

Foundations of Criminal Investigation

“Our current system of criminal investigation is a direct result of what we have learned and what we have inherited from the past.”

- 1 Explain the history of criminal investigation.
- 2 Identify how research affects criminal investigation.
- 3 Discuss the objectives of criminal investigation.
- 4 Distinguish the difference between inductive and deductive reasoning.
- 5 Explain the expanding role of the patrol officer as criminal investigator.
- 6 Discuss the solvability factors in a criminal investigation.
- 7 Describe the preliminary investigation process.



CAN MURDER BE JUSTIFIED?

In March 2006, Mary Carol Winkler, the wife of a minister in a small Tennessee town, shot her husband of ten years, Matthew Winkler, in the back with a 12-gauge shotgun while he slept. Throughout the ensuing trial, Winkler, along with family and friends, claimed that her husband had mistreated her and that the mistreatment had inspired the shooting. On April 20, 2007, Winkler was convicted of voluntary manslaughter.

After the shooting, Winkler was arrested in Orange Beach, Alabama, where she had fled with her three young daughters, and extradited to Tennessee. There, a grand jury indicted her on charges of first-degree murder.

When Winkler took the stand in her own defense two days before her conviction, she told

DISCUSS

The law recognizes that under some circumstances there can be justification for the taking of a life. When investigating a homicide that—according to the suspect—is justified, what investigative resources should be considered beyond those of law enforcement?

the jury of her alleged abuse at the hands of her husband, with whom she had frequent arguments. She said that the shooting was an accident and that she had actually been trying to reconcile with her husband at the time of the murder. She also claimed that although the gun had discharged, she could not remember having pulled the trigger. She explained her flight to Alabama by saying that she had been trying to get away from her angry husband.

Winkler was ultimately convicted of voluntary manslaughter and sentenced on June 8, 2007, to 210 days in prison, 5 months of which she had already served. She spent some time in a Tennessee mental health facility and then served the remainder of her sentence on probation. Eventually, she was awarded custody of her children.

The study of criminal investigation involves probing several different fields at once, and is therefore a difficult task about which to write. For example, it is important for an investigator to understand the basic techniques of collection and preservation of evidence, but to do so, a fundamental understanding of criminalistics or forensic science is often required. In addition to technical

competence, modern-day investigators must be well versed in the law. Legal skills include a working knowledge of criminal law, constitutional law, and rules of evidence, all of which are essential for successful prosecution of a criminal case. This chapter is designed to give the reader the underlying essentials of this field of policing, which is both rewarding and challenging.

► The History of Criminal Investigation

The roots of America's system of criminal investigation go back to the towns and cities in England during the eighteenth and nineteenth centuries. The ensuing crime wave forced law enforcement officials to take drastic measures. As a result, **thief catchers** were recruited from the riffraff of the streets to aid law enforcement officials in locating criminals. Two classes of thief catchers were identified: (1) hirelings, whose motivations were mercenary in nature; and (2) social climbers, who would implicate their accomplices in order to move up the social ladder.

In England, the first police worked only at night and were originally called the Watch of London. They soon developed into the **Old Charleys**, who were paid by the residents they served. These parish constables originated in London in 1253 and lasted until 1829.

Criminal Investigation in England

The Bow Street Runners

During the 1750s, crimes such as burglary and street robbery were rampant in England. Fielding took on the challenge of reducing the profits realized by criminals. Working

relationships were established with local business owners, in particular pawnbrokers, who were provided with lists of stolen property. Fielding encouraged them to contact him if any stolen property came to their attention. Fielding took seriously his new duty as crime fighter and promptly employed new crime-fighting methods. One such method was the appointment of a handful of parish constables acclimated to night watchman duties. These trackers soon began performing criminal investigation functions and became well known as successful thief takers by using their ties with London's criminal underworld. Originally called "Mr. Fielding's People," they soon became known as the **Bow Street Runners**, the first well-known investigative body in England. Fielding's runners were not paid as police officers but rather in terms of thief-taker rewards, a percentage of all fines resulting from successful prosecution of thieves.

