CHAPTER 1

Overview of Crime and Intelligence Analysis in Canada

LEARNING OUTCOMES

By the end of Chapter 1, you will be able to:

- Understand the overall scope of the book and its main sections.
- Comprehend the broad distinction between the role of crime and intelligence analysis in the public sector and in the private sector.
- Understand the aspects of crime and intelligence analysis covered and not covered in this book.
- List the chapters and appendixes in this book and the specific topics covered in each chapter and appendix.
- Explain in broad terms the distinctions and connections between crime analysis and intelligence analysis.

Introduction

In the last two decades, the twin fields of crime analysis and intelligence analysis have received unprecedented recognition as being integral to the preservation of safety and security in Canada. Driven by agendas that emphasize the use of proactive measures to enhance public safety, Canadian law enforcement agencies and government departments have expanded the depth and breadth of their crime and intelligence analysis units. And, recognizing the link between fiscal stability and the security of employees and operations, larger Canadian firms have assimilated crime and intelligence analysis into their corporate security departments.

Recognition of the escalating importance of crime and intelligence analysis over the past 20 years coincides with a maturation of these disciplines. In this same time span, both fields have developed more robust theories and concepts, more rigorous methodologies and processes, and a far stronger embrace of technologies. While crime and intelligence analysis remain as much an art as a science, these advances have helped to professionalize these fields.

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This book is a training resource that aims to further the professionalization of crime and intelligence analysis in Canada, thereby contributing to the increasingly important role these fields play in maintaining safety and security in Canada.

This introductory chapter begins by discussing the general structure of the book, sketching the broad contours of its four main parts, and highlighting its unique Canadian content. This is followed by a description of the specific areas of the public and private security sectors covered and not covered in this book, and then a discussion on key terms used throughout the text. The section that follows considers the intended audience of this book before the penultimate section provides a chapter-by-chapter summary of the entire text. The conclusions to this chapter reflect briefly on the similarities and distinctions between crime and intelligence analysis.

General Structure

This book is divided into four main parts and a group of appendixes.

Part I, Crime and Intelligence Analysis in Canada: Overview and Context, provides critical information on the contextual features that shape the practice of crime and intelligence analysis in Canada. These main contextual factors examined in Part I are (1) Canada's criminal landscape, including broad historical crime trends, crime trends and issues relating to specific areas of crime, and prominent types of organized crime and extremism operating in the country; and (2) Canada's security apparatus, including the country's public law enforcement and private security organizations that have crime and intelligence analysis roles, the legislation and laws that govern these organizations, and the information management infrastructure and procedures used by Canadian law enforcement in its fight against crime.

Part II, Crime Analysis: Theories and Methods, and Part III, Intelligence Analysis: Theories and Methods, focus on the core theories, concepts, processes, and methods of crime and intelligence analysis. Fundamental principles and core methodologies for crime analysis are treated separately (Part II) from intelligence analysis (Part III). While there is a good deal of overlap between crime and intelligence analysis, these two disciplines have developed their own unique bodies of knowledge and tradecraft that continue to make the distinction relevant, especially for learning their foundational principles.

To illustrate the foundational principles of crime and intelligence analysis, Parts II and III of this book draw mainly on Canadian cases and examples. While the fundamental theories and methods that make up crime and intelligence analysis transcend nationality, using Canadian cases and examples allows Canadian learners to better grasp their practical relevance. In fields dominated by US—and, to a lesser extent, British—content, it can be difficult for Canadian readers to relate to theoretical material. Canadian cases and examples help bring the more abstract concepts to life and allow readers to more easily envision their application.

Part IV, Aspects of Crime and Intelligence Analysis: Bias, Advanced Methods, and Careers, examines some select topics in crime and intelligence analysis, with chapters on sources of bias, careers in these fields, and advanced topics and methods. All three chapters of Part IV use Canadian cases and examples to illustrate points and bring theoretical concepts to life. The focus on Canada in the chapter on careers in crime and intelligence analysis is especially pertinent given important distinctions between vocational opportunities in Canada and the United States.

The Security Sector: What This Book Covers and What It Does Not

Comprehensive coverage of crime and intelligence analysis in the public and private security sectors would require a much larger resource. Nevertheless, this book aims to cover a sizable part of this territory.

Within the public sector, this book focuses on law enforcement's use of crime and intelligence analysis, with an especially heavy emphasis on the policing sector. As with those in other countries, Canadian policing agencies have fully embraced crime and intelligence analysis. These

fields have become mainstays in Canadian police agencies at the municipal level (e.g., Halifax Regional Police, Peel Regional Police, Vancouver Police Department), provincial level (Royal Newfoundland Constabulary, Sûreté de Québec, Ontario Provincial Police [OPP]), and federal level (Royal Canadian Mounted Police [RCMP], Criminal Intelligence Service Canada), as well as in First Nations police forces (e.g., Nishnawbe Aski Police Service).

