Crime Mapping Case Studies: Practice and Research

Editors

Spencer Chainey and Lisa Tompson

University College London
Jill Dando Institute of Crime Science

John Wiley & Sons, Ltd
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Dedications

Spencer Chainey: To Victoria, Oscar and Isaac
Lisa Tompson: To Stephen, Karen and Nik
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List of contributors

Jill Barclay, Technology Manager: GIS, Information Communications and Technology Service Centre, New Zealand Police, PO Box 50040, Porirua, New Zealand

Rachel Boba, Treasure Coast Campus, Florida Atlantic University, 500 NW California Blvd, Port St Lucie, FL 34986, USA

Ian Bullen, Strategic Analytical Partnership Coordinator, Community Safety Team, Greater Manchester Against Crime, 17–19 The Wiend, Wigan WN1 1PF, UK

David Canter, Executive Director, International Centre for Investigative Psychology, School of Psychology, The University of Liverpool, Eleanor Rathbone Building, Bedford Street South, Liverpool L69 7ZA, UK

Tom Casady, Chief of Police, Lincoln Police Department, 575 S. 10th Street, Lincoln, NE 68508, USA

Clare Daniell, Crime Operational Support, National Policing Improvement Agency, Bramshill, Nr Hook, Hampshire RG27 0JW, UK

Gregory Day, Senior GIS Specialist, Geographic Information Management Systems, 461 Innes Road, Durban 4001, Republic of South Africa

Marcus Ferreira, Lieutenant Colonel and Criminal Analyst, Instituto de Segurança Pública, Avenida Presidente Vargas, n° 817–11° e 16° andar, Centro, Rio de Janeiro, Brazil

Andy Gilmour, Business Analyst, Applications Development, Information Communications and Technology Service Centre, New Zealand Police, PO Box 50040, Porirua, New Zealand

Liz Groff, Assistant Professor, Criminal Justice Department, Temple University, 1115 W. Berks Street, Philadelphia, PA 19122, USA

Derek Johnson, Strategic Analyst, Information Management Unit, Dorset Police, Bournemouth Police Station, Madeira Rd, Bournemouth BH1 1QQ, UK
Tim Mashford, State Intelligence Services, 10/412 St Kilda Rd, Melbourne 3004 VIC, Australia

Ana Paula Mendes de Miranda, Governo do Estado do Rio de Janeiro, Instituto de Segurança Pública, Avenida Presidente Vargas, nº 817–11° e 16° andar, Centro, Rio de Janeiro, Brazil

Alice O’Neill, Higher Intelligence Analyst, NIM Development Unit, West Midlands Police HQ, Lloyd House, Colmore Circus, Birmingham B4 6NQ, UK

Dave Ottiwell, Data and Analysis Development Manager, Community Safety Partnership Team, Greater Manchester Against Crime, Divisional and Partnership Support Unit, 4th Floor, Chester House, Boyer Street, Manchester M16 0RE, UK

Chris Overall, Project Manager, Crime Mapping and Analysis Project, Durban Metropolitan Police Service, Box1172, Durban 4001, Republic of South Africa

Jon Poole, Research and Intelligence Manager, Bath and North East Somerset Policy and Partnerships, Bath and North East Somerset Council, Bath Police Station, Manvers Street, Bath BA1 1JN, UK

Steven Rose, CDRP Manager for Rugby Borough Council, Chief Executives Office, Rugby Town Hall, Evreux Way, Rugby CV21 2RR, UK

Kim Rossmo, Research Professor and Director, Center for Geospatial Intelligence and Investigation, Department of Criminal Justice, Hines Academic Center, Room 120, Texas State University, 601 University Drive, San Marcos, Texas 78666-4616, USA

Lorie Velarde, Crime Analyst, Irvine Police Department, 1 Civic Center Plaza, Irvine, CA 92606, USA

Chris Williams, Community Safety Strategic Partnerships Officer, Safer Merton, 3rd Floor Athena House, 86–88 London Road, Surrey SM4 5AZ, UK

Donna Youngs, Managing Director, International Centre for Investigative Psychology, School of Psychology, The University of Liverpool, Eleanor Rathbone Building, Bedford Street South, Liverpool L69 7ZA, UK
Preface

Crime mapping combines a progressive blend of practical criminal justice issues with the application and research field of geographical information systems (GIS) (Chainey and Ratcliffe, 2005). It is a field that has seen increased growth in both the developed and developing world over the past ten years, with police and crime reduction agencies using it to aid intelligence development, criminal investigations, crime prevention, performance improvement, information sharing and crime reduction.

Crime Mapping Case Studies: Practice and Research helps to document developments and applications of crime mapping by providing real work examples, practical solutions, and the presentation of new techniques that can be applied to policing and crime reduction. Several good texts now exist on the subject of ‘crime mapping’ (e.g. GIS and Crime Mapping by Chainey and Ratcliffe, 2005 and Mapping Crime: Principles and Practice by Harries, 1999) that explain many of the approaches, methodologies and techniques that have developed or can be applied to crime mapping. We attempt to add to these by illustrating in this book how crime mapping is being applied around the world.

