Crime Prevention and Security Management

Series Editor: **Martin Gill**

Titles include:

Paul Almond
CORPORATE MANSLAUGHTER AND REGULATORY REFORM

Rachel Armitage
CRIME PREVENTION THROUGH HOUSING DESIGN
Policy and Practice

Joshua Bamfield
SHOPPING AND CRIME

Graham Brooks, Chris Lewis, David Walsh and Hakkyong Kim (*editors*)
PREVENTING CORRUPTION
Investigation, Enforcement and Governance

Karen Bullock
CITIZENS, COMMUNITY AND CRIME CONTROL

Mark Button
DOING SECURITY
Critical Reflections and an Agenda for Change

Vania Ceccato and Andrew Newton (*editors*)
SAFETY AND SECURITY IN TRANSIT ENVIRONMENTS
An Interdisciplinary Approach

Mitchell Congram, Peter Bell and Mark Lauchs
POLICING TRANSNATIONAL ORGANIZED CRIME AND CORRUPTION
Exploring the Role of Communication Interception Technology

Daniel Donnelly
MUNICIPAL POLICING IN THE EUROPEAN UNION
Comparative Perspectives

Paul Ekblom
CRIME PREVENTION, SECURITY AND COMMUNITY SAFETY USING
THE 5IS FRAMEWORK

Adam Graycar and Tim Prenzler
UNDERSTANDING AND PREVENTING CORRUPTION

Janice Goldstraw-White
WHITE COLLAR CRIME
Accounts of Offending Behaviour

Bob Hoogenboom
THE GOVERNANCE OF POLICING AND SECURITY
Ironies, Myths and Paradoxes

Daniel McCarthy
'SOFT' POLICING
The Collaborative Control of Anti-Social Behaviour

Kate Moss
BALANCING LIBERTY AND SECURITY
Human Rights, Human Wrongs

Kate Moss
SECURITY AND LIBERTY
Restriction by Stealth

Tim Prenzler
POLICING AND SECURITY IN PRACTICE
Challenges and Achievements

Emmeline Taylor
SURVEILLANCE SCHOOLS
Security, Discipline and Control in Contemporary Education

Jan van Dijk, Andromachi Tseloni and Graham Farrell (*editors*)
THE INTERNATIONAL CRIME DROP
New Directions in Research

Kevin Walby and Randy Lippert
CORPORATE SECURITY IN THE 21ST CENTURY
Theory and Practice in International Perspective

Adam White
THE POLITICS OF PRIVATE SECURITY
Regulation, Reform and Re-Legitimation

Crime Prevention and Security Management
Series Standing Order ISBN 978–0–230–01355–1 hardback
978–0–230–01356–8 paperback
(*outside North America only*)

You can receive future titles in this series as they are published by placing a standing order. Please contact your bookseller or, in case of difficulty, write to us at the address below with your name and address, the title of the series and one of the ISBNs quoted above.

Customer Services Department, Macmillan Distribution Ltd, Houndmills, Basingstoke, Hampshire RG21 6XS, England

Safety and Security in Transit Environments

An Interdisciplinary Approach

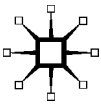
Edited by

Vania Ceccato
Royal Institute of Technology (KTH), Sweden

and

Andrew Newton
University of Huddersfield, UK

palgrave
macmillan



Introduction, selection and editorial matter © Vania Ceccato and Andrew Newton 2015
Individual chapters © Respective authors 2015
Foreword © Marcus Felson 2015
Softcover reprint of the hardcover 1st edition 2015 978-1-137-45764-6

Chapter 9:
Except where otherwise noted, this chapter is licensed under a Creative Commons Attribution 3.0 Unported License. To view a copy of this license, visit http://creativecommons.org/licenses/by/3.0

All other chapters:
All rights reserved. No reproduction, copy or transmission of this publication may be made without written permission.

No portion of this publication may be reproduced, copied or transmitted save with written permission or in accordance with the provisions of the Copyright, Designs and Patents Act 1988, or under the terms of any licence permitting limited copying issued by the Copyright Licensing Agency, Saffron House, 6–10 Kirby Street, London EC1N 8TS.

Any person who does any unauthorized act in relation to this publication may be liable to criminal prosecution and civil claims for damages.

The authors have asserted their rights to be identified as the authors of this work in accordance with the Copyright, Designs and Patents Act 1988.

First published 2015 by
PALGRAVE MACMILLAN

Palgrave Macmillan in the UK is an imprint of Macmillan Publishers Limited, registered in England, company number 785998, of Houndmills, Basingstoke, Hampshire RG21 6XS.

Palgrave Macmillan in the US is a division of St Martin's Press LLC, 175 Fifth Avenue, New York, NY 10010.

Palgrave Macmillan is the global academic imprint of the above companies and has companies and representatives throughout the world.

Palgrave® and Macmillan® are registered trademarks in the United States, the United Kingdom, Europe and other countries.

ISBN 978-1-349-57179-6 ISBN 978-1-137-45765-3 (eBook)
DOI: 10.1057/9781137457653

This book is printed on paper suitable for recycling and made from fully managed and sustained forest sources. Logging, pulping and manufacturing processes are expected to conform to the environmental regulations of the country of origin.

A catalogue record for this book is available from the British Library.