The Bow Street Runners were forerunners of a trend in policing for specialization within the police force. In fact, by 1800, the Bow Street Police Office was considered by many to be the leading law enforcement organization in the area.

The London Metropolitan Police

The great watershed in British police development occurred in 1829 with the establishment of the London Metropolitan Police Department. Officers of the department were dubbed **bobbies** after the department's founder, Home Secretary Sir Robert Peel. The "new" police were England's first paid, full-time police force, consisting of about 1,000 uniformed officers. In addition, they replaced the old constables, such as the Bow Street Runners, who had ultimately gained a reputation of incompetence and inefficiency. Indeed, the bobbies were required to meet rigid standards of professionalism. Minimum standards included minimum weight and height requirements and standards of literacy and character.

Technology in crime detection began to flourish during the nineteenth century with the creation of a personal identification system by Alphonse Bertillon, the director of the criminal identification section of the Paris Police Department. The **Bertillon system** was based on the idea that certain aspects of the human body, such as skeletal size, ear shaping, and eye color, remained the same after a person had reached full physical maturity. It used a combination of photographs with standardized physical measurements.

In the mid-1840s, the study of fingerprint patterns became a popular means to identify suspects in crime. Although the use of fingerprints is commonplace today, it wasn't until the late nineteenth century that it was learned that a person's fingerprints could act as a unique, unchangeable method of personal identification. Such discoveries have been credited to the Englishmen William J. Herschel and Henry Fields, who were working in Asia at the time.

The Creation of Scotland Yard

For many people, much misunderstanding has existed about the function and role of **Scotland Yard**. Some believe that it represents a single police authority in Great Britain. In fact, it is the headquarters of London's Metropolitan Police and has never exerted any authority over other police organizations in Great Britain. Although London's Metropolitan Police was founded in 1829, it took more than 10 years to organize a detective branch. Even then, however, "the Yard" was only a small division within the department. The strength of the force was increased in 1867 after an incident in which an explosion occurred when a small group of Irishmen were trying to free a prisoner from the Clerkenwell House of Detention. Several citizens were killed. A decade later, another reorganization occurred when several senior detectives of Scotland Yard were convicted of corruption charges.

Criminal Investigation in America

As the American frontier moved westward during the nineteenth century, outlaws posed serious problems in newly settled areas. Mining camps and cattle towns seemed to experience more violence than other areas. The movement west had moved men and women far from the institutions that had served them previously. Law enforcement agencies and criminal courts, if present at all,

1870 By the 1870s, almost all major U.S. cities had municipal police departments.

made only minor strides in protecting the vast areas under their jurisdictions. Indeed, it was in these areas that criminals could easily hide and witnesses would often move away, making detection and apprehension of criminals a discouraging task.

Following the lead of London's police force, the first professional police forces were established in the United States at Boston in 1837, New York in 1844, and Philadelphia in 1854.

By the 1870s, almost all major U.S. cities had municipal police departments. As in England, criminal investigation by public law enforcement was viewed as politically hazardous because it favored only those who could pay. But the rapid growth of cities produced violence, crime, and vice activities that demonstrated a breakdown of social order in small communities. Growing incidents of mob violence between Protestants and Catholics, immigrants and Native Americans, and abolitionists and pro-slavery groups were probably the most crucial catalysts for expanded police functions.

The Pinkerton National Detective Agency

Pinkerton's National Detective Agency, founded in 1850 by Scottish immigrant Allan Pinkerton, was the first organization of its type in the United States. In fact, its organizational structure was later adopted by the Federal Bureau of Investigation (FBI). The Pinkerton Agency was called on by communities to handle cases

that local law enforcement officers were unable to investigate due to incompetency or limited resources. Pinkerton offered the field of criminal investigation several innovations in crime detection. For example, he was the first to devise a **rogues' gallery**, which was a compilation of descriptions, methods of operation, hiding places, and names of associates of known criminals.

The Creation of the FBI

Probably the single most significant development in criminal investigation in the United States was the establishment of the FBI in 1924. Originating as the Justice Department's Bureau of

LEARNING
OUTCOMES
1

Explain the history of criminal investigation.

