that pose questions about the way in which crime manifests itself spatially, and about the underlying reasons for this manifestation. The general area that addresses this issue has become known as the study of 'environmental criminology'. There are two central concerns in modern environmental criminology: describing and explaining the spatial (and temporal) distribution of offences; and describing and explaining the spatial (and temporal) distribution of offenders.² A further central concern is the issue of preventing crime through the manipulation of environmental factors; this is known as 'situational crime prevention', and is closely linked to theories of environmental criminology.

Some of the central theories in environmental criminology include routine activity theory³ and rational choice theory.⁴ Routine activity theory postulates that there are three elements required before a criminal offence can take place: a motivated offender; the absence of capable guardians against crime; and the presence of a suitable target. In order for a criminal offence to be possible, these three elements must converge in time and space. The last two elements are central to the production of an opportunity to commit a crime, and situational crime prevention has thus focused on manipulating them.

The events in time and space at which these three elements converge depend upon the way in which potential victims (and, indeed potential offenders) move around in their day-to-day-lives. In other words, the 'routine activities' of individuals influence the way in which opportunities for crime arise. In turn, these routine activities will be linked to the way in which we use and visit different places at different times.

Rational choice theory has also been influential in the understanding of the way in which crimes are distributed spatially, since it looks at the way in which offenders make choices about targets of crime. Some research has taken an economic perspective on such decision-making, asserting that (at least) property crime (ie crimes such as burglary or theft) can be explained as the result of a rational decision on the part of the offender.⁵ According to this theory, offenders consider both the potential costs and benefits of committing a crime, including the chances of apprehension, the costs associated with the journey to crime, and the expected reward from a particular offence.

The scenario with the highest *net benefit* is chosen. By manipulating such factors through situational crime prevention, it is possible to decrease the likely net benefit of a particular target.

One of the central debates in environmental criminology is the extent to which taking a situational approach to crime prevention is effective. Situational prevention often involves securing targets of crime (for example by fitting new locks), or increasing levels of surveillance (for example by installing CCTV cameras). It has been argued that there are drawbacks to this approach, the two main issues being that it treats the symptoms and not the cause of crime, and that it might simply displace crime to other areas and other targets. As regards to the former issue, it is worth noting that Felson and Clarke⁶ have argued that ultimately this approach may treat the cause as well as the symptoms, since crimes cannot occur in the absence of opportunity, irrespective of an individual's propensity to offend. With respect to displacement, a growing body of evidence⁷ suggests that where displacement does occur, it is not necessarily absolute, and in many cases a diffusion of benefit may occur, whereby untreated properties or people experience reduced risks following the implementation of a particular intervention.

Alternative approaches to situational crime prevention include offender treatment or educational schemes that attempt to prevent offending behaviour or to reduce recidivism. Such approaches might be seen as attempting to treat the cause of crime to a greater extent.⁸ However, they have drawbacks of their own, such as the length of time it takes for any effect, if successful, to become apparent. One of the advantages of a situational approach is that action can be fairly immediate when required, which should reduce the vulnerability of a particular victim within a short time scale. Such specificity in resource targeting clearly serves to protect those most at risk, thereby reducing their fear of crime as well as their vulnerability. This is not only an efficient approach, but is also morally just. However, it should be noted that the degree to which any reduction in vulnerability is sustained is a further issue of debate within the discipline.

Environmental criminology as a science

The section above has outlined some of the central ideas and concerns in environmental criminology. It is difficult to deny that it is a rapidly expanding field, and there is evidence of this from a number of different sources. First, the current policy context for the prevention of crime is very much focused on using information on the spatial and temporal distribution of crime to highlight priorities for action. For instance, Crime and Disorder Audits are now a legal requirement for all local authorities in England and Wales. Second, there are a rapidly expanding number of concepts and issues that are addressed by environmental criminologists. The diversity of these can be illustrated by considering some of the themes of this year's seminar, a selection of which are as follows: studies of burglary offenders, victims and repeat victims; the theoretical and empirical study of crime displacement; evaluations of crime prevention initiatives; campus crime and security; methods of designing-out crime; problem-orientated policing techniques; studies of situational crime prevention; the use of geographical information systems (GIS) in policing and research; and offender targeting techniques. These represent just a sub-set of the issues examined by a multi-faceted field. Furthermore, there is increasingly specialism amongst criminologists associated with the field. For instance, some concentrate on and are best known for their work on offender-profiling, others on evaluation research, others on crime-mapping, and so on. Such specialisms naturally occur as a field develops. Moreover, it is also evident from the growth in the number of delegates and the number of countries represented at events such as ECCA that the field is expanding. It is estimated that there were twice the number of individuals attending the 2001 meeting than attended the meetings in the early 1990s.

A development strongly linked with environmental criminology and situational prevention is the launch of the Jill Dando Institute of Crime Science this year, based at University College London.