A catalog record for this book is available from the Library of Congress.

This book is dedicated to all those who work tirelessly in transit systems, either providing transportation services or ensuring a safe journey for all users

This page intentionally left blank

Contents

List of Figures x

List of Tables xii

Foreword xiv
Marcus Felson

Series Editor's Preface xvii

Acknowledgements xix

Notes on Contributors xx

Part I Introduction to Safety and Security in Transit Environments

1 Aim, Scope, Conceptual Framework and Definitions 3
Vania Ceccato and Andrew Newton

2 Theoretical Perspectives of Safety and Security in Transit Environments 23
Andrew Newton and Vania Ceccato

Part II Transport Nodes and the Micro Environment

3 Apple Picking: The Rise of Electronic Device Thefts in Boston Subways 39
Kendra Gentry

4 An Assessment of Guardianship Opportunities as Provided by the Environments of Transit Stations 56
Adriaan Cornelis Uittenbogaard

5 The Geography of Pickpocketing at Bus Stops: An Analysis of Grid Cells 76
Vania Ceccato, Oded Cats and Qian Wang

6 In and Around: Identifying Predictors of Theft within and near to Major Mass Underground Transit Systems 99
Andrew Newton, Henry Partridge and Andy Gill

Part III On the Move: The Transit Journey

7 'Wolves to the Door' or 'Lambs to the Slaughter'? Crime Opportunity Searches on a New Public Transport System 119
Christopher M. Sedelmaier

8 Adolescents' Fears of Violence in Transit Environments during Daily Activities 137
Douglas Wiebe, Therese Richmond, Jed Poster, Wensheng Guo, Paul Allison and Charles Branas

9 Crowd Spatial Patterns at Bus Stops: Security Implications and Effects of Warning Messages 156
Réka Solymosi, Hervé Borrion, and Taku Fujiyama

OPEN *This chapter is available open access under a CC BY license via palgraveconnect.com*

Part IV Transit Systems and the Wider Urban Environment: Meso and Macro Settings

10 Crime, Transportation and Malignant Mixes 181
Ward Adams, Christopher R. Herrmann and Marcus Felson

11 Public Bus Stops and the Meso Environment: Understanding the Situational Context of Street Robberies 196
Timothy C. Hart and Terance D. Miethe

12 Areas Where Vulnerable Public Transit Commuters Reside: A Method for Targeting Crime Prevention and Other Resources to Address Local Area Problems 213
Sung-suk Violet Yu and Martha J. Smith

13 The Impact of Crime and Neighbourhood Enclosures on Travel Behaviour and Transport Patterns in South Africa 234
Trudi Smit, Karina Landman and Christoffel Venter

14 Crime in and around Metro Transit Stations: Exploring the Utility of Opportunity Theories of Crime 251
Nancy La Vigne

15 Perception of Disorder and Crime, and Responses to Them in Japanese 'Mega' Railway Stations 270
Seiji Shibata, Kazunori Hanyu, Tomoko Doi Hata and Yoshiko Yamaoka

Part V A User Perspective on Transit Settings

16 Intimidated Riders: US Women's Perspectives about Safety in Transit Settings 291
Anastasia Loukaitou-Sideris

17 Gender Equality and Safety, a Challenge for Transport Planning: Moving Away from Stereotypes and Stereotypical Attitudes and Habits 309
Lena Levin

18 Sexual Harassment against People with Mental Disabilities in Transit Environments: Implications for Services and Clinics 328
Antonio Iudici

19 Enhancing Mobility and Perceived Safety via ICT: The Case of a Navigation System for Visually Impaired Users 344
Jana Sochor

20 Practical Challenges and New Research Frontiers for Safety and Security in Transit Environments 362
Vania Ceccato and Andrew Newton

Index 385

List of Figures

1.1 Security and safety in transit environments: the conceptual framework 6
1.2 An example of a public transportation system: Stockholm metro system 16
4.1 Forms of potential guardianship at underground stations by key actors 60
4.2 (a) The environment promotes surveillance and visibility opportunities; (b) The environment restricts possibilities for surveillance and visibility 61
4.3 The study area and underground system with stations 63
4.4 (a) Example showing poor possibilities for surveillance/visibility at Blackeberg station; (b) Example showing good possibilities for surveillance/visibility at Hässelby Strand station 66
4.5 Stepwise regression modelling; presenting results for separate parts of the stations (Step 1), total station (Step 2), stations surroundings (Step 3) and overall assessment (Step 4) 67
5.1 Examples of (a) bus stops located in transfer hubs, (b) along an arterial street and (c) in peripheral outskirts 80
5.2 The impact of bus stops on the geography of pickpocketing: a two-stage approach 83
5.3 Distribution of number of pickpocketing incidents per grid cell 84
5.4 Pickpocketing and seven of the most important bus stops and crime generators/attractors 86
5.5 Relation between (a) pickpocketing and passenger flow by cell (b) and by rate of passenger by buses by cell 91
7.1 The Hudson-Bergen light rail system in Jersey City, NJ, April 2000–November 2001 124
7.2 Service zones based on 0.5 mile street distances 126
8.1 Cumulative predicted probabilities of perceived safety levels of above 7, above 8 and above 9 146
9.1 Trajectories of participants in one run of the experiment showing their movement while waiting for boarding and dispersing from the mock-up bus 163
9.2 Distribution of the smallest distances between people broken down by phase 164
9.3 Trajectories of people during boarding at different intervals during boarding phase 166