The book's coverage of crime and intelligence analysis in law enforcement, however, is not restricted to a policing perspective. The material also has relevance to the role of these disciplines within government agencies closely aligned to policing, including the Canada Border Services Agency and corrections agencies at the federal level (Correctional Services Canada) and provincial and territorial levels (e.g., Ontario's correctional services under the Ministry of the Solicitor General). Likewise, the law enforcement focus has relevance to non-police government agencies, departments, and Crown corporations that have a role in enforcing statutes, regulations, and by-laws and that to varying degrees have incorporated crime and intelligence analysis into this role. At the federal level, this would include, for example, Environment and Climate Change Canada, Transport Canada, Canada Revenue Agency, and Canada Post. At the provincial and territorial level, agencies such as Ontario's Ministry of Northern Development, Mines, Natural Resources and Forestry, and the Alberta Securities Commission incorporate crime and intelligence analysis. And at the municipal level, agencies such as Toronto Community Housing have likewise incorporated these disciplines into their enforcement roles.

In addition to covering the policing and regulatory domains of public law enforcement, this book also covers the national security domain of public law enforcement. The book's material on intelligence analysis, in particular, has relevance for the area of national security. In Canada, this relates to national security agencies at the federal level, most notably the Canadian Security Intelligence Service. It also includes police agency units, such as the Integrated National Security Enforcement Teams led by the RCMP, and the OPP-led Provincial Anti-Terrorism Section, that incorporate crime and intelligence analysis into their national security roles.

Although the book's coverage of intelligence analysis relates to some aspects of national security, it does not cover counter-intelligence and espionage. For example, the book's coverage on bias does not deal with techniques to counter denial and deception, which are staples of books that deal with the tradecraft of counter-intelligence and espionage. Moreover, although this book pays tribute to the important role that military intelligence has played in the development of the intelligence discipline, particularly in national security, this is not a book on military intelligence.

In addition to the role of crime and intelligence analysis in public law enforcement, this book covers the bourgeoning role of these disciplines in the private security sector. Large corporations in multiple areas of the economy, including retail, health care, financial, transportation, resource extraction, agriculture, and manufacturing, have started to integrate crime and intelligence analysis into their corporate security departments. Likewise, industry associations such as the Insurance Bureau of Canada and the Canadian Bankers Association now regularly use the methods of crime and intelligence analysis to help secure their industries. In many instances, corporate security departments liaise directly with public law enforcement in the areas of crime and intelligence analysis.

Large private security and private investigation firms have similarly adopted the fields of crime and intelligence analysis to both augment their ongoing operations and expand their range of services. In many areas, larger corporations engage private security services to conduct threat-risk assessments for physical operations, for corporate travel, and for foreign-held assets. They also contract with investigation firms to screen potential employees. In both cases, crime and intelligence analysis play a pivotal role in the delivery of these services.

Two important differences distinguish the role of crime and intelligence analysis in the private security sector from that of the public security sector. The first difference relates to overarching goals. The primary goal of public law enforcement is to preserve the safety and security of citizens and societal institutions. The foremost goal of private and corporate security is to

ensure the financial viability of corporations and private entities. In the private security sector, the use of crime and intelligence analysis to protect corporate assets, including both employees and physical infrastructure, is a means to an end. This does not make the role of crime and intelligence analysis in private security any less noble than public security; safe and secure corporations are integral to a smooth-functioning economy, and a smooth-functioning economy is integral to a healthy society. Moreover, corporate security departments often work directly with public law enforcement, and private security firms are sometimes contracted to conduct public law enforcement work.

The second key difference between the public and private sectors in relation to crime and intelligence analysis is the explicitness with which these fields have been adopted. In corporate security departments, crime and intelligence analysts will often have different titles, including security analyst, risk analyst, risk manager, threat analyst, and many other variations. But even if the titles differ, the roles do not: these analysts often employ the same methods as their crime and intelligence analysis counterparts in the public sector.

While this book does cover the role of crime and intelligence analysis in the private sector, it only touches on business intelligence (BI). BI is a process for analyzing data and providing actionable information so that business executives can make sound financial decisions. There is an increasing crossover between BI and crime and intelligence analysis, but BI is also a distinct field of study. Neither does this book cover cybersecurity. In the private sector, corporate security departments are increasingly working with IT departments in the area of cybersecurity, but this is a topic that is beyond the scope of this book.

