

International Association of Crime Analysts (IACA)

Definition and Types of Crime Analysis

Standards, Methods, & Technology (SMT) Committee White Paper 2014-02
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About the IACA Standards, Methods, and Technology Committee

The International Association of Crime Analysts (IACA) is committed to a continuing process of professionalization through standards and knowledge development. In 2011, the IACA chartered the Standards, Methods, and Technology Committee (SMT) for the purpose of defining “analytical methodologies, technologies, and core concepts relevant to the profession of crime analysis.”¹ This document is part of a series of white papers produced by the SMT committee that executes this purpose. The methodology for formulating the positions reflected in the white paper series includes 1) development of a draft paper through in-depth meetings and discussions of Subject Matter Experts², 2) review and feedback by the IACA Executive Board, 3) review and feedback from an independent editor with knowledge of crime analysis, and 4) review and feedback by IACA members facilitated through the IACA website (www.iaca.net). Any questions about this process can be directed to the chair of the SMT Committee at SMT@iaca.net.

¹This quote comes from the mission statement as written in the initial Standards, Methods, and Technology Strategic Plan completed April 2011.

² Subject Matter Experts are identified by the Standards, Methods, and Technology Committee based on special knowledge obtained through publications, presentations, and practical experience and their willingness to participate.

Overview

As crime analysis continues to expand in police agencies around the globe, it is important for its practitioners to adopt a common set of definitions and terms for what constitutes the practice of the profession. Among current sources, there is inconsistency and disagreement in both definitions and typology, with authors offering anywhere between three and eight “types of crime analysis,” and definitions that vary considerably in what crime analysis is and what it means to be a crime analyst. To clear up some of this confusion, the IACA offers this paper as its authoritative definition and typology.

Among existing definitions, certain terms have become commonplace, appearing repeatedly in analysis literature, conferences, professional training, and informal discussions among analysts. In writing this white paper, the Standards, Methods, and Technology Committee sought to preserve common and useful terms, to avoid arbitrarily inventing new terms, and to create a typological model that fits with the traditions of agencies of all sizes and in all nations where crime analysts work. Nonetheless, for the sake of creating the best model, we have discarded some terms as no longer serving a useful purpose in the field, and we have defined others in ways that contradicts some existing literature. For the most part, professional crime analysts should find the terms and definitions in this paper familiar.

In broad summary, this paper, and the typology that it creates:

- Reaffirms traditional definitions of tactical, strategic, and administrative crime analysis, with some slight modifications
- Includes crime intelligence analysis as a form of crime analysis when practiced at local-level police agencies
- Maintains a traditional definition of “intelligence” in which the term applies to *people* (primarily offenders) rather than general crime information
- Discards the terms “investigative analysis” and “operations analysis” as suffering from too many conflicting definitions and too limited a role to deserve their own place in a typology
- Limits the term “administrative analysis” to those administrative responsibilities that actually include *analysis*

Clarification of Important Terms

In creating these definitions and this typology, there are a number of existing terms that we felt are impossible to reject even though a literal interpretation of them creates confusion, particularly among non-professionals such as students, citizens, and local government officials. These terms include:

The Word “Crime” in “Crime Analysis”

The crime analysis profession has a long and noble history under that name—a name included in the name of this association. Nonetheless, “crime” serves as an overly-limiting term for the subject of “crime analysis” and a “crime analyst’s” work. Professionals in the field understand that crime analysts study any information relevant to a police agency, including crimes, disorder, calls for service, quality-of-life issues, traffic collisions, and sometimes even fire and Emergency Medical Services (EMS) incidents. Despite our continued use of the term, it must always be understood that the processes and types of crime analysis apply to more than just crimes. Analysts with titles such as “public safety analyst” and “police information analyst” are in the minority, yet these titles are more representative of a “crime analyst’s” scope of responsibility.

Crime analysis as serving "police agencies"

Herein, we define crime analysis as serving "police agencies." We mean this to encompass all agencies with general law enforcement authority, with patrol, investigative, emergency response, prevention, and community service functions. Such agencies include municipal police departments, county police departments, county sheriffs' offices (in some states), state police agencies, institutional police agencies (such as university police), and national, provincial, and regional police agencies with local-level police responsibilities.

Investigative agencies, intelligence agencies, researchers, statistical analysis centers, and corporate security departments might use aspects of crime analysis to inform their work, but they will not require the use of all types and techniques of crime analysis, and hence it is not their work that these definitions and this typology primarily describe.