GLOSSARY

thief catchers People recruited from the riffraff of the streets to aid law enforcement officials in locating criminals during the European Industrial Revolution.

Old Charleys The first police worked only at night and were originally called the Watch of London. They were paid by the residents they served.

Bow Street Runners A group of English crime fighters formed by Henry Fielding during the eighteenth century.


bobbies The name of London Metropolitan Police Department officers; they were named this after the department's founder, Home Secretary Sir Robert Peel.

Bertillon system An early criminal identification or classification system based on the idea that certain aspects of the human body, such as skeletal size, ear shape, and eye color remained the same after a person had reached full physical maturity. This system used a combination of photographs with standardized physical measurements.

Scotland Yard One of the first criminal investigative bodies originally formed in England in the mid-nineteenth century.

rogues' gallery A compilation of descriptions, methods of operation, hiding places, and the names of associates of known criminals in the 1850s.

History of Criminal Investigation

1253	1829	1840s	1850
Old Charleys	London Metropolitan Police	Study of fingerprint patterns	Pinkerton National Detective Agency
18th–19th centuries	1837	1842	
Thief catchers	Boston Police Department established	Bertillon System	Source: Courtesy of Pinkerton's Archives
1750s	1839	1844	1924
Bow Street Runners	Scotland Yard	New York Police Department	Creation of the FBI

Investigation in 1907, the FBI originally had very few responsibilities. When new federal laws governing interstate transportation of stolen automobiles were passed, however, the bureau gained much notoriety. John Edgar Hoover, the bureau's newly named director, announced in 1924 that he would strive to eliminate corruption and get the agency out of politics. In doing so, he raised the qualifications of agent personnel, reduced the number of agents nationwide, and closed some field offices. Today, the FBI is one of many federal investigative agencies that has made great strides in professionalizing the field of criminal investigation.

► The Increase of Research and Science in Crime Detection

The seeds of modern forensic science were sown in the last quarter of the nineteenth century. Progress from that time has been slow but steady. The American Academy of Forensic Sciences (AAFS), a professional organization of forensic scientists in America, was established in 1948. Specific areas of expertise of AAFS members include pathology and biology, toxicology, criminalistics, questioned documents, and forensic odontology and anthropology.

In addition to the development of fingerprinting as an aid to criminal detection, several other forensic advances were either being developed or had already been placed into service by the late nineteenth century. Historic strides in criminal investigation included study in serology, forensic dentistry, and ballistics. For example, research into human blood was vastly expanded during the early twentieth century by Paul Uhlenhuth, a German physician. Uhlenhuth's work created serums that enabled one to distinguish one species of animal blood from another. Consequently, **serology** was a procedure that was established to study human blood stains and distinguish them from the blood of most other animals.

DISCUSS *If you are interested in any of the career fields discussed in this chapter, is your interest more in field investigative processes as a criminal investigator or those that take place in a laboratory as a criminalist? To what extent have you given thought to the fields of biology and chemistry to further a career in forensic science?*

Forensic pathology is a branch of pathology concerned with determining the cause of death by examination of a corpse. The pathologist, at the request of a coroner or medical examiner, performs the autopsy usually during the investigation of criminal cases and civil suite cases in some jurisdictions. Forensic pathologists are also frequently asked to confirm the identity of a corpse.

The *forensic pathologist* is a medical doctor who has completed training in anatomical pathology and who has subsequently subspecialized in forensic pathology. Forensic pathologists perform autopsies/postmortem examinations to determine the cause of death. The autopsy report contains an opinion about the following:

- The pathologic process, injury, or disease that directly resulted in or initiated a series of events that lead to a person's death (also called mechanism of death), such as a bullet wound to the head, exsanguinations due to a stab wound, manual or ligature strangulation, myocardial infarction due to coronary artery disease, and so on
- The “manner of death”—the circumstances surrounding the cause of death—which in most jurisdictions include the following:
 - Homicide
 - Accidental
 - Natural
 - Suicide
 - Undetermined

The autopsy is also an opportunity for other issues raised by the death to be addressed, such as the collection of trace evidence or determining the identity of the deceased. Pathologists also,

- Examine and document wounds and injuries, both at autopsy and occasionally in a clinical setting.

