

1 Fundamentals of Crime Analysis

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Information is the most valuable commodity in the world. It's more valuable than money, for with it one can make money. It's more valuable than power, for with it one can achieve power. It's more valuable than goods, for with it one can build, acquire, and improve goods. In any business, in any industry, in any part of the world, the right information is absolutely priceless.

Businesses invest a great deal of money, time, and resources in the quest to acquire information—information about their products, and how to improve them; information about their competitors, and what they're up to; information about customers and what they want; information about the business itself, and how its various divisions are doing. Governments rise and fall on information—information about the opinions and attitudes of their citizens; information about allies; information about enemies. Information wins wars, builds cities, heals the sick, enriches the poor, and—most relevant to our purposes—solves and prevents crime.

Industries, organizations, and companies realize these principles on an operational level. Consequently, they devote individuals, units, and sometimes entire divisions to collecting, processing, and disseminating information. Businesses have product researchers and testers, budget analysts, management analysts, and market researchers. Every division of government has policy analysts, and the federal government hires and trains spies and intelligence specialists. Insurance companies employ actuaries and claims analysts. Every

time you see the word “analyst” in a person's job title—research analyst, budget analyst, policy analyst, business analyst, market analyst, stock analyst, intelligence analyst, and so on—you're dealing with someone whose job revolves around information—information designed to help a company, agency, or organization do its job better.

Such is the case with crime analysts. Crime analysts provide information to police agencies about crime, disorder, calls for service, police activity, and other areas of police interest, all with the goal of helping the agencies do their jobs better. Specifically, crime analysts help police agencies:

- Solve crimes
- Develop effective strategies and tactics to prevent future crimes
- Find and apprehend offenders
- Prosecute and convict offenders
- Improve safety and quality of life
- Optimize internal operations
- Prioritize patrol and investigations
- Detect and solve chronic problems
- Allocate resources
- Plan for future resource needs
- Enact effective policies
- Educate the public

This list applies primarily to municipal police departments, but other law enforcement and criminal justice agencies can enjoy the benefits of crime analysis even if their charters do not include some of the goals listed above. Wherever a crime analyst is employed, his or her job is to provide information support for the agency's overall mission.

Data, Information, and Knowledge

Information shares some characteristics with other “commodities” like metals, grain, or automobiles. First, human effort has to go into

the production of these commodities. Metals must be mined from the Earth, grain must be planted and harvested, and automobiles must be manufactured on an assembly line. Second, all commodities are created from raw materials—ore, seeds, and parts in our examples. Third, the production of these commodities serves little purpose until they are delivered to a consumer.

An analyst’s effort is what creates information, whether that information is “built” or “mined.” A metaphor that works well is to see the analyst as a sculptor. Some sculptures are created by combining and molding pieces of clay, much as an analyst creates information by combining pieces of data. Other sculptures are created by chipping away extraneous pieces of stone to reveal a shape inside, much as an analyst filters out extraneous pieces of data to find the one that reveals a fact or truth.

Either way, the analyst’s raw material is *data*, which might come from numerous sources. Out of this data, the analyst seeks to create *information*, which he then delivers to his “consumer”—the police agency. This information, once internalized, becomes *knowledge* that informs police action. Two processes are at work:

1. *Data* becomes *information* when it is effectively *analyzed*.
2. *Information* becomes *knowledge* when it is effectively *communicated*.

Though the title *crime analyst* focuses on the analysis process, both analysis and communication fall within the crime analyst’s area of responsibility.

In Figure 1-1, note the lines from “Information” and “Knowledge” back to “Analysis.” The transition of data into analysis

is a self-feeding loop, as new data is juxtaposed against existing information and knowledge to create further levels of analysis.

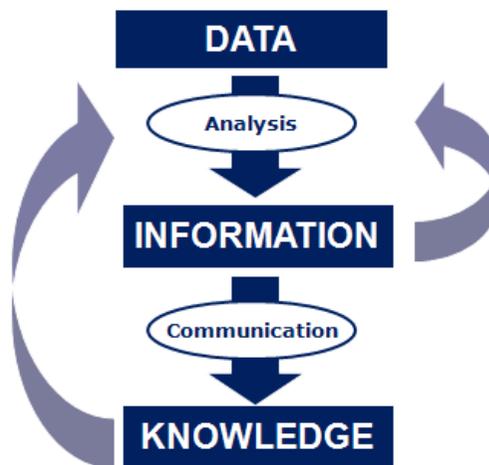


Figure 1-1: The transition from data to knowledge

Table 1-1 shows some ways in which this process works in a typical municipal police agency, with examples of tactical, strategic, and operational applications.