This book intends to build on the two volumes on Crime Mapping Case Studies: Successes in the Field (edited by Nancy LaVigne and Julie Wartell) published by the US Police Executive Research Forum. These volumes discontinued after 2000, but played a key role, particularly in the USA, in helping to raise awareness on how crime mapping can be applied. We aim to take forward the spirit of these publications in this book, and if popular into a continual series that will document many other case studies. A difference between this book and its USA predecessor is that it does not just include ‘successes in the field’. Instead it also includes examples that demonstrate problems associated with implementing crime mapping and its application, importantly highlighting mistakes and challenges that others can identify with, avoid and learn from.

Each case study in this book either demonstrates a particular application, analytical technique or new theoretical concept, and is written in a style that is accessible and concise. We also hope that the book provides a focus for helping exchange good practice on what works. Indeed one of our motivations for putting this book together was to help to better document many of the excellent presentations that we see
at the UK and US Crime Mapping Conferences each year (see www.jdi.ucl.ac.uk and www.ojp.usdoj.gov/nij/maps). We have therefore eagerly sought out what we have considered are some of the good examples of crime mapping that have been presented at these conferences. In doing so, this has helped meet our desire to encourage practitioners to document their work and share it for others to learn. So, several of the contributions you will read in this book have been written by police and crime reduction professionals, including analysts, GIS officers, public safety practitioners and even a Chief of Police! We have also sourced several other case studies from practitioners that we have come across in our travels. In particular, we thought it important to not just illustrate UK and USA examples (where crime mapping is most developed), but gather contributions from Australia, New Zealand, South Africa and Brazil. We hope that together, these case studies offer something to all readers, regardless of their maturity in developing crime mapping and where they are in the world.

The book also includes valuable contributions from established researchers in crime mapping, providing them with an outlet to capture examples or developments of their work, and for you to learn from them in a publication that is more accessible than academic research journals.

The case studies have been grouped into five parts. Part I begins by describing several examples of ‘Developing crime mapping’. We begin in New Zealand where Rick McKee and colleagues from New Zealand Police describe how they have been developing GIS and crime mapping tools to assist their police colleagues in tackling crime. Ana Paula Mendes de Miranda and Marcus Ferreira then describe how they have developed a technique to help overcome the challenging task of geocoding crime records in Rio de Janeiro, Brazil. By addressing this it is now helping them to gather further momentum in demonstrating the value of geographical crime analysis for policing improvements in Rio. This is followed by Tim Mashford, capturing how Victoria Police in Australia have met the challenge in implementing crime mapping within a large law enforcement agency. Part I is then nicely rounded off by Tom Casady, Chief of Police of the Lincoln Police Department, Nebraska, USA. Tom eloquently describes how Lincoln have taken crime mapping to the next level by automating many of the standard reports and functions that can plague the analysts’ time, freeing them up for more tasks that take better advantage of their analytical expertise. This crime mapping automation includes ‘threshold alerts’ that help to keep his troops updated on crime patterns.

Part II presents four case studies on ‘Geographical investigative analysis’. Kim Rossmo, former Vancouver Police cop and now at Texas State University describes the principles and methods behind geographical profiling. He also has argument over some of the ways in which several researchers have attempted to measure geographical profiling success. He illustrates these points with an example of a
burglary series in California. The practical application of geographical profiling is then added to by Claire Daniell from the UK’s National Policing Improvement Agency. Claire discusses many of the challenges that are presented to a geographical profiler in their analysis, and uses an example of a series of sexual assaults in the city of Bath to demonstrate these. Chris Overall and Gregory Day from the Durban Metropolitan Police Service, South Africa provide the next case study by describing their use of a probability grid method for helping to explore the spatial patterns of an armed robbery series. The operational use of geographical analysis for supporting police investigations is also then illustrated by Tom Casady who shows how Lincoln Police applied spatial analysis principles to arrest Roosevelt Erving, a bank robber who had previously gone undetected for over four years.

‘Neighbourhood analysis’ provides the theme of Part III. Alice O’Neill from the UK’s West Midlands Police Force describes how they have been applying crime mapping to assist in the strategic allocation of police and crime reduction resources to effectively implement Neighbourhood Policing and their Community Safety Plan. In particular Alice refers to the Strategic Threat and Risk Assessment Index (STRATi) they have developed to help protect the public, promote community stability and reassurance, and reduce victimization. Ian Bullen then provides the first of two case studies from Greater Manchester (UK), describing how they have used and built upon the Vulnerable Localities Index to assist in the identification and strategic analysis of priority neighbourhoods. Dave Ottiwell, also from Greater Manchester Against Crime takes the theme of neighbourhood analysis further by demonstrating how strategic analysis of offenders and their assessment profiles is helping to inform local strategies for reducing re-offending.

Part IV captures three UK examples that illustrate how survey and visual audit data can be incorporated into crime mapping applications, rather than relying only on recorded incident data. Steve Rose from the Birmingham Community Safety Partnership introduces this theme by demonstrating how they have integrated data from their ‘Feel the Difference’ survey of local residents to help understand those communities where feelings of fear, concern and worry about crime and anti-social behaviour are highest. He also describes how they have included data from an environmental visual audit to help target the Partnership’s reassurance work. Chris Williams (London Borough of Merton) then explores how the fear of crime can be explored at the micro- (street) level by targeting and interpreting residential surveys. This is then followed by Jon Poole who describes the Bath and North East Somerset Community Safety and Drugs Partnership’s approach to better understanding incidents of crime and anti-social behaviour that are related to the night-time economy. This case study particularly highlights the importance of this type of survey work for helping to better understand the problems that relate to alcohol influenced incidents.