LEARNING OUTCOMES 2

Identify how research affects criminal investigation.

GLOSSARY

serology The scientific analysis of blood.

A CLOSER LOOK

Modern Fields of Forensic Science

The area of forensic science has grown considerably over the last 150 years and more so since the mid-1980s. Here are examples of fields of forensic science that may be of interest to future criminal investigators:

- Forensic accounting is the study and interpretation of accounting evidence.
- Forensic anthropology is the application of physical anthropology in a legal setting, usually for the recovery and identification of skeletonized human remains.
- Forensic archaeology is the application of a combination of archaeological techniques and forensic science, typically in law enforcement.
- Forensic astronomy uses methods from astronomy to determine past celestial constellations for forensic purposes.
- Forensic botany is the study of plant life in order to gain information regarding possible crimes.
- Forensic chemistry is the study of detection and identification of illicit drugs, accelerants used in arson cases, and explosive and gunshot residue (GSR).
- Computational forensics concerns the development of algorithms and software to assist forensic examination.
- Criminalistics is the application of various sciences to answer questions relating to examination and comparison of biological evidence, trace evidence, impression evidence (such as fingerprints, footwear impressions and tire tracks), controlled substances, ballistics, firearm and toolmark examination, and other evidence in criminal investigations. In typical circumstances, evidence is processed in a crime laboratory.
- Forensic dactyloscopy is the study of fingerprints.
- Digital forensics is the application of proven scientific methods and techniques in order to recover data from electronic/digital media. Digital forensic specialists work in the field as well as in the lab.
- Forensic document examination or questioned document examination answers questions about a disputed document using a variety of scientific processes and methods. Many examinations involve a comparison of the questioned document, or components of the document, to a set of known standards. The most common type of examination involves handwriting wherein the examiner tries to address concerns about potential authorship.
- Forensic DNA analysis takes advantage of the uniqueness of an individual's DNA to answer forensic questions such as paternity/maternity testing or placing a suspect at a crime scene (for example, in a rape investigation).
- Forensic engineering is the scientific examination and analysis of structures and products relating to their failure or cause of damage.
- Forensic entomology deals with the examination of insects in, on, and around human remains to assist in the determination of time or location of death. It is also possible to determine if the body was moved after death.
- Forensic geology deals with trace evidence in the form of soils, minerals, and petroleum.
- Forensic limnology is the analysis of evidence collected from crime scenes in or around fresh water sources. Examination of biological organisms, in particular, diatoms can be useful in connecting suspects with victims.
- Forensic linguistics deals with issues in the legal system that require linguistic expertise.
- Forensic meteorology is a site-specific analysis of past weather conditions for a point of loss.
- Forensic odontology is the study of the uniqueness of dentition better known as the study of teeth.
- Forensic optometry is the study of glasses and other eye wear relating to crime scenes and criminal investigations.
- Forensic pathology is a field in which the principles of medicine and pathology are applied to determine a cause of death or injury in the context of a legal inquiry.
- Forensic psychology is the study of the mind of an individual, using forensic methods. Usually it determines the circumstances behind a criminal's behavior.
- Forensic seismology is the study of techniques to distinguish the seismic signals generated by underground nuclear explosions from those generated by earthquakes.
- Forensic serology is the study of the body fluids.
- Forensic toxicology is the study of the effect of drugs and poisons on/in the human body.
- Forensic video analysis is the scientific examination, comparison, and evaluation of video in legal matters.
- Mobile device forensics is the scientific examination and evaluation of evidences found on a mobile phone (for example, call history, deleted SMS, and SIM card forensics).
- Trace evidence analysis is the analysis and comparison of trace evidence including glass, paint, fibers, hair, and so on.
- Forensic podiatry is an application of the study of a foot, footprint, or footwear and their traces to analyze the scene of a crime and to establish personal identity in forensic examinations.

Think About It...

Pathology as a Forensic Career While not a law enforcement officer, the forensic pathologist is one of criminal investigation's most valuable assets. Could you perform the duties of a pathologist? Why? Why not?



