The role of Crime Mapping in prevention: more than just pretty maps

Many tools and techniques can be employed in the pursuit of preventing crime. One in particular, which transcends organisational boundaries and conflicting departmental priorities, is the approach of mapping crime alongside other related variables. In recent years the realisation that crime can be explained and understood in more depth when exploring its geographical components has led to it becoming a central tool within policing and crime reduction agencies.

'Crime mapping' can be thought of as the geographical exploration and visualisation of crime. To frame it within its academic milieu, it is the research field of Geographical Information Systems (GIS) synthesised with the practical modern-day issues which affect the Criminal Justice System. GIS is also the term we give to 'a computer system for capturing, managing, integrating, manipulating, analysing and displaying data which is spatially referenced to the Earth' (McDonnell and Kemp, 1995:42). Containing powerful functionality, these software packages allow the user to analyse crime data in a myriad of ways. Underpinning the technical attributes of crime mapping (i.e. which buttons to press on the computer application), are several interconnected theories on the geography of crime. These form a practical subset of mainstream criminology, known as 'environmental criminology'. Such theories play a vital role in understanding some of the drivers of offending behaviour and should be studied by anyone attempting to use crime mapping as an analytical technique.

To consider crime in its simplest form Brantingham and Brantingham (1981) have broken it down into the following four dimensions that every crime possesses:

1. A legal dimension (a law must be broken);
2. A victim dimension (someone or something has to be targeted);
3. An offender dimension (someone has to commit the crime); and
4. A spatial dimension (it has to happen somewhere).

Environmental criminologists are drawn to focussing their attention on the latter of these, where spatial dimension is defined as a place in space and time. This is due to the fact that one of the most undisputed and reoccurring research findings within criminology in the last century is that the majority of crime types cluster in space and time. This is by virtue of crime having an inherent geographical quality (Chainey and Ratcliffe, 2005). The general agreement within environmental criminology therefore, is that it is far easier to consider where opportunities to commit crimes are clustered (and are therefore rife) and try to design ways to block those opportunities, than to try and change human behaviour en masse.

Crime prevention can be considered as a two-pronged approach, firstly averting any persons from starting to commit crime and secondly intervening in persons who have already committed offences before any additional activity results (Brantingham and Faust 1976). Crime mapping offers considerable scope to intercede in both of these situations. For example, one might analyse where the greatest concentrations of offenders released from prison are residing in order to strategically place rehabilitation services. Or perhaps one could start to disentangle the complex relationships between social deprivation, community cohesion and clustering of hate crime to better understand neighbourhood dynamics. The uses are almost infinite, as a GIS is not limited to simply displaying data on a map, but enables many different layers of area based data (e.g. population, schools, deprivation, housing, pedestrian footfall, sites of interest) to be interrogated either in conjunction with, or separately from crime data.

Hotspot analysis within policing is the most common application of GIS to crime data, alerting the police to where there are greater concentrations of crime when compared to the wider area under study (which can be as localised to the neighbourhood level or as wide as a police force). There are a number of uses for hotspot maps; they can play a role in briefing police patrols, who can inhibit offending by patrolling (either in vehicles or on foot) in an intelligent manner. They can be used for accountability amongst police

leaders. The identification of hotspots can sometimes be enough to coerce crime prevention activity. For example, if a housing estate features within a compact residential burglary hotspot, this alone is enough evidence to send some PCSOs or community wardens to the location to distribute crime prevention advice to residents. Maps can feature in tactical or strategic planning meetings so that decision makers are aware of where resources need to be deployed. Very often a map is merely the starting point; the powerful visual outputs created foster curiosity and provoke thought which enhances debate around prevention strategies.

When designing successful crime prevention initiatives it is first essential to comprehend the underlying causes, or what is driving a crime problem to manifest in the way it does. This encompasses an appreciation of where events cluster in space and time, which can help to illuminate any mechanisms which are working to exacerbate the problem. Problem solving techniques have now been widely adopted within Crime and Disorder Reduction partnerships (CDRP), and are heavily endorsed by governmental guidance. Such analyses focus on specific, recurring problems and aim to remove the causes of crime by identifying problems that require attention (Clarke and Eck, 2003). Intrinsic to problem-solving analysis is the diagnosis of a crime problem, and mapping can help to drill down into the data to define what is going on. The more specific our knowledge about crime problems, the better we understand what is going on and, as a corollary, the better equipped we are to implement successful intervention initiatives.

Geographical profiling is another technique that seeks to prevent crime. Instead of trying to reduce the opportunities at a particular location, it aims to get a series of crimes detected, thus incapacitating the offender and preventing them from committing further offences. Geographic profiling is an investigative aid, an approach which is used in conjunction with a raft of other investigative strategies to prioritise suspects or resources (Rossmo, 2000). It uses what environmental criminology has taught us about how offenders interact with space, and applies these findings to construct maps which allude to where an offender's anchor point (i.e. home or work site) is likely to be

situated. Geographic profiling was originally used in serious, serial crime patterns in order to maximise the best opportunities for apprehending an offender and bringing them to justice. More recently however, this technique is being refined so that it can be applied to more volume crime types such as burglary and vehicle crime.

Crime mapping has increased in sophistication in recent years and many academics and practitioners are now looking at ways in which to look prospectively at crime patterns, instead of the traditional manner of looking back at what has happened in the past. Crime forecasting is thus an extremely exciting research agenda at present; if crime can be predicted, it tangibly follows that it can be prevented. Research being conducted at the Jill Dando Institute of Crime Science is devising and refining new ways of predicting where crime will happen using the evidence base that environmental criminology has provided. For example, research conducted on burglary shows that it exhibits communicative properties, that is the risk to houses surrounding the original burgled premises are at an elevated risk for a short time period after (Bowers, Johnson and Pease, 2004). Other research has shown that by breaking hotspots down into different police personnel shifts, crime patterns differ over the course of the day and can be used tactically to deploy crime prevention measures. Hence prospective mapping, although in its infancy, is a thrilling enterprise and one that is sure to develop further in the coming years.

Crime mapping cannot prevent or solve crime independently. It requires a dedicated number of Criminal Justice System staff to generate, interpret, understand and react on the outputs it creates. Crime mapping increases our understanding of crime problems and can begin the process of really getting to grips with what would best prevent those offences from continuing. Crime mapping can therefore play a vital role within criminal justice agencies and consequently the united goal of crime prevention.

References

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