A History of Crime Analysis

The practice of crime analysis probably predates the profession. Some of the most essential functions of crime analysis—such as identifying hot spots for extra patrol—were likely performed in ancient times. In the modern era, crime analysis techniques and products were used in the first modern police force, the London Metropolitan Police, in the 1800s. “Detectives,” who identified patterns of crime, were first assigned in London in the 1840s; crime statistics were available for the city as early as 1847; and it was within this department that the concept of *modus operandi*, and of classifying offenders and crimes based on it, first appeared in the second half of the nineteenth century.

Table 1-1: Examples of the transition from data to knowledge in a typical police agency

| Data | | Information | | Knowledge | | Result |
|--|-----------------|---|----------------------|--|------------------------------|---|
| Individual Incident Reports in a records management system | Analysis | Six of the reports are related in a series of robberies | Communication | Robbery series is prime topic of discussion in next detective's meeting | Strategy & Action | Robbery offender is apprehended |
| Statistics showing number of officers per capita throughout the state | | Your police department has 20% fewer officers per capita than average | | Chief has this information in mind when preparing his budget proposal | | Agency is granted additional officers by city |
| Crime volume of current year compared to past years; individual records in RMS; jurisdictional information | | Auto theft is up 20%, with most of the increase in Police Beat 5 on the midnight shift, probably influenced by new sports arena | | Officers internalize this information and consider it when patrolling Beat 5 | | Auto theft is reduced |

As other police around the world adapted or emulated the London model, they developed their own versions of these techniques. Methods of pattern identification and analysis are performed by every patrol officer in the regular course of his or her duties. As one early crime analysis manual observes:

Informal crime analysis, in its simplest sense, is performed by all officers as they investigate crimes. Crime analysis is the quality of examining one crime occurrence and comparing it with similar past events. In essence, the officer is a walking crime analysis unit as he compares his investigations with his past experiences and with the experiences of others.¹

American police reformers in the twentieth century began to formalize the use of crime analysis techniques. One early proponent of the use of analysis, August Vollmer (1876-1955), has been called “the father of American policing.” Vollmer served as the Chief of Police of Berkeley, California, from 1905 to 1932. His innovations range from police radios to fingerprinting, and include (relevant to our

purposes) pin mapping, the regular review of police reports, and the formation of patrol districts based on crime volume.

When Vollmer mobilized his beat officers on bicycles in 1909, he laid out beats in accordance with the number of calls anticipated from each part of the city.²

Though the term “crime analysis” had not yet appeared in law enforcement literature, one quote from Vollmer’s “The Police Beat” shows he was familiar with its concepts:

On the assumption of regularity of crime and similar occurrences, it is possible to tabulate these occurrences by areas within a city and thus determine the points which have the greatest danger of such crimes and what points have the least danger.³

Vollmer’s protégé, Orlando Winfield Wilson (1900-1972), served as a police executive in a number of agencies, including the Chicago Police, where he was Superintendent from 1960 to 1971. Wilson wrote several influential books, including *Police Records* (1942), *Police Administration* (1950), and *Police Planning* (1957).

¹Robert Austin et. al., *Police Crime Analysis Unit Handbook* (Washington, DC: Law Enforcement Assistance Administration, 1973), 3. Note, though, that the text implies a limited definition of the term “crime analysis” that focuses only on pattern analysis.

²G. Hobart Reiner et. al., *Crime Analysis in Support of Patrol* (Washington, DC: Law Enforcement Assistance Administration, 1977), 8.

³Quoted in Reiner, *Support of Patrol*, 9.

Exploring Crime Analysis

It is in Wilson's second edition (1963) of *Police Administration* that we find the first written citation of "crime analysis":

Crime Analysis. The crime-analysis section studies daily reports of serious crimes in order to determine the location, time, special characteristics, similarities to other criminal attacks, and various significant facts that might help to identify either a criminal or the existence of a pattern of criminal activity. Such information is helpful in planning the operations of a division or district.¹

Though this is the earliest known source of the term, Wilson's use suggests that there were already crime analysis units in existence at the time of his writing. His third edition of the book offers several pages on crime analysis and contributed to the growth of the profession in the late 1970s, when many formal crime analysis programs developed across the United States with funding from the Law Enforcement Assistance Administration (LEAA). To support these programs, the LEAA published a series of manuals on crime analysis between 1973 and 1977. Crime analysis became one of four facets of the LEAA's Integrated Criminal Apprehension Program (ICAP), and to this day, long after the death of ICAP, some crime analysis units are known colloquially as the "ICAP Unit."