Source: Darren Baker/Shutterstock.com

- Collect and examine tissue specimens under the microscope in order to identify the presence or absence of natural disease and other microscopic findings, such as asbestos bodies in the lungs or gunpowder particles around a gunshot wound.
- Collect and interpret toxicological analyses on bodily tissues and fluids to determine the chemical cause of accidental overdoses or deliberate poisonings.
- Serve as expert witnesses in civil or criminal cases.

► Criminal Investigation Research

As with other aspects of criminal justice, research plays an important role in helping us to understand how criminal investigations can be more effective. Early studies by both the RAND Corporation and the Police Executive Research Forum challenged long-held opinions about criminal investigation and made some practical recommendations.

The RAND Corporation Study

In the late 1970s, the National Institute of Law Enforcement and Criminal Justice awarded a grant to the RAND Corporation to undertake a nationwide study of criminal investigations by police agencies in major U.S. cities. The goals of the study were to determine how police investigations were organized and managed, as well as to assess various activities as they relate to the effectiveness of overall police functioning. Until this study, police investigators had not been placed under as much scrutiny as those in patrol functions or other areas of policing.

Design of the Study

The focus of the RAND study was the investigation of “index” offenses: serious crimes such as murder, robbery, and rape. Other less serious crimes, such as drug violations, gambling, and prostitution, were not considered in the study. A national

survey was conducted that assessed investigative practices of all municipal and county police agencies employing more than 150 sworn personnel or serving a jurisdiction with a population over 100,000. Observations and interviews were conducted in more than 25 departments, which were chosen to represent various investigative methods.

The *Uniform Crime Reports* (UCRs), administered by the FBI, were used to determine the outcome of investigations. Data on the allocation of investigative endeavors were obtained from a computerized network operated by the Kansas City Police Department. In addition, information from the National Crime Victimization Survey and the UCRs were linked to identify the effectiveness of arrest and the overall relationships between departments. Finally, the study analyzed case samples to determine how specific cases were solved.

Recommendations of the Study

1. Postarrest activities should be coordinated more closely with the prosecutor's office. This could be accomplished by assigning an investigator to the prosecutor's office or by permitting prosecutors discretionary guidance over the practices of investigators, thus increasing the number of prosecutable cases.
2. Patrol officers should be afforded greater responsibilities in conducting preliminary investigations, which will provide greater case-screening capabilities for investigators while eliminating redundancy. The study suggests that many cases can be closed at the preliminary investigation stage. Therefore, patrol officers should be trained to perform such duties.
3. Forensic resources should be increased for processing latent prints and developing a system to organize and search fingerprint files more effectively.
4. With regard to investigations of cases that the agency chose to pursue, a distinction should be made between cases that require routine clerical skills and those that require special investigative abilities. Investigations falling into the second category should be handled through a specialized investigation section.

In addition to the RAND Corporation's study, several others have offered support for its findings. Block and Weidman's study of the New York Police Department and Greenberg et al.'s decision-making model for felony investigations both support the idea that patrol officers make the majority of arrests during preliminary investigations and can provide excellent case-screening benefits for investigations.¹

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The PERF Study

In one important study, the Police Executive Research Forum (PERF) considered the roles played by detectives and patrol officers in the course of burglary and robbery investigations. The study examined three areas: DeKalb County, Georgia; St. Petersburg, Florida; and Wichita, Kansas. Of the major findings of the study, several observations were made.² For example, PERF concluded that detectives and patrol officers contributed equally to the resolution of burglary and robbery cases. However, it was determined that in most cases, a period of four hours (stretched over several days) was sufficient to close cases and that 75 percent of burglary and robbery cases were suspended in less than two days due to a lack of leads. In the remainder of cases, detectives played a major role in follow-up work conducted to identify and arrest suspects. It was determined, however, that both detectives and patrol personnel are too reliant on victim information for identification purposes, as opposed to checking leads from sources such as informants, witnesses, and other information sources in the police department.