"Intelligence"

"Intelligence" is perhaps one of the most confounding terms in the crime analysis field. As a noun, the term is used classically to describe information about an enemy, generally obtained covertly, thus giving rise to the terms "military intelligence," "criminal intelligence," and "intelligence analysis." In more recent years, some authors have sought to define it to any information of operational value—as a product, rather than a source, of analysis. It is nearly impossible to reach consensus as to the meaning of the term, yet equally impossible to reject it entirely given its proliferation in the field. (For verification of this confusion even within agencies that have "intelligence" in their names, see Central Intelligence Agency, 2011).

With so many conflicting definitions, it seems prudent to adopt a stricter definition of the term than some authors would advocate. To the average member of the public, knowing that the local police agency has an "intelligence analyst" likely carries a significantly different connotation than knowing that the agency has a "crime analyst," as it does to many members of the profession, and as local-level police agencies, we must exist under the burden of this perception. For this reason, we adopt a definition of "crime intelligence analysis" below that maintains a focus on *people* as opposed to crime information in general, with the further implication that much of the data collected in the service of "intelligence analysis" is covert. We also explicitly reject the notion that "intelligence" is somehow a higher form of "information." We use "information" to refer to analyzed data, and "intelligence" is a *specialized* but not more important form of information.

Definition of Crime Analysis

Crime analysis is a profession and process in which a set of quantitative and qualitative techniques are used to analyze data valuable to police agencies and their communities. It includes the analysis of crime and criminals, crime victims, disorder, quality of life issues, traffic issues, and internal police operations, and its results support criminal investigation and prosecution, patrol activities, crime prevention and reduction strategies, problem solving, and the evaluation of police efforts.

"Crime analysis" includes all types of analysis performed within a police agency, with the exception of evidence (including DNA) analysis and some administrative analysis related to budgeting, personnel (e.g., overtime, sick and vacation leave, salary), and equipment. In particular, and despite some historical precedent, the IACA recognizes no distinction between crime analysis and crime intelligence analysis as performed within a police organization. Certain analysts may specialize in certain functions, of course (as per the types of crime analysis below), but otherwise, within a police agency, we see crime intelligence analysis as a set of techniques performed by crime analysts.

Types of Crime Analysis

The types of crime analysis are organized around several factors, including the nature and source of the data, the techniques applied, the results of the analysis, the regularity and frequency of the analysis, and the intended audience and purpose. No typology will ever result in a set of definitions that are completely exclusive or exhaustive; we must always be prepared for some overlap in definitions depending on the circumstances, as well as new ideas and techniques to emerge. The goal of this section is to provide a structure for the focus and work of crime analysts, to assist with crime analysis education and training, and to support professional activities such as job descriptions, roles, and responsibilities.

More specifically, thinking in terms of categories helps the profession in several ways:

- It helps police agencies identify areas in need of development in both analysis and response, and to ensure that their analysts are providing a full range of services
- It helps analysts identify areas in which they need to develop skills and to plan daily, weekly, monthly, and annual tasks
- It helps analysts categorize products and plan schedules for product dissemination
- It helps professional associations plan training and literature
- It highlights which techniques and tools work better for which purposes

The IACA recognizes four major categories of crime analysis, ordered from specific to general: 1) crime intelligence analysis, 2) tactical crime analysis, 3) strategic crime analysis, and 4) administrative crime analysis. Each of these types has a number of sub-categories and processes; we enumerate some of them in the definitions below, but these sub-categories should not be regarded as exhaustive.

Crime Intelligence Analysis

Crime intelligence analysis is the analysis of data about people involved in crimes, particularly repeat offenders, repeat victims, and criminal organizations and networks. It seeks to understand more about the context of the lives, jobs, activities, motives, and plans of these individuals and networks, using this information to find ways to deter or disrupt harmful activity, often through priority enforcement, prosecution, and military or paramilitary action, but also strategies that do not depend on enforcement, such as focused deterrence.

To this extent, crime intelligence analysis may use police record data as a starting point, but the crux of the process involves the confidential collection of information—"intelligence"—about individuals and networks, with associated concerns related to data security, access, and privacy, and the subsequent transformation of that information from data into intelligence through analysis.

Processes and techniques of crime intelligence analysis include:

- Repeat offender and victim analysis
- Criminal history analysis
- Link analysis
- Commodity flow analysis
- Communication analysis
- Social media analysis

“Criminal intelligence analysis” historically developed as a profession parallel to crime analysis, drawing from a tradition of military intelligence and applying its techniques to domestic “enemies” like organized crime enterprises. It has flourished in national, international, and special-purpose organizations such as the U.S. Federal Bureau of Investigation, the U.K. Security Service, and Interpol; in U.S. Fusion Centers; and in very large local police organizations.