9.4 Number of times minimum distances between people were less than threshold per phase 167
9.5 How much time people spent within threshold distance of another, by phase 167
9.6 Minimum distances (in) by warning scenario, during boarding 168
9.7 Cumulative distribution of the time under the threshold for waiting 169
9.8 Cumulative distribution of the time under the threshold for boarding 169
9.9 Cumulative distribution of the time under the threshold on bus 170
10.1 Shifting robbery hot spots, the Bronx, NYC 185
11.1 A robbery location in Henderson, NV 202
11.2 Another robbery location in Henderson, NV 203
12.1 Spatial distribution of public transit commuters in NYC 221
12.2 Spatial distribution of violent index crime and vulnerable transit riders in NYC 225
12.3 Spatial distribution of property index crime and vulnerable transit riders in NYC 226
13.1 The location and extent of enclosed neighbourhoods in the City of Tshwane 238
13.2 Households' reason for enclosing the neighbourhood 241
15.1 Mean values of expected/experienced unpleasantness and expected/experienced frequency of each event 278
15.2 Percentage distribution of responsibility attribution for each event 279
20.1 Transit settings and their environs: interactions between the settings, the user and the potential offender 379

List of Tables

3.1	Descriptives for precinct crime rates and subway station characteristics	50
3.2	Negative binomial regression for electronic device thefts at MBTA subway stations, 2003–2011	51
4.1	Environmental attributes inspected at stations	64
4.2	Results of the logistic regression model: guardianship opportunities equal influence of environmental design aspects	68
4.3	Results of the logistic regression model using only stations with platforms aboveground: guardianship opportunities equal influence of environmental design aspects	70
5.1	Summary statistics of pickpocketing activity by cell type	85
5.2	Negative binomial regression, dependent variable	88
6.1	Potential predictor variables of theft – internal station settings	105
6.2	Potential predictor variables of theft – external nearby settings	106
6.3	Regression analysis: internal and external characteristics of stations and theft	109
6.4	Regression analysis: internal and external characteristics of stations, station classification and theft	110
7.1	HBLR Midtown service zone observed (expected), arrests by arrestee address category	128
7.2	HBLR Southside service zone observed (expected), arrests by arrestee address category	129
7.3	HBLR Paulus Hook service zone observed (expected), arrests by arrestee address category	130
7.4	HBLR Newport service zone observed (expected), arrests by arrestee address category	131
8.1	Characteristics of 153 children and their travel during daily activities	144
8.2	Perceived safety during daily activities	144
8.3	Perceived safety level among 10- to 18-year-olds in Philadelphia during daily activities by transportation environment, age and companion status during daytime hours	145
8.4	Perceived safety level among 10- to 18-year-olds in Philadelphia during daily activities by transportation environment, age and companion status during night-time hours	147
9.1	Wilcoxon signed rank test for difference between duration of time people spend within arm's reach distance per phase of experiment	168

9.2	Wilcoxon signed rank test statistic for minimum distances while boarding	169
10.1	Violent crime in the Bronx, NYC, 2006–2010	184
10.2	Negative binomial regression of number of assaults on selected independent variables, Houston, TX, 2000–2009	190
11.1	Dominant situational profiles of robberies	205
11.2	Likelihood of a bus stop being among other activity nodes that define the dominant situational profiles of robbery events	206
11.3	Relative risk of robbery for dominant situational profiles of activity nodes that define the proximate environment	207
12.1	Profile of commuters by means of travel to work in NYC	219
12.2	Time left for work by mode of travel by census tract in NYC	223
12.3	Occupation category by census tract in NYC	224
13.1	Travel behaviour of residents	243
13.2	Modes of travel by residents	243
13.3	Additional travel time due to street closures	244
14.1	Comparison of camera features on metrorail versus metro parking facilities	263
15.1	List of the events included in the questionnaire	274
15.2	Details of the sample in this study	276
15.3	Summary of the results of the mixed-effects regression model for expected unpleasantness	280
15.4	Summary of the results of the mixed-effects regression model for experienced unpleasantness	281
15.5	Summary of the results concerning perception of incivility and victimization between passengers in Tokyo and three European cities	282
16.1	Transportation settings where (British) women and men feel unsafe after dark	295
19.1	Socio-demographic characteristics of the respondents	350

Foreword

Transit security poses special challenges, both intellectually and empirically. A secure spot for 23 hours a day might become insecure one hour a day. A transit station might be 97 per cent secure, yet contain a single danger spot within it. Thus we must begin to think and measure more sharply in order to comprehend the dynamics of security in a transit environment and elsewhere.

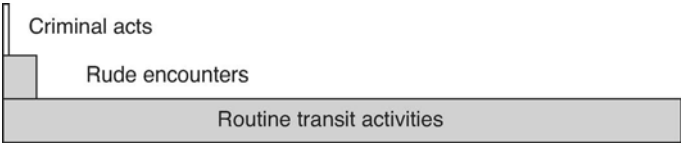
That requires us to consider 'crime in motion'. I once taught a seminar with that title, and the same idea inspired a book, *Crime and Nature* (Thousand Oaks, Sage, 2006). However, at that time detailed data were still sparse compared to now. Today we know much more about how security shifts by day of week, hour of day, and minute to minute.