When the LEAA lost the last of its funding in 1982, the profession of crime analysis entered a dry spell. Few new units developed, except in certain states where local support was strong, or in agencies trying to gain accreditation through the Commission on Accreditation for Law Enforcement Agencies (CALEA). Many crime analysts funded through the LEAA and ICAP lost their jobs.

¹ Orlando W. Wilson, *Police Administration*, 2nd ed. (New York: McGraw-Hill, 1963), 103.

The 1990s brought a "Golden Age of Crime Analysis" in the U.S., characterized by:

- The 1990 publication of *Problem-Oriented Policing* by Herman Goldstein, who worked with O.W. Wilson in Chicago.
- The formation of the International Association of Crime Analysts (IACA) in 1990, and its first conference in 1991.
- A certificate program in crime analysis offered by the California Department of Justice, starting in 1992.
- New and plentiful funding from the U.S. Department of Justice. Much of it focused on community policing and problem-oriented policing.
- Powerful, affordable technology, including crime mapping applications, desktop publishing, and relational databases.
- The development of the "CompStat" system of strategy development and management accountability within the New York City Police Department. (The first CompStat meetings were held in 1994.) The CompStat process relies heavily on mapping and analysis.
- The foundation of the National Institute of Justice Crime Mapping Research Center (now called the Mapping & Analysis for Public Safety program) in 1997.
- The foundation of the National Law Enforcement and Corrections Technology Center's Crime Mapping and Analysis Program (CMAP) in 1998.

This combination of factors caused a proliferation of new U.S. crime analysts and crime analysis units throughout the 1990s. At the same time, in the United Kingdom, the Crime and Disorder Act of 1998 created a host of new local-level analysts by requiring local governments to set measurable crime

reduction goals and produce regular audits and statistical reports. New analysts in all countries had access to new ideas, literature, professional standards, support, and training that were not available to their 1970s counterparts.

The homeland security era of the 2000s has in some ways been difficult for local-level U.S. crime analysts, as time, funding, and attention have diverted away from local-level crimes and into terrorism prevention and war. A recession has reduced the amount of money available to local police agencies, and the development of new crime analysis programs has slowed. But at the same time, the professionals within the field have banded together to develop training, literature, and certification.

Conversely, many other countries have seen exponential growth in crime analysis during the 2000s, especially in regions in which there is no distinction between intelligence and crime analysis (see page 12). In the U.K., Australia, and Canada, the homeland security era has coincided with the adoption of intelligence-led policing models and the U.K.-originated National Intelligence Model. Unlike the U.S., where dedication to crime analysis varies between states and individual agencies, these nations and others have shown a national commitment to the profession.

This book is being published shortly after the election of Barack Obama to the presidency. He has expressed the wish to restore local law enforcement community policing funding to its 1990s levels, but the global economic recession bodes ill for government agencies. It remains to be seen which factors will prevail.

Classifications of Law Enforcement Analysis

Crime analysis is one of several types of analysis that fall under a macro-heading variously called “law enforcement analysis,” “public safety analysis,” or “police analysis.”

“Law enforcement analysis” is probably the most common. We may define it as follows:

Law enforcement analysis: Processes, techniques, and products that provide information support to the various missions of law enforcement agencies.

(“Law enforcement agency” is a common term that comprises municipal police, state police, and investigative or special-purpose agencies with local, state, national, or international jurisdiction. It is generally understood that these agencies—particularly local police—do much more than simply enforce the law. The different types of analysis under this heading support *all* missions of these agencies, and not just those geared toward “law enforcement.”)

Within this overall field, we find crime analysts, criminal intelligence analysts, and criminal investigative analysts.¹

Crime analysts study crime and disorder data; identify and analyze patterns, trends, and problems; and create and disseminate information that helps police agencies solve, reduce, and prevent them.

Criminal intelligence analysts concentrate on the collection and dissemination of information about criminals, particularly organizations and conspiracies. Intelligence analysts hunt for leads on the structure and hierarchy of criminal organizations, the flow of money and goods, relationships, current activities and plans, and personal information about the participants—usually with the goal of arrest, prosecution, and conviction of the offenders involved.

¹ Steven Gottlieb, Sheldon Arenberg, and Raj Singh, *Crime Analysis: from First Report to Final Arrest* (Montclair, CA: Alpha Publishing, 1994), 11-13. This is the earliest known text to divide the functions of analysis this way. The authors include “operations analysis” as a category of law enforcement analysis, but other crime analysts seem to recognize operations analysis as a function specific to crime analysis; it is presented that way here.