Results of the PERF study suggest the following:

1. There is not as much waste or mismanagement in investigations as earlier thought as a result of similar studies. The value of follow-up investigations by detectives in identifying and arresting suspects is also thought to be much greater than indicated by earlier studies.
2. Greater emphasis should be placed on the collection and use of physical evidence when applicable. Although physical evidence is seldom used in identifying suspects, it can be effective in corroborating other evidence of suspect identification, indicating that although not all police departments use extensive training of evidence technicians, many have established policies regulating situations in which they should be used.
3. Police departments should develop policies and guidelines regulating the use of evidence technicians in routine cases such as burglary and robbery when there has been no physical injury to victims. This policy should be based on the assumption that if the suspects can be found through other means of identification, physical evidence is not likely to be useful.
4. Officers should dedicate greater effort to locating witnesses through the use of a neighborhood canvass. This was not found to be common practice by patrol officers in the cities studied because initial information was commonly learned via interviews with witnesses and victims. It was suggested that to expand the scope of their investigations, patrol officers seek additional witnesses and victims through a neighborhood canvass.
5. Patrol officers should make more extensive use of department records and informants to develop and identify suspects. Although checking department records would be a relatively easy task, the skills needed to develop and interview informants are not common among patrol officers. Supervisors in the patrol area could make a greater effort to provide such training to street officers to help them develop informants.

► The Objectives of Criminal Investigation

Because of the changing nature of criminal activity and the role of the investigator, the objectives of the criminal investigation may be more complex than people imagine. The objectives of criminal investigations are to

- Detect crime
- Locate and identify suspects in crimes
- Locate, document, and preserve evidence in crimes
- Arrest suspects in crimes
- Recover stolen property
- Prepare sound criminal cases for prosecution

LEARNING
OUTCOMES
3

Discuss the objectives of criminal investigation.

The premise behind the criminal investigation field is that people make mistakes while committing crimes. For example, a burglar may leave behind broken glass or clothing fibers, or a rapist may leave fingerprints, skin tissue, semen, or blood. As a result of these oversights, evidence of who they are is also left behind. It is the job of the criminal investigator to know how, when, and where to look for such evidence. In doing so, he or she must be able to draw on various resources:

- Witnesses and informants, for firsthand information about the crime
- Technological advances in evidence collection and preservation
- Their own training and experience in investigative techniques

In summary, almost all crimes require some degree of investigation. The extent to which any particular violation is investigated depends largely on resources available to the department and how the department prioritizes it.

Inductive and Deductive Reasoning

After an initial evaluation of evidence in a case, the criminal investigator draws conclusions through a process of reasoning. This process is typically achieved through inductive or deductive reasoning. The distinctions are as follows:

Challenging Inductive and Deductive Reasoning

In 2002, Jon J. Nordby questioned the processes of inductive and deductive reasoning in his book *Dead Reckoning: The Art of Forensic Detection*. Nordby suggested that it's not enough to just collect and analyze evidence; investigators also need a guiding theory that's flexible enough to accommodate new information and sufficiently logical to show a clear pattern of cause and effect.³

For example, Nordby states that a homicide investigation could show that the killer did not need to break in to a residence because he or she had a key. This theory would significantly narrow the possibilities. It is important for investigators to not only have a theory that guides the investigation, but also important is that any theory that is contradicted be discarded. In other words, it is important for investigators to understand how logic and science work together.

Inductive Reasoning

Sometimes called inductive logic, inductive reasoning is reasoning that takes us beyond what we know (our current evidence or information) to conclusions about what we don't know. Induction is used, for example, in using "specific" propositions. There are two types of inductive reasoning, strong and weak inductive reasoning.

Strong Induction

"All observed crows are black; therefore, all crows are black."

This exemplifies the nature of induction: inducing the universal from the particular. However, the conclusion is not certain. Unless one can systematically falsify the possibility of crows being another color, the conclusion that all crows are all black may actually be false.

Weak Induction

"I always hang pictures on nails; therefore, all pictures hang from nails."

Assuming the first statement to be true, this example is built on the certainty that "I always hang pictures on nails" leading to the generalization that "All pictures hang from nails." However, the link between the premise and the inductive conclusion is weak. In other words, there is no reason to believe that just because one person hangs pictures on nails that there are no other ways for pictures to be hung or that other people cannot do other things with pictures.