This volume makes use of such data. It includes papers about many nations, covering crime of different types and fear of crime, too. The authors teach us how transit problems vary from place to place, but they also show us important common elements that transcend cultures and transit systems. The authors make important distinctions. They know the difference between crime on a metro platform and crime in the station, between crime just outside the station and crime a block away. They know how fear and feelings of insecurity quickly shift, too. Their spatio-temporal specificity and attention to detail help us comprehend and enhance transit security.

We should not assume that public transit systems must be less secure than other modes of transport. Indeed, automotive aggression is commonplace, and car parking areas host a good deal of crime. However, the blame for automotive aggression is diffused among many, while blame for public transit crime is often attributed to the transit authority. That blame threatens their ability to secure revenues and enhance the public good. But there is good news: a relatively few transit officials can make decisions to reduce crime within their system and in its vicinity, thus providing a very important service to the larger community.

Insecurity in public transit systems is not just a matter of crime, or security from bodily injury, but also relates to rude behaviour. Bumping, cursing, insulting or annoying others is not only itself bad but can escalate into something worse. The following diagram gives an idea of how the bad is embedded within the normal. The vast majority of experiences in a transit system are routine. Within that mass of routine transit activities, a much smaller number of rude encounters can occur, most of them fleeting. A much smaller number of criminal acts occur. An important task is to comprehend how the three are interrelated. Causation tends to flow upward

in the diagram, since routine transit activities can structure the quantity of bumping or other rude encounters. Some of these can escalate into criminal events. Other criminal events are not related to rude encounters, but still feed off routine transit activities.



Moreover, the subjective experience of transit security might be influenced more by rude encounters than by real crimes. Transit riders likely combine (in their minds) bad experiences with worst experiences, perhaps following this formula:

100 *rude encounters* + one *criminal act* = 101 *subjective criminal acts*.

That may seem like strange arithmetic, but it makes a point – that minor annoyances can have major consequences. On the positive side, well-designed and well-managed transit systems, by reducing bumping and other rude encounters, can indirectly diminish criminal acts and improve the subjective experience.

Researchers and theorists face at least four interrelated challenges in studying transit crime. The first challenge is to understand how the risk of bad experience shifts with each level of ambient population density. High-density times invite pickpocketing and bumping, but robbers usually feed upon stragglers at low-density times. The challenge to research is to map out these density differences.

The second challenge is to disentangle crowd effects for offenders, targets and guardians. That is not easy, since the same person might play any of these three roles. Arguably, the age-sex composition of a crowd is the best way to approach this problem empirically. As a general rule, security varies directly with the age of those present and the percentage of those female. Security varies inversely with the number of teenagers present. A research focus on the movement of adolescents may become central.

The third challenge is to disaggregate and elaborate our notion of public space. When Oscar Newman distinguished four types of space – public, semi-public, semi-private and private – he was referring mainly to residential areas. However, within transit systems, most areas are public space. That category needs further disaggregation, since not all public space is equally secure. One might begin by making intellectual distinctions among convergence areas, lingering areas, pedestrian areas, crowded areas, entry areas, exit areas, stable areas, shifting areas, bottlenecks, straggling areas – whatever else proves useful for comprehending how security varies from one

public space to another. It also might be useful to distinguish locations that people (a) go by, but not through, (b) go through without stopping, (c) stop briefly or (d) remain a while. As researchers develop better locational categories, they will assist our understanding about pedestrian dynamics and supervision of transit spaces, and how these spaces generate or mitigate problems.

A fourth challenge emerges – to understand stragglers. The greatest risk may apply to those who leave last. Because straggling might be more episodic, it might not be as clearly structured or as easily analyzed. Yet transit systems and processes might in fact generate more stragglers at particular times and places, subject to scientific analysis. Analysis of pedestrian flows and dispersions might help us develop a science of straggling. Perhaps applied mathematicians will tell us quickly which of their tools apply to this. Some systems seek to funnel very late traffic into fewer staircases. Perhaps intuition alone can go a long way towards minimizing the straggler problem. There is nothing wrong with intuition, which often leads us forward, as engineers and other applied students of life well recognize.

Engineering is the ultimate test of science. It uses basic scientific theory and principles, in addition to human intuition and experience, and also a willingness to take a risk that the new bridge might collapse into the river. The study of crime and security is entering its engineering phase. Reducing transit crime is a major test of our capacities, and a major learning experience for all concerned.

Marcus Felson
Texas State University
December 2014

Series Editor's Preface

This is an ambitious book. As you will read, the transit environment is a complex one. It is highly mobile and transient. It contains many different types of passengers using a variety of transport systems located in diverse (and sometimes challenging) contexts. There are many crime risks to consider, and many potential ways of managing them. In addition to passengers undertaking their individual journeys, there are a range of other individuals who can be impacted by transport-related crime, amongst them staff involved in the delivery of transit services and those responsible for law/rule enforcement. Then there is the bus shelter, the railway track, indeed the broader transport infrastructure. Providing a crime-free environment is always going to be taxing. This book provides the most comprehensive insight yet into both the threats and potentially effective responses.

