



## **Chapter VIII**

# **Geographic Profiling and Spatial Analysis of Serial Homicides**

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## **Abstract**

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*The characteristics of the crime of serial homicide are examined, the concept of geographic profiling is presented, and the application of geographic information system (GIS)-based spatial analysis techniques to the investigation of serial homicide investigation are discussed in this chapter. The case of serial killer Robert Yates, in which geospatial technologies played a prominent part, is detailed.*

## **Introduction**

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Of all the many crimes committed in our diverse and all-too-often-violent society, none elicits more attention from both the public and the police than homicide. This is particularly true of the nefarious activities of multiple, mass and serial

murderers. Serial killings titillate the public, fixate the media, and complicate the task of law enforcement, not the least because they may involve crimes committed in multiple jurisdictions. The recent case of the Washington, D.C., area snipers perfectly illustrates these phenomena, including the challenges posed to law enforcement by offenders that commit crimes in multiple jurisdictions. A large literature has developed around the theoretical under-pinnings of serial homicide investigation, in particular the topic of profiling (Turvey, 1999). More recently, a concept termed geographic profiling has been propounded (Rossmo, 2000). GIS have been helpfully applied to the analysis of a wide variety of crimes (Leipnik & Albert, 2003), but analysis of serial homicides covering a wide geographic area highlight several important advantages of the technology. These include the use of GIS to perform spatial and geo-statistical analysis, to portray multiple features in co-registered layers, to show the spatial proximity of features in the community such as areas of potential offender residence, access and/or concealment to crime incident locations, and not least, to display spatial data for areas extending beyond the jurisdictional boundaries of a single city, county, state or even a single nation. In addition to GIS per se, related technologies such as global positioning systems (GPS) and, to a lesser extent, digital aerial photography are figuring more frequently of late in serial homicide investigations (Leipnik & Albert, 2003).

## **Background: Natural History of Serial Killers**

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Homicide takes a number of diverse forms, ranging from reckless and drunken driving to domestic and alcohol-fueled disputes, to murder for gain, and finally, to not only premeditated crimes, but to multiple murders where murder is the primary objective of the killer's life. These latter crimes are universally regarded as among the worst of offenses. Even among premeditated killings of multiple individuals there is a range of behaviors exhibited. Thus one can differentiate among mass murders, sequential murders of known victims and serial killings of strangers. Mass murders tend to be short duration outbursts of often long-suppressed rage. Usually, solving mass murders is straightforward for police with the by-then suicidal killer frequently being the last victim of the spree. Multiple murders of victims well known to the killer include the classic crime of poisoning relatives and the increasing number of killings by health professionals. The Dr. Harold Shipman case in Hyde, England, may be the most egregious example. Even ascertaining the number of victims in such cases is problematic.

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