Terms Defined

The preceding discussion on areas of the security sector covered and not covered in this book leads to some important clarifications about how terms are defined in this text. This book uses the terms "law enforcement" or "public law enforcement" to refer to agencies and departments that work to provide security primarily within the public sector. This includes activities related to policing, enforcement of government regulations and by-laws, and national security. The term "private security" is used to refer to private security and investigation firms, as well as to corporate security departments, all of which work to deliver security primarily within the private sector. For brevity, the term "law enforcement and security" is sometimes used and is meant to distinguish public law enforcement from private security.

Also for brevity, "crime" is often used in this book as a shorthand to refer to *Criminal Code* violations, but also to violations of provincial regulations, municipal by-laws, and even corporate policies. Consequently, the word "criminals" may refer to perpetrators of serious crime, such as murder or assault, but can also refer to perpetrators of less serious violations. Specific types of crime will be distinguished where necessary, but in many instances, the theories and methods discussed in this book apply as equally to analyzing serious crimes as they do to analyzing violations of a less serious nature. Similarly, this book distinguishes organized crime from independent crime where necessary but otherwise assumes that the theories and methods are equally applicable to both types of crime.

Intended Audience

This book is intended primarily for Canadian students of crime and intelligence analysis at the college and university levels. For the most part, the theories, concepts, and methods explained in this resource are foundational and will provide newcomers to the field with a well-rounded body of knowledge that can form the entry point for deeper exploration. Each chapter after this one includes key terms, open-ended questions, and multiple choice questions to help students

achieve these educational objectives. Chapter 10 of this book explores career opportunities for aspiring crime and intelligence analysts.

Even though it has been developed as an introductory resource that covers basic concepts and methods, this book also aims to be relevant for practitioners in the field, especially new and recently hired crime and intelligence analysts looking to advance their knowledge and skill sets. This book can be a valuable guide and reference resource for new practitioners in Canada's public law enforcement and private security sectors. Crime and intelligence analysts are hired from a broad range of areas and will not always come fully equipped with foundational knowledge in these fields.

Portions of this book may even prove relevant to the seasoned practitioner of crime and intelligence analysis. Chapter 11 is on advanced topics and methods in crime and intelligence analysis, discussing cutting-edge subjects around big data, artificial intelligence, machine learning, and predictive analytics. Appendixes in this book also include some advanced material relating to social network analysis and crime mapping. This book is also intended for managers of crime and intelligence units and departments, particularly if they are unfamiliar with the full breadth and depth of these twin fields.

Chapter-by-Chapter Summary

This book consists of 11 chapters, including this introductory chapter, and five appendixes. The following is a summary of each remaining chapter.

Chapter 2: Canada's Criminal Landscape

The practice of crime and intelligence analysis takes place within a particular criminal context. Chapter 2 highlights the unique Canadian criminal context by describing Canadian crime trends as well as prominent forms of organized crime and extremism. Key topics and features in Chapter 2 include the following:

- broad crime data and trends based on historical Statistics Canada data;
- a comparison of provincial, territorial, and municipal crime rates;
- issues and trends for specific crime areas relating to property, fraud, violence, vice, drugs, traffic, and misdemeanor;
- the prevalence of organized crime in Canada;
- the structure of Canadian criminal organizations;
- the main categories of organized crime in Canada and the criminal activity associated to the crime groups within these categories; and
- the primary types of extremism and terrorism in Canada.

Chapter 3: Canada's Security Apparatus

In addition to being familiar with Canada's criminal landscape, it is imperative for crime and intelligence analysts in this country to understand the features of the security apparatus that is in place to fight crime and extremism. Chapter 3 provides an overview of this security apparatus, focusing on organizations, legal regimes, and information management. Key topics and features in Chapter 3 include the following:

- public law enforcement organizations in Canada with a core crime and intelligence analysis mandate;
- key federal, provincial, territorial, and municipal organizations that play a role in crime and intelligence analysis;
- private and corporate security organizations in Canada's security apparatus and their connections to public law enforcement;

- pivotal pieces of legislation, case law, judicial mechanisms, and oversight bodies that both enable and restrict the practice of crime and intelligence analysis in Canada;
- fundamental principles of information management;
- information management infrastructure common to Canadian public law enforcement; and
- information management procedures common to Canadian public law enforcement, including major case management, document security standards, and data standardization practices.