There are then many characteristics that make transit environments complex to understand and present challenging environments in which to manage crime. To help fill the knowledge gaps, the editors have brought together a multidisciplinary field of contributors incorporating criminologists, urban planners, transport planners, sociologists, transportation engineers, psychologists, geographers, architects, designers and security experts. The book draws upon a broad range of theories as well as empirical studies conducted in different parts of the world which offer insights that break new ground in this subject area.

There is much in this book that will be of interest to those interested in the study of security more generally. This includes an interesting discussion into the ways in which concepts of safety and security are operationalized by different authors; the importance of the very diverse range of characteristics that impact on rapidly changing risks; the perceptions of different users on the factors they contribute to their vulnerability; insights into crime types that have received very little academic coverage (for example, pickpocketing); the importance of guardianship in detecting and reducing crime, in terms of both the visibility and surveillance opportunity it affords (and where creating lines of sight becomes important); the dangers presented by crowds; the importance of design characteristics and management approaches in managing risks; as well as the potential of very specific measures to deal with specific problems, such as the potential offered by lighting, audio warnings and access controls.

A topic that is under-researched, matched by a collection of experts from different disciplines, provides excellent ingredients for a good edited collection. The editors have worked hard in their introduction and final chapter

to ensure the reader understands the relevance of the wealth of material contained within these covers. It is a formidable achievement and one on which we must hope others will build.

Martin Gill
January 2015

Acknowledgements

We would like to add a note of acknowledgement to all referees who took time to read chapters of this book, make comments and directly contributing to improve the quality of the materials. They are: Aiden Sidebottom, Mathew Ashby, Oded Cats, Jason Roach, Lars Dolmen, Anthony Braga, Dianne Smith, Lucia Summers, Jason Roach, Anders Wretstrand, Bridget da Costa, Jeff Walker, Brian Lockwood, Lallen Johnson, Justin Kurland, Bo Grönlund, Ann Legeby, Elizabeta Troglio, Danielle Reynald, Fredrik Kopsch, Torbjörn Thedeen, Kate Bowers, Brian Blawton, Rachel Armitage, Eric McCord, Ned Levine, Thomas Stucky, Nicholas Corsaro, Martin Gill, Robert Haining, Dietrich Oberwittler, Lena Levin, Jana Sochor, Alex Hirschfield, Jason Goldstick, Henk Elfers, Ian Branton-Smith, Andrew Prelog, Meghan Hollis-Peel, Chunghyeon Seo, Remi Boivin, Mathew Hack, David Nicholson, Lorraine Gelsthorpe, Ines Madariaga, and Beth Hardie.

Notes on Contributors

Editors

Vania Ceccato is an associate professor at the School of Architecture at the Built Environment, Royal Institute of Technology (KTH), Stockholm, Sweden. Her research interests include urban and rural crime, transit safety, crime prevention and community safety. She is the author of *Rural Crime and Community Safety* (2015) and of *Moving Safely, Crime and Perceived Safety in Stockholm's Subway Stations* (2013) and the editor of *The Urban Fabric of Crime and Fear* (2012). She administers the user email list TCR-Network (Transit Crime Research Network), which is an open forum for discussions of research on crime and safety in transportation environments. She is Swedish representative in the European Union's COST Action network in Crime Prevention through Urban Design and Planning and in Gender (GenderSTE).

Andrew Newton is a senior research fellow at the Applied Criminology Centre, University of Huddersfield, and an honorary senior research associate in the Department of Security and Crime Science, University College London. He has worked in the fields of criminology, community safety and security since 1999, and his research interests include the geography of crime/spatial criminology, policy analysis and evaluation, society and technology, and mixed methods in applied research. His research has been funded by a range of organizations, including the Home Office and the Department for Transport. He has widely published and has presented at over 50 international conferences. In April 2014, he presented the findings of his research on theft on the London Underground as oral evidence to the House of Commons Transport Select Committee on 'Security on the Railway'.

Contributors

Ward Adams is a doctoral student in Criminal Justice under the direction of Marcus Felson at Texas State University. His research focus is the spatial relationship between facilities, such as parks and highway systems, and crime. Other areas of interest related to criminology include crime prevention, criminogenity of place, fear of crime, assaultive violence and fusion centres. Adams works in the Texas Department of Insurance, Austin, Texas, United States. His research examines return-to-work patterns of injured employees in Texas, and the adequacy of income benefit compensation among injured employees who have lost work because of a work-related injury.

Paul Allison is Professor of Sociology at the University of Pennsylvania, where he teaches graduate courses in methods and statistics. He has published eight books and more than 60 articles on topics that include linear regression, log-linear analysis, logistic regression, structural equation models, inequality measures, missing data and survival analysis.

Hervé Borrion is the Deputy Director of University College London's (UCL's) Security Research Training Centre. He was educated at the École Nationale Supérieure d'Aéronautique et de l'Espace (Master's) and at University College London (PhD). He developed a strong interest in modelling techniques for security applications at the Commissariat à l'Énergie Atomique, Los Alamos National Laboratory, University of Cape Town and Tsinghua University. He co-founded the International Crime Science Conference and the UK National Environmental Crime Conference, and contributed to a number of European Union (EU) projects, including RIBS, BASYLIS and PRIME. Borrion is a member of the European Reference Network for Critical Infrastructure Protection at the EU Joint Research Centre.