Aside from the large local police agencies, these other agencies have mandates that generally restrict their analytical needs to analysis of people, networks, and criminal organizations. This, in turn, justifies the continued development of criminal intelligence analysis as a specialized profession. For those analysts who perform only intelligence analysis, it makes sense for them to classify themselves as a profession distinct from crime analysis. In local-level police organizations, however, which need all types of crime analysis, we regard the separation of intelligence analysis from the overall profession of crime analysis as artificial, even harmful to a total understanding of the crime dynamic of a jurisdiction. (See Ratcliffe [2007], for a longer discussion of these issues and justification for an integrated approach in a local-level police agency.)

Tactical Crime Analysis

Tactical crime analysis is the analysis of police data directed towards the short-term development of patrol and investigative priorities and deployment of resources. Its subject areas include the analysis of space, time, offender, victim, and *modus operandi* for individual high-profile crimes, repeat incidents, and crime patterns, with a specific focus on crime series (see International Association of Crime Analysts, 2011, for definitions of crime pattern types). Most of the data used in tactical crime analysis comes from police databases, particularly police reports of crimes.

Processes and techniques of tactical crime analysis include:

- Repeat incident analysis
- Crime pattern analysis
- Linking known offenders to past crimes

To the extent that criminal “profiling” or criminal investigative analysis occurs within local police agencies, we regard it as inherent in the tactical analysis process, as its focus is almost always on a series of crimes.

Strategic Crime Analysis

Strategic crime analysis is the analysis of data directed towards development and evaluation of long-term strategies, policies, and prevention techniques. Its subjects include long-term statistical trends, hot spots, and problems. Although it often starts with data from police records systems, strategic analysis usually includes the collection of primary data from a variety of other sources through both quantitative and qualitative methods.

Processes and techniques of strategic crime analysis include:

- Trend analysis
- Hot spot analysis
- Problem analysis

The major contribution this paper makes to the understanding of strategic crime analysis is that we consider “problem analysis” as a part of it. In other publications, “problem analysis” often exists as a separate type of analysis, or even external to the crime analysis field.

Administrative Crime Analysis

Administrative crime analysis is analysis directed towards the administrative needs of the police agency, its government, and its community. As a broad category, it includes a variety of techniques and products, performed both regularly and on request, including statistics, data printouts, maps, and charts. Examples include workload calculations by area and shift, officer activity reports, responses to media requests, statistics provided for grant applications, reports to community groups, and cost-benefit analysis of police programs. In this category, we subsume the category described as "operations analysis" or "police operations analysis" by some texts.

Despite its reputation and some historical views, administrative analysis is a valid and valuable category of crime analysis, supporting a police agency's efforts in planning, community relations, and funding, among many other areas. It does *not* include administrative tasks that are not truly "analysis," such as preparing leaflets for police events or performing basic technology support. That crime analysts often do many things unrelated to analysis is a reality of the profession, but not one that we need codify into a typology of the field.

Processes and techniques of administrative crime analysis include:

- Districting and re-districting analysis
- Patrol staffing analysis
- Cost-benefit analysis
- Resource deployment for special events

Discussion of a Crime Analysis Typology

As previously noted, no crime analysis typology will result in an entirely mutually-exclusive set of definitions. There is considerable overlap between tactical and strategic crime analysis in the vague definition between "long-term" and "short-term"; between tactical crime analysis and crime intelligence analysis depending on whether we start with a set of crimes with unknown offenders or a set of offenders with unknown crimes; and between strategic crime analysis and administrative crime analysis in considerations such as when a statistical report becomes a "trend analysis."

The justification for the dimensions that make up this typology comes from a *general* separation of data, tasks, and results among four categories. The first dimension is the confidentiality of the analytical product, and it tends to line up with the second dimension. Crime intelligence analysis and tactical crime analysis products are almost always internal products, kept confidential so as to avoid compromising an investigative or patrol strategy. Strategic crime analysis and administrative crime analysis products are more likely than tactical and intelligence analysis products to inform audiences outside the police agency.

The second dimension is the regularity and speed of the analysis in each category and it tends to line up with the first dimension. Tactical analysis is a daily process by which the analyst (among other things) searches for emerging patterns, and the regularity of administrative analysis requests makes it a very frequent process as well. Strategic crime analysis and crime intelligence analysis are slower and more careful, deliberate processes that rarely result in daily products, as they tend to support long term strategies (though of different types) rather than short-term operations.

