Contents

List of contributors xiii
Preface xv

Part I Developing crime mapping

1 Developing geographical information systems and crime mapping tools in New Zealand 3
   Andy Gilmour and Jill Barclay
   1.1 The starting point 3
   1.2 Developing a web-based GIS solution for New Zealand Police 4
   1.3 Building on the map-based analytical policing system (MAPS) 5

2 An analytical technique for addressing geographical referencing difficulties and monitoring crimes in Rio de Janeiro, Brazil 9
   Ana Paula Mendes de Miranda and Marcus Ferreira
   2.1 Introduction – developments in crime analysis in Rio de Janeiro 9
   2.2 Analysis by space–time monitoring cells 11
   2.3 Identifying crime patterns using paper maps 14
   2.4 Identifying crime patterns in Rio de Janeiro using GIS and digital cartographic base maps 15
   2.5 Crime analyses on bus routes in Rio de Janeiro 18
   2.6 Conclusions 18
   2.7 References 18

3 Methods for implementing crime mapping within a large law enforcement agency: experiences from Victoria, Australia 19
   Timothy Mashford
   3.1 Introduction 19
   3.2 A phased plan for development and delivery 20
   3.3 Progress to date 24
   3.4 Crime mapping projects – some examples 25
   3.5 Conclusions 25
   3.6 Reference 26
## CONTENTS

### 4 Automating briefings for police officers

*Tom Casady*

- 4.1 Introduction
- 4.2 Automating crime mapping outputs in Lincoln Police Department
- 4.3 Developing the automation of tasks in Lincoln
- 4.4 Automating crime mapping in your agency

### Part II Geographical investigative analysis

#### 5 Geographic profiling analysis: principles, methods and applications

*D. Kim Rossmo and Lorie Velarde*

- 5.1 Introduction
- 5.2 The theoretical principles behind geographic profiling
- 5.3 Geographic profiling methodology
- 5.4 Applying geographic profiling to ‘volume’ crime: the Irvine Chair burglaries
- 5.5 Measuring the effects of geographic profiling in Irvine
- 5.6 References

#### 6 Geographic profiling in an operational setting: the challenges and practical considerations, with reference to a series of sexual assaults in Bath, England

*Clare Daniell*

- 6.1 Introduction
- 6.2 Applying geographic profiling to a series of indecent assaults in Bath, England
- 6.3 Offender geography
- 6.4 Operational versus academic geographic profiling
- 6.5 Conclusions
- 6.6 References

#### 7 The Hammer Gang: an exercise in the spatial analysis of an armed robbery series using the probability grid method

*Chris Overall and Gregory Day*

- 7.1 Introduction
- 7.2 Background
- 7.3 Mapping the data and getting the picture
- 7.4 Predicting the next offence location
- 7.5 Results
- 7.6 Issues in application of the probability grid method
7.7 Conclusions 61
7.8 Acknowledgements 62
7.9 References 62

8 ‘Rolling the Dice’: the arrest of Roosevelt Erving in Lincoln, Nebraska 63
Tom Casady
8.1 Introduction 63
8.2 Erving’s series of bank robberies 64
8.3 Analysing Erving’s series 65
8.4 Project ‘Rolling the Dice’ 66
8.5 The crucial role of geographical analysis 68

Part III Neighbourhood analysis

9 The strategic allocation of resources to effectively implement Neighbourhood Policing and the Community Safety Plan 71
Alice O’Neill
9.1 Introduction 71
9.2 Alternative resource allocation model 72
9.3 What were the results, outcome and issues? 73
9.4 The future 74
9.5 Reference 74

10 Priority neighbourhoods and the Vulnerable Localities Index in Wigan – a strategic partnership approach to crime reduction 75
Ian Bullen
10.1 Introduction 75
10.2 An alternative Vulnerable Localities Index 76
10.3 Vulnerable localities in Wigan 78
10.4 Using the Vulnerable Localities Index to help understand offending patterns 80
10.5 Developing the Vulnerable Localities Index to support urban regeneration and Neighbourhood Policing 82
10.6 Acknowledgement 82
10.7 References 82

11 Reducing re-offending in local communities: geographical information system based strategic analysis of Greater Manchester’s offenders 83
David Ottiwell
11.1 Context and introduction 83
11.2 Implementation, testing and analysis 84
CONTENTS