Chapter 4: Foundational Principles of Crime Analysis

The field of crime analysis is built upon foundational principles, concepts, and theories. Chapter 4 explores these pillars of crime analysis, including the overarching goal of crime reduction, the distinctions between types of crime analysis, the role of environmental criminology in crime analysis, and major policing models. Key topics and features in Chapter 4 include the following:

- distinguishing tactical, operational, and strategic crime analysis in relation to the respective roles they play in crime reduction;
- distinguishing environmental criminology from traditional criminology;
- discussing core theories of environmental criminology—namely, routine activities theory and crime pattern theory;
- explaining key theoretical concepts in environmental criminology, including the problem analysis triangle, the Pareto principle, repeat victimization, the distribution of crime in micro places, and situational crime prevention; and
- summarizing major policing models, such as community policing, problem-oriented policing, and CompStat, which provide doctrines for the practice of crime analysis.

Chapter 5: Core Methods of Crime Analysis

Crime analysts across the world share a fundamental set of methodologies. Chapter 5 provides detailed and technical explanations of how to conduct these core methods of crime analysis, paying special attention to the distinctions and similarities in how they are employed by tactical and strategic crime analysts. Key topics and features in Chapter 5 include the following:

- manual and semi-automated pattern analysis used specifically in tactical crime analysis;
- essential statistical concepts, including frequency distribution, the normal curve, standard deviation, percentages, and rates;
- time-of-day and day-of-week analyses;
- weighted time span analysis;
- seasonality;
- time series analyses and moving averages;
- abnormal frequency analysis;
- percentage change;
- cross-tabulations; and
- 80/20 analysis.

Chapter 6: Crime Mapping

Crime mapping has become an integral component of crime analysis. Chapter 6 discusses fundamental aspects of crime mapping, including the technologies that enable crime mapping, the various purposes for which crime maps are created, the main types of crime maps,

and key cartographic principles of map-making. Key topics and features in Chapter 6 include the following:

- a brief history of crime mapping;
- geographic information systems (GIS) and related mapping technologies;
- geocoding;
- types of maps, including static maps, interactive maps, point maps, graduated symbol maps, buffer maps, and heat/density maps;
- key map design elements and practices;
- applications of crime maps in redistricting, support to operations, and event planning; and
- trends in crime mapping relating to dashboards and open analytics.

Chapter 7: Foundational Principles of Intelligence Analysis

An understanding of the field of intelligence analysis begins with an exploration of its foundational concepts and processes. Chapter 7 begins by distinguishing the three levels of intelligence analysis: tactical, operational, and strategic. The bulk of the chapter then provides an in-depth examination of each stage of the intelligence cycle. Key topics and features in Chapter 7 include the following:

- ways to distinguish tactical, operational, and strategic intelligence based on their roles, objectives, and predictive power;
- an in-depth examination of each stage in the intelligence cycle: planning and direction, collection, processing, analysis, and production and dissemination
- main types of intelligence requirements
- open and closed sources of data
- instructions on how to create an intelligence collection plan
- reliability systems used to evaluate the dependability of information
- data collation
- an overview of structured analytic techniques (SATs)
- key types of intelligence reporting
- recommendations for the creating of intelligence reports.

Chapter 8: Core Methods of Intelligence Analysis

Chapter 8 is divided into three sub-chapters, each of which discusses a core function of intelligence analysis: hypothesis testing (Chapter 8A), early-warning monitoring (Chapter 8B), and threat targeting (Chapter 8C). All three sub-chapters provide in-depth explanations of SATs relevant to these core functions. Key topics and features in Chapter 8 include the following:

- features of scientific hypotheses;
- hypothesis-generation SATs;
- analysis of competing hypotheses (ACH);
- controlled case comparisons;
- indicator tracking;
- environmental scanning;
- strengths, weaknesses, opportunities, and threats (SWOT) analysis, and capabilities, limitations, vulnerabilities, and intentions (CLVI) analysis;
- link analysis;
- social network analysis (SNA) and measures of centrality;
- general risk assessment methodology; and
- the 8-point scale risk assessment methodology (a derivation of the RCMP's Sleipnir methodology).

Chapter 9: Sources of Bias in Crime and Intelligence Analysis

Crime and intelligence analysts often deal with incomplete and inaccurate information and data and sometimes need to conduct analyses on this information and data in high-pressure environments with strict time constraints. These conditions leave crime and intelligence analysts especially vulnerable to bias. Chapter 9 aims to develop an awareness of these sources of bias. Key topics and features in Chapter 9 include the following:

- an explanation and examples of how heuristics (mental shortcuts) can impact crime and intelligence analysis;
- key heuristics, including representativeness, availability, and anchoring and adjustment heuristics;
- common biases associated with these heuristics, including base rate fallacy, confirmation bias, and hindsight bias; and
- techniques for mitigating heuristics and biases.