Charles Branas is Professor of Epidemiology, Director of the Cartographic Modeling Laboratory, and Director of the Injury Science Center at the University of Pennsylvania. Branas works to improve health and health care, and is recognized for his efforts to reduce violence and enhance emergency care. Much of his work incorporates human geography and spatial interactions. His studies have taken him to various places, including the neighbourhoods of Philadelphia and other cities, rural counties across the United States, and cities and small towns in Guatemala and other countries.

Oded Cats is an assistant professor in the Department of Transport and Planning at Delft University of Technology in the Netherlands. He is also affiliated with KTH Royal Institute of Technology in Sweden. His main areas of expertise include public transport planning and operations, transport modelling and policy. Oded holds a dual PhD from KTH and Technion – Israel Institute of Technology. He is a member of the US Transport Research Board Committee on Transit Management and Performance and Public Transportation Marketing and Fare Policy, and organizes international courses on public transport planning and design. His research interests include the dynamics of public transport operations and demand, multimodal urban network and simulation modelling, and the impacts of reliability, congestion and information on passengers' decisions. His research activities often support transport agencies and operators' decision-making.

Marcus Felson has been a leader not only in crime theory ('the routine activity approach') but also in applying that theory to reducing crime. His central argument is that everyday legal activities set the stage for the illegal activities that feed on them. Before teaching at Texas State University, he was a professor at the Rutgers University School of Criminal Justice and the

University of Illinois and has been a visiting scholar at the University of Stockholm. He is a foreign honorary member of the Netherlands Academy of Sciences. He holds a PhD from the University of Michigan. Felson has been a guest lecturer in Argentina, Australia, Belgium, Brazil, Canada, Chile, Denmark, El Salvador, England, Finland, France, Germany, Hungary, Italy, Mexico, the Netherlands, Norway, Poland, Scotland, Spain, South Africa, Sweden and Switzerland. He is the author of 100 professional papers, including 'Redesigning Hell: Preventing Crime and Disorder at the Port Authority Bus Terminal'. He is co-author of *Opportunity Makes the Thief* and author of *Crime and Nature* and *Crime and Everyday Life*, now in its fourth edition.

Taku Fujiyama is a senior lecturer in the Department of Civil, Environmental and Geomatic Engineering, University College London (UCL). Having been trained as a civil and transport engineer, he researches public transport and its environments, especially from the viewpoint of users. He has set up the UCL Resilience Research Group and conducts a range of research on transport environments and infrastructure.

Kendra Gentry is Assistant Professor in Criminal Justice at Nova Southeastern University in Ft Lauderdale, Florida. Her primary research interests include transit crime, environmental criminology and crime and the media. She is a graduate of the University of Pennsylvania, from which she received a Master's in Criminology. She earned a degree in Journalism from the University of Florida. Prior to graduate school, Kendra covered crime as a newspaper reporter in suburban Philadelphia, Pennsylvania.

Andy Gill is a performance manager at transport for London's Enforcement and On Street Operations (EOS) directorate. He has previously held roles with Government Office London/Jill Dando Institute of Crime Science (UCL) as a crime information analyst (team leader), and as a corporate data officer with Surrey Police.

Wensheng Guo is Professor of Biostatistics at the University of Pennsylvania. Guo's methodological research interests include time series analysis, functional models, longitudinal data analysis, nonparametric methods and dimension reduction. Research that he leads has been supported by several R01 grants from National Institutes of Health.

Kazunori Hanyu is Professor of Psychology at College of Humanities and Sciences of the Nihon University in Tokyo, Japan. He received his PhD from Ohio State University in 1995. He is an editorial and committee board member of several environment-behaviour research associations in Japan. His current interest is in meanings of places and environmental issues in crimes. He has written many articles and books on environmental psychology and other issues.

Timothy C. Hart is a senior lecturer at the School of Criminology and Criminal Justice, Griffith University, Australia. He holds a PhD in Criminology from the University of South Florida. His areas of interest include survey research, applied statistics, geographic information systems (GIS) and victimization. Prior to joining the faculty at Griffith, Hart worked as a statistician for the Bureau of Justice Statistics, a program analyst for the Drug Enforcement Administration, and a research analyst for the Hillsborough County (Florida) Sheriff's Office. In addition, he is the former Statistical Analysis Centre (SAC) director for the state of Nevada.

Tomoko Doi Hata teaches Psychology at Bunkyo Gakuin University, Japan. She holds a PhD in Psychology. Her research focuses on supportive and restorative environments for mothers and child caregivers. She has also done several studies on children's safety from crime. She is an editorial and committee board member of several environment-behaviour research associations in Japan. She has written and co-written articles and book chapters on these subjects.

Christopher R. Herrmann is an assistant professor at John Jay College of Criminal Justice, New York City. He holds a doctorate in Criminal Justice at the CUNY Graduate Center, where he specialized in crime analysis and geographical information science. His research focuses on the geography of crime and the intersections of space-time relationships. He is working on violence prevention initiatives with the multidisciplinary Punishment to Public Health (P2PH) research team at John Jay College of Criminal Justice, concentrating on gun violence in New York City. Prior to his appointment at John Jay College, he was a Crime Analyst Supervisor in the New York City Police Department, where he worked on longitudinal spatiotemporal trends of crime.