11.3 Results, outcomes and issues 89
11.4 References 90

Part IV Integrating visual audits and survey data into crime mapping

12 Community Safety Mapping Online System: mapping reassurance using survey data 93
Steven Rose
12.1 Introduction 93
12.2 Community Safety Mapping Online System (COSMOS) 94
12.3 Measuring reassurance 94
12.4 Environmental visual audit (EVA) 96
12.5 Practical use of results 97
12.6 Evaluation and next steps 100
12.7 References 102

13 Mapping the fear of crime – a micro-approach in Merton, London 103
Chris Williams
13.1 Introduction 103
13.2 Process 104
13.3 Methodology 104
13.4 Results 105
13.5 Methodological applications and considerations 109
13.6 References 109

14 NightVision – visual auditing of night-time economy related incidents in Bath and North-East Somerset 111
Jon Poole
14.1 Introduction 111
14.2 Project design and implementation 111
14.3 Methodological considerations 112
14.4 Findings from the NightVision surveys 116
14.5 Generating action 118
14.6 Conclusions 118
14.7 Reference 119

Part V New techniques

15 The near-repeat burglary phenomenon 123
Derek Johnson
15.1 Introduction 123
15.2 Near repeats in Bournemouth 123
## CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.3</td>
<td>A methodology for analysis and action</td>
<td>124</td>
</tr>
<tr>
<td>15.4</td>
<td>Delivering a near-repeat intervention</td>
<td>126</td>
</tr>
<tr>
<td>15.5</td>
<td>The impact</td>
<td>127</td>
</tr>
<tr>
<td>15.6</td>
<td>Conclusions</td>
<td>129</td>
</tr>
<tr>
<td>15.7</td>
<td>References</td>
<td>132</td>
</tr>
<tr>
<td>16</td>
<td>Simulating crime to inform theory and practice</td>
<td>133</td>
</tr>
<tr>
<td></td>
<td><em>Elizabeth Groff</em></td>
<td></td>
</tr>
<tr>
<td>16.1</td>
<td>Introduction</td>
<td>133</td>
</tr>
<tr>
<td>16.2</td>
<td>Agent-based modelling</td>
<td>134</td>
</tr>
<tr>
<td>16.3</td>
<td>Creating a theoretically based simulation model to test routine activity theory</td>
<td>136</td>
</tr>
<tr>
<td>16.4</td>
<td>Findings and significance of the research – comparing a simulated environment to the principles of routine activity theory</td>
<td>139</td>
</tr>
<tr>
<td>16.5</td>
<td>Comparing a simulated crime environment to reality</td>
<td>140</td>
</tr>
<tr>
<td>16.6</td>
<td>Implications for practice</td>
<td>140</td>
</tr>
<tr>
<td>16.7</td>
<td>References</td>
<td>141</td>
</tr>
<tr>
<td>17</td>
<td>A crime mapping technique for assessing vulnerable targets for terrorism in local communities</td>
<td>143</td>
</tr>
<tr>
<td></td>
<td><em>Rachel Boba</em></td>
<td></td>
</tr>
<tr>
<td>17.1</td>
<td>Introduction</td>
<td>143</td>
</tr>
<tr>
<td>17.2</td>
<td>Assessing target vulnerabilities: two components</td>
<td>143</td>
</tr>
<tr>
<td>17.3</td>
<td>Assessing target vulnerabilities: a hypothetical case study</td>
<td>146</td>
</tr>
<tr>
<td>17.4</td>
<td>Considerations</td>
<td>150</td>
</tr>
<tr>
<td>17.5</td>
<td>References</td>
<td>151</td>
</tr>
<tr>
<td>18</td>
<td>Interactive Offender Profiling System (IOPS)</td>
<td>153</td>
</tr>
<tr>
<td></td>
<td><em>David Canter and Donna Youngs</em></td>
<td></td>
</tr>
<tr>
<td>18.1</td>
<td>Introduction</td>
<td>153</td>
</tr>
<tr>
<td>18.2</td>
<td>An integrated operational system</td>
<td>154</td>
</tr>
<tr>
<td>18.3</td>
<td>The potential of the interactive offender profiling system</td>
<td>159</td>
</tr>
<tr>
<td>18.4</td>
<td>Acknowledgement</td>
<td>159</td>
</tr>
<tr>
<td>18.5</td>
<td>References</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td>Index</td>
<td>161</td>
</tr>
</tbody>
</table>