The Director of the Institute, Professor Gloria Laycock, is advocating the concept of 'crime science'. The traditional image of criminology has perhaps been closely associated with disciplines such as sociology, psychology and, more occasionally perhaps, geography. However, it can be argued that the field considered here is closer to the concept of pure science than are other 'social' sciences. The scientific method is concerned with the formulation of theories and hypotheses and the use of empirical evidence to support or refute such formulations. Increasingly, such testable hypotheses are emerging in environmental criminology. Some examples of these might be: that burglary offenders tend to target houses with similar layouts; that schools are at higher risk of victimisation than other non-domestic buildings; that violent crime is related to alcohol consumption; that visible CCTV cameras are more effective than covert cameras at reducing crime; and so on. With increasingly accurate police recording systems, more widely available data and advances in quantitative research methods, it is no longer necessary to be limited to theoretical debates concerning these speculations. Rather, it is becoming more and more possible to undertake empirical hypothesis-testing. It is likely that this practice will become even more widespread in environmental criminology in the future, which will lead to a solid evidence base for academics and practitioners alike.

Contents of the Special Issue

The Special Issue is guest-edited by the three authors of this introduction. It brings together papers written by environmental criminologists from around the world, and illustrates some of the diversity of the field and the different approaches adopted. The first paper, by Emma McDonagh, Richard Wortley and Ross Homel, examines the issue of joyriding in Australia. It focuses on three different perspectives for the prevention of joyriding: the first looks at deterrence, in terms of both criminal sanctions (eg convictions) and less formal sanctions (such as injury/loss of life); the second looks at situational measures (eg those that increase the perceived effort/risk of stealing cars); the third looks at combating neutralisations for joyriding (eg challenging the belief that it is the victim's fault for allowing the car to be stolen). The paper argues that a broad approach should be taken to the prevention of joyriding.

The second paper, by Carlos Carcach and Glen Muscat, examines a more quantitative issue, which is concerned with methods of measuring and comparing local concentrations of crime over time and across areas. Specifically, they show how using location quotients of crime (LQCs), which examine the share of crime in a particular location or at a particular time in connection to a reference area or time period, can be powerful tools in testing hypotheses concerning expected distributions of crime. They illustrate how LQCs can be used to identify the crime structures and track the 'crime careers' of various areas, using data from two Australian localities.

The third paper, by the American criminologist Marcus Felson, deals with the topography of crime, ie the production of detailed descriptions of the location of crimes. Topography covers both natural and man-made physical features of a particular place. The paper argues that much can be gained from examining crime locations at this level, and advises that practitioners and academics alike can significantly add to their interpretation and explanation of crime patterns by taking aspects of topography into account. These additional insights are often lost in the more routine approaches that characterise, for example, most security audits. It is envisaged that by recording the topography of crime locations, a wider body of knowledge will be available to contribute to higher-level theories in environmental criminology.

The final paper, by James LeBeau, describes research that investigates the effect of extreme weather conditions on the distribution of calls for service made by the police. Specifically, it looks at the effect of Hurricane Hugo on calls for service in the city of Charlotte in North Carolina. Findings of the research included a major increase in the volume of calls for service during and

for a few days after the hurricane. There was also a shift in the temporal distribution of calls made to the police in this period. The frequency of calls was affected by barometric pressure and by wind speed. Significantly, for the days following the hurricane, the temporal pattern of calls changed to reflect a population undertaking discretionary activities, rather than obligatory ones, since the routine activity of going to work was temporally disrupted. Further changes were seen in the type of call for service. Of particular interest is the fact that domestic trouble, burglary and man-with-gun calls increased significantly. This shows that the hurricane had an effect on people's usual behaviour. The police were also busier than usual with calls concerning service and maintenance functions, as well as crime-fighting calls.

Notes

- 1 Shane Johnson and Kate Bowers are Research Fellows, and Alex Hirschfield is a Reader in Urban Research, in the Environmental Criminology Research Unit (ECRU), Department of Civic Design, University of Liverpool, Liverpool L69 7ZQ.
- 2 Bottoms, A.E. (1994) Environmental Criminology. In Maguire, M. (ed.) *Oxford Handbook of Criminology*. Oxford: Clarendon Press.
- 3 Cohen, L.E. and Felson, M. (1979) Social Change and Crime Rate Trends: A Routine Activity Approach. *American Sociological Review*. Vol. 44, pp 588–608.
- 4 Cornish, D. and Clarke, R.V. (1986) *The Reasoning Criminal: Rational Choice Perspectives on Offending*. New York: Springer Verlag.
- 5 Hakim, S. and Rengert, G.F. (1981) *Crime Spillover*. Beverly Hills, CA: Sage.
- 6 Felson, M., and Clarke, R.V. (1998) *Opportunity Makes a Thief: Practical Theory for Crime Prevention*. Police Research Series, Paper no. 98. London: Home Office.
- 7 See for example Hesseling, R.B.P. (1994) Displacement: A Review of the Empirical Literature. In Clarke, R.V. (ed.) *Crime Prevention Studies*, Vol. 3. Monsey, NY: Criminal Justice Press; see also Hamilton-Smith, N. (in press) Anticipated Consequences: Developing a Strategy for the Targeted Measurement of Displacement and Diffusion of Benefits. In Clarke, R.V. (ed.) *Crime Prevention Studies*. Monsey, NY: Criminal Justice Press.
- 8 But see Felson and Clarke, op cit.