Antonio Iudici has a Master's in Psychology, with a specialization in Psychotherapy. He teaches the clinical psychology of interaction course in the Department of Philosophy, Education, Sociology and Applied Psychology (FISPPA), University of Padova. He is a research associate at the Institute of Psychology and Psychotherapy of Padova and is a specialist in school psychology and clinical psychology. His areas of research interest include intervention in the clinical setting, health promotion, disability, child protection, deviance, crime, school integration and education.

Karina Landman has a background in architecture, urban design and city planning. Before joining the Department of Town and Regional Planning at the University of Pretoria, she was a principal researcher at the Council for Scientific and Industrial Research (CSIR) in South Africa. She has extensive experience related to urban and spatial transformation, crime prevention in the built environment, housing and sustainable development. Other areas of research include the privatization of urban space, services and local

governance; gated communities, urban segregation and sustainable development; medium-density mixed housing developments; affordable housing; and housing and sustainable development. Karina has published widely in these fields at national and international conferences and symposia.

Lena Levin holds a PhD in Communication Studies from the interdisciplinary Tema – Department of Thematic Studies, Linköping University, and since 2006 has been a member of the research unit Mobility, Actors and Planning Processes at VTI (The Swedish National Road and Transport Research Institute). Her research interests centre on how the transport system is shaped, developed and utilized by actors with various interests, perspectives and ascendancy, especially actors and planning processes in local and regional settings, for example, consultations and gender in planning processes. She also coordinates a project for VINNOVA (Sweden's innovation agency) aimed at developing methods to systematically integrate gender and equality in regional transportation planning, and she was appointed to lead developing research on travellers, at the K2 National Knowledge Centre for Public Transport located in the urban area south of Sweden Lund/Malmö.

Anastasia Loukaitou-Sideris is Associate Dean of the University of California, Los Angeles (UCLA) Luskin School of Public Affairs and Professor of Urban Planning. She has a background in architecture, urban design and city planning. Her research focuses on the public environment of the city, its physical representation, aesthetics, social meaning and impact on the urban resident, and includes documentation and analysis of the social and physical changes that have occurred in the public realm; crime prevention in the built environment, particularly as it relates to issues of transit safety and security; cultural determinants of design and planning and their implications for public policy; and quality-of-life issues for urban residents. She is the author of numerous articles, the co-author of the books *Urban Design Downtown: Poetics and Politics of Form*, and *Sidewalks: Conflict and Negotiation over Public Space*, and the co-editor of the books *Jobs and Economic Development in Minority Communities* and *Companion to Urban Design*.

Terance D. Miethe is Professor of Criminal Justice and Distinguished Barrick Scholar at the University of Nevada, Las Vegas. He is the author of 15 books and over 60 articles on violent crime, the comparative/historical study of punishment, and the analysis of criminological data. He has received multiple awards and grants from major federal agencies (NSF, NIJ) for his research in these areas.

Henry Partridge is a PhD student in the Department of Security and Crime Science at University College London. His research uses network spatial methods to analyse crime events that are constrained by linear

configurations like streets and transportation systems. He works as a Policy Officer in Transport for London's Enforcement and On Street Operations (EOS) directorate.

Jed Poster is a candidate in the Masters of City Planning program in the School of Design at the University of Pennsylvania.

Therese Richmond is the Andrea B. Laporte Endowed Professor of Nursing in the School of Nursing at the University of Pennsylvania. Richmond conducts studies focused on the interaction of physical injuries and their psychological sequelae in order to reduce post-injury disability and improve recovery. She co-founded the Firearm and Injury Center at Penn and is now Research Director of the Penn Injury Science Center.

Christopher Sedelmaier has a background in applied criminal justice research and program evaluation. Before joining the Criminal Justice Department at the University of New Haven, he was a crime analyst and evaluation researcher at the Jersey City (NJ) Police Department. His areas of research interest include the impacts of transport systems on local crime patterns, crime and the built environment, crime prevention through environmental design and data-driven policing strategies. Sedelmaier has published and presented in these fields and more at national and international criminology conferences.

Seiji Shibata is Associate Professor of Human Psychology at Sagami Women's University, Japan. He holds a PhD in Psychology. He is an editorial and committee board member of several environment-behaviour research associations in Japan. His research interests include concerns and perceptions about safety and security in communities and the psychological restorativeness of an environment. He has written articles and book chapters.

Trudi Smit is working as a development planner at a private firm in Pretoria, South Africa, specializing in socio-economic analysis, demographic modeling and housing research and demand. She has a Bachelor's in Town and Regional Planning from the University of Pretoria in 2009. Trudi's minithesis in her final year was based on the responses to the challenges of climate change by South African cities, with a specific focus on responses by the City of Johannesburg and the City of Tshwane. She completed her Master's at the University of Pretoria in 2013.