The third dimension is the importance of the offender relative to the analysis process. Except in repeat victim analysis, an offender is almost always the focus of crime intelligence analysis, and except in the case of short-term crime patterns that are *not* series, much of tactical crime analysis focuses on describing and identifying offenders. Apprehension and prosecution of offenders is often the outcome of both processes. The analysis of specific offenders takes on much less importance in both strategic crime analysis and administrative crime analysis, though for different reasons.

The fourth dimension is the importance of police incident data relative to primary data collected by the analyst, officers, or other police personnel. Both tactical crime analysis and administrative crime analysis can be performed largely from the data that exists in the typical police computer-aided dispatch or records management system, while both crime intelligence analysis and strategic crime analysis depend on the deliberate collection of additional data to place either persons or crimes in a broader context.

Dimensions of Analysis



Figure 1: The types of crime analysis in four dimensions

There are exceptions to all of these areas, of course, but these considerations do, in general, serve to justify these four types of crime analysis.

Not Types of Crime Analysis

Although these terms often appear in literature related to the field, the IACA rejects the following as categories of crime analysis:

- *CompStat analysis.* Depending on agencies' approaches, CompStat models can be tactical, strategic, administrative, or intelligence-oriented, and thus analysis for CompStat can take on any or all of these characteristics. CompStat is an outlet for many types of analysis but not a unique type of analysis itself.
- *Crime mapping.* Crime mapping is a set of skills and technologies useful to all types of crime analysis, not a unique category of crime analysis.
- *"Criminal analysis."* This term has gained favor in some sources (e.g., Peterson, 1998; Baker, 2004) that use it in an attempt to unify crime analysis and criminal intelligence analysis. It has not generally been embraced by practitioners, and we find the term unsatisfying to describe any aspect of crime analysis, which almost always involves more than just the criminal.
- *Criminal investigative analysis.* To the extent that criminal investigative analysis, which is also sometimes called "profiling," is performed within police agencies, by crime analysts, it is almost always part of the tactical crime analysis process. We therefore include it as a technique there and not a separate type.
- *Evidence analysis or crime scene investigation.* There will be no confusion in this area among actual professionals in the field, but for other readers we must emphasize that crime analysis has nothing to do with the analysis of crime scene evidence, including blood spatters, DNA, fingerprints, and ballistics. Crime analysis is wholly unrelated to forensic science.
- *Investigative, clerical, and administrative support.* Particularly given their computer skills, crime analysts are often called upon to provide various types of support unrelated to analysis, including preparing "wanted" or "BOLO" posters for an investigative unit, creating facial line-ups, performing information technology duties, and running basic searches in common databases. Although such tasks might be vital to a police agency, and we don't specifically discourage analysts from helping in these areas when necessary, they are not analysis tasks and we see no need to codify them under any typology of crime analysis.
- *Operational analysis.* The term appears in some European typologies (e.g., INTERPOL, 2014), almost always synonymous with tactical crime analysis. Between the terms, we must prefer "tactical crime analysis" as holding a more secure historical foothold in the profession. Also, the term is easy to confuse with "operations analysis" below.
- *Operations analysis.* Operations analysis is often defined in literature as the analysis of police operations, including workload distribution by area and shift (e.g., International Association of Crime Analysts, 2008, pp. 18–19). The techniques associated with these processes are too limited, and the literature too scant, for the practice to merit a separate category of crime analysis. We enfold it in administrative crime analysis for this reason, as well as because it is too easy to confuse with "operational analysis," which is used by some international agencies.
- *Police planning.* Although aspects of budget, equipment, and personnel analysis are sometimes part of administrative crime analysis, we do not seek to extend the crime analysis profession to encompass all types of research and analysis that go into the profession of police planning.

- *Predictive analysis*. Tactical crime analysis, strategic crime analysis, and crime intelligence analysis are all inherently predictive; the only point in analyzing any of their subjects is the likelihood that they will continue to present a threat in the future. There are techniques within all of these analysis types that help improve the accuracy and precision of predictions, but predictive analysis is not otherwise a unique type of analysis.

Finally, we must note that the types of crime *analysis* may be distinct from the types and titles of crime *analysts* as organized by a particular police agency. Agencies that employ multiple analysts may distinguish them in several ways, including crime analysis type, crime type, geographic area, and technical specialty. In this paper, the IACA takes no position on the method of dividing analytical responsibilities among multiple analysts in a large unit or what their job titles should be.

Summary

This paper provides the IACA's official definition of crime analysis and its designation of four major types: 1) crime intelligence analysis, 2) tactical crime analysis, 3) strategic crime analysis, and 4) administrative crime analysis. We believe this typology, and these definitions, fully describe the work of analysts at local-level police agencies, reduce confusion inherent in previously-published typologies, and provide a template for literature, training, and professional development.

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