Chapter 10: Careers in Crime and Intelligence Analysis

The onset of the information age has been accompanied by an acute need for skilled practitioners who can synthesize and analyze the large volumes of data being produced. Chapter 10 equips aspiring analysts with the information they need to prepare for a career in crime and intelligence analysis in public law enforcement and corporate security in Canada. Key topics and features in Chapter 10 include the following:

- career trends, including civilianization and professionalization of the fields;
- day-to-day roles performed by crime and intelligence analysts;
- hard skills required for the fields, including types of analytical training and technology-related abilities;
- soft skills required for the fields, including critical thinking, interpersonal, and time management skills;
- salary expectations and employment prospects for Canadian crime and intelligence analysts at entry, senior, and management levels;
- educational and training pathways into crime and intelligence analysis positions in Canada, including post-secondary education, certifications, and professional associations; and
- employment application processes, including the application, testing, and interviewing stages.

Chapter 11: Advanced Topics and Methods in Crime and Intelligence Analysis

While the methods described in Chapters 5 and 8 of this textbook are used by crime and intelligence analysts on a daily basis, the landscape of analysis is rapidly changing. Increasingly, law enforcement and corporate security are turning to advanced methods to harvest and analyze the reams of data that have become available. Chapter 11 explores the topics and methods associated with this ongoing revolution in analysis. Key topics and features in Chapter 11 include the following:

- big data;
- artificial intelligence;
- machine learning;
- predictive analytics;
- advanced geospatial and spatiotemporal analytic techniques;
- ethical implications of algorithmic analytics; and
- evidence-based evaluations of analytic techniques.

Appendixes

Five appendixes complement the material provided in this text:

- Appendix A provides the full list of Uniform Crime Reporting Survey (UCR) violations, which complements Chapter 2's discussion of UCR violations and Chapter 3's discussion of the UCR and information management.
- Appendix B provides a detailed conceptual-level explanation of the processes underlying heat maps and hotspot maps, which complements Chapter 6's discussion of crime mapping.
- Appendix C provides instructions on how to calculate key measures of centrality, which complements Chapter 8C's discussion of SNA.
- Appendix D provides the original Criminal Intelligence Service Canada business rules for the "8-Point Scale," which complements Chapter 8C's discussion of threat assessment methodologies.
- Appendix E provides samples of employment postings for four crime and intelligence analysis positions, which complements Chapter 10's discussion of careers in the twin fields.

Conclusions: Distinctions and Connections Between Crime and Intelligence Analysis

On the surface, much separates crime analysis from intelligence analysis. As described in Parts II and III of this book, crime and intelligence analysis each has its own theories, processes, concepts, and methods. Crime analysts monitor and analyze crime levels and individual perpetrators while intelligence analysts monitor and analyze threat environments and focus on the networks of individuals creating those threats. Whereas crime analysts deal directly with community-level crime problems that pose day-to-day dangers to public safety, intelligence analysts deal more with systemic, societal-level threats. Crime analysts rely principally on occurrence data from incident reports whereas intelligence analysts rely heavily on human-source information from informants and agents and open-source data gleaned from the Internet.

But these distinctions are more illusory than real. Crime analysts routinely deal with criminal organizations, such as distraction theft rings, and intelligence analysts routinely deal with individual perpetrators such as lone-wolf terrorists. Strategic crime analysts often deal with systemic public safety issues, just as intelligence analysts deal with community crime problems caused by street gangs. Tactical crime analysts sometimes incorporate human source and open-source data in their analyses when supporting active investigations, and strategic intelligence analysts conduct crime-trend analyses and crime maps when analyzing criminal markets. Moreover, the overarching goals of both crime and intelligence analysis are the same: both disciplines aim to preserve the safety and security of citizens and institutions in the public sector, and the financial stability and viability of corporate entities in the private sector.

For this reason, the International Association of Crime Analysts (IACA), one of the world's foremost professional associations for crime analysts, does not distinguish between crime analysis and criminal intelligence analysis. A quick look at the information-exchange forums on IACA's website reveals that members are just as likely to be asking colleagues to identify a gang tattoo as they are to be asking for a technical tip on how to conduct a crime-trend analysis.

In Canadian public law enforcement, the larger agencies tend to create distinct roles for crime and intelligence analysts. However, this separation often belies the nature of their work. The trend in these disciplines is toward convergence rather than divergence. This book brings together crime and intelligence analysis to reflect this reality. By learning both disciplines, future and current analysts will be better prepared for the exciting work in either of these twin fields.

REFERENCES

Criminal Code, RSC 1985, c C-46.