Martha Smith is an associate professor at the School of Community Affairs, Wichita State University. She has graduate degrees in Criminal Justice and in Law, and an undergraduate degree in Psychology and Sociology. Previously, she taught at Cardiff University in Wales and the University of Nebraska at Omaha, and was a senior research analyst at the New York City Criminal Justice Agency. Her research interests include crime and disorder on public

and private transport and paratransit; situational crime prevention; the use of civil remedies for crime prevention; and decision-making models related to offending, actions of potential victims, and search and seizure. She has written and co-written articles, book chapters and POP guides, and co-edited books and journals.

Jana Sochor is a postdoctoral researcher at Chalmers University of Technology in Gothenburg. She holds a doctorate in Transport Science from KTH Royal Institute of Technology in Stockholm, Sweden. Her research interests include how Information and Communication Technology (ICT) can be used in the transportation context to improve mobility and safety, both from the individual perspective in terms of assurance, privacy, inclusion and other ethical aspects, and also from the social perspective in terms of better utilization of shared resources and developing Mobility as a Service (MaaS). Advanced use of ICT in transportation is commonly referred to as Intelligent Transportation Systems (ITS), and Jana works with empirical data from multiple user groups in order to learn more about ITS' impacts on users' perceptions and behaviour.

Réka Solymosi has a Bachelor's from the University of British Columbia and an MRes degree in Criminology and Socio Legal Studies from the University of Manchester. At University College London (UCL), she is enrolled in the Security and Crime Science Doctoral Training Centre (SECReT) in the Department of Security Science as a PhD student based in the Department of Civil, Environmental, and Geomatic Engineering. She is also part of the Accessibility Research Group and the ExCiteS team. She works part-time in CEGE's Pedestrian Accessibility Movement Environment Laboratory (PAMELA). Her PhD dissertation aims to collect information about people's perceptions of safety during daily commutes by using mobile phone applications to log GPS coordinates and collect qualitative data about people's everyday experiences at these locations. This data may further be supplemented by quantitative coding of built environmental attributes and sensor data (e.g. from a mobile Galvanic Skin Response armband) which can be evaluated against the qualitative perception data.

Adriaan Cornelis Uittenbogaard is a member of the Housing and Safety Research Group at CEFIN, School of Architecture and the Built Environment, Royal Institute of Technology (KTH), Stockholm, Sweden. He has a background in urban planning and design. His PhD assessed dynamics of safety and crime in and around metro stations by assessing crime distributions over space and time in relation to the environmental and social characteristics of the city. His recent research investigates the nature and geography of suicides in transportation environments in Stockholm County. Adriaan has attended several international conferences over the past years and has

published several articles in journals in the fields of planning, geography and criminology.

Christoffel Venter is Associate Professor of Transportation Engineering in the Department of Civil Engineering at the University of Pretoria, South Africa. He holds a PhD in Civil Engineering from the University of California, Berkeley. His teaching and research activities focus on transport and land use interactions, planning and policy around public transport investment, and travel demand modelling. Other recent work in the areas of transport and crime has focused on using mobile GPS loggers to track travel patterns of pedestrians in urban areas, and to assess the impacts of crime and the built environment on walking behaviour.

Nancy La Vigne is Director of the Justice Policy Center at the Urban Institute, where she leads a staff of over three dozen researchers, overseeing a research portfolio of 40 active projects spanning a wide array of crime, justice and public safety topics. Before being appointed as director in 2009, she served for eight years as a senior research associate at the Urban Institute, directing research on prisoner reentry, crime prevention and the evaluation of criminal justice technologies. She has published widely on these topics, appearing in a variety of scholarly journals and practitioner publications. She has testified before members of Congress on prisoner reentry and criminal justice reform, and she also serves as a media spokesperson, appearing on National Public Radio's (NPR's) Morning Edition, CNN and NPR, and has been featured in *Atlantic Monthly,* the *New York Times,* and the *Chicago Tribune.* She holds a PhD from the School of Criminal Justice at Rutgers, The State University of New Jersey.

Qian Wang holds a PhD in Transport System. She is a researcher in the Transport Science Department at the Royal Institute of Technology. Her research focuses on transport demand modelling and its various applications. She is also interested in multidisciplinary research with a transport focus.

Douglas Wiebe is Associate Professor of Epidemiology in the Department of Biostatistics and Epidemiology, Perelman School of Medicine, University of Pennsylvania in Philadelphia, Pennsylvania. His interests include environmental risk factors for injury, methodological challenges of activity pattern measurement and the impact of daily routines on health-related behaviour. He is President of the Society for Advancement of Violence and Injury Research.

Yoshiko Yamaoka is a certified clinical psychologist at Aichi Aoitori Medical Welfare Center, Japan. She is interested in environmental factors influencing people's psychological well-being. She has also studied environmental factors related to adolescents' solitude and self-insight.

Sung-suk Violet Yu is an assistant professor at John Jay College. She is a graduate of Simon Fraser University in Canada, and she earned her doctorate in Criminal Justice at Rutgers University-Newark. She joined John Jay College in 2010 after working at the Vera Institute of Justice as a senior research associate and principal investigator of research projects focused on sentencing and corrections. Yu utilizes ArcGIS, GeoDa, CrimeStat III, MS SQL, SPSS and Stata in her research, focusing on crime patterns, access to medical care, fear of crime, crime prevention, correctional health and impacts of various environmental correlates on spatial patterns of crime. Recently, she has worked on research projects investigating linkages between health challenges and criminal behaviours.