Conclusions drawn in this manner are usually overgeneralizations that are in need of further investigation.

Deductive Reasoning

Deductive reasoning is based on specific pieces of evidence to establish proof that a suspect is guilty of an offense—for example, identifying muddy footprints outside a window where a burglary has occurred. An issue would be whether the footprints belonged to an occupant of the house, to the burglar, or to someone else.

Deductive reasoning is often contrasted with inductive reasoning. For example, by thinking about phenomena such as how apples fall and how the planets move, Isaac Newton induced his theory of gravity. In the nineteenth century, Adams and LeVerrier applied Newton's theory (general principle) to deduce the existence, mass, position, and orbit of Neptune (specific conclusions) from perturbations in the observed orbit of Uranus (specific data).

COMPARISON TABLE OF CRITICAL THINKING AND SCIENTIFIC METHODOLOGY

In addition to the use of deductive and inductive logic in interpreting evidence, the criminal investigator must incorporate skills of critical thinking with known scientific methods in their investigations. Let's look at how these two approaches to criminal investigation compare.

Scientific Methodology

In contrast with critical thinking, the scientific method refers to techniques for investigating phenomena, acquiring new knowledge, or correcting and integrating previous knowledge. To be termed scientific, a method of inquiry must be based on gathering empirical and measurable evidence.¹

A scientific method consists of the collection of data through observation and experimentation and the formulation and testing of hypotheses. Each element of a scientific method is subject to peer review for possible mistakes.

The processes of critical thinking and scientific method need not be mutually exclusive. Rather, reasonable and informed investigators consider both as tools in their investigative arsenal, allowing for critical thinking in determining the direction of the investigation and scientific methods in evaluating the value of and usefulness of evidence.

Critical thinking

Critical thinking is the use of rational skills, worldviews, and values to get as close as possible to the truth. It is judgment about what to believe or what to do in response to observations or experiences. Critical thinking can also involve determining the meaning and significance of what is observed to determine whether there is adequate justification to accept whether a conclusion is true.

In contemporary usage, "critical" has the connotation of expressing disapproval, which is not always true of critical thinking. A critical evaluation of an argument, for example, might conclude that it is good.

Whereas thinking is often *casual* or routine, critical thinking deliberately evaluates the *quality* of thinking. In an early study on critical thinking in 1941, Edward Glaser wrote that the ability to think critically involves the following three things²:

1. An attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one's experiences
2. Knowledge of the methods of logical inquiry and reasoning
3. Some skill in applying those methods

Critical thinking calls for a persistent effort to examine any belief or supposed form of knowledge in the light of the evidence that supports it and the further conclusions to which it tends. It also generally requires ability to recognize problems and to find workable means for meeting those problems. Critical thinking may occur whenever one judges, decides, or solves a problem—essentially, critical thinking may be used whenever one must figure out what to believe or what to do and do so in a reasonable and reflective way.

Critical thinking is important because it enables one to analyze, evaluate, explain, and restructure one's thinking, thereby decreasing the risk of adopting, acting on, or thinking with a false belief.

¹ Newton. (1999). Rules for the study of natural philosophy. From the General Scholium, which follows Book 3, *The system of the world* 794–796.

² Glaser, E. M. (1941). *An experiment in the development of critical thinking*. Teacher's College, Columbia University.

Abduction is the process, therefore, of proposing a likely explanation for an event that must then be tested. For example, the killer had a key to the victim's home. Nordby suggests,

Induction is the wrong way of looking at science... because the classic problem of induction is the contrary instance [something that contradicts the claim].

Let us consider the notion that once a crime scene investigator observes a hair or piece of fiber, he or she now has their evidence. The reality is that many if not most crime scenes exist in dirty, debris-filled rooms. Such places are abundant with hair and fibers. So what is the investigator actually looking for? Which of all of those hairs and fibers is actually evidence? Unless the criminal investigator has an idea or theory that will make one object relevant and another irrelevant, the evidence-collection process will be overwhelming. In order to have purpose in what is being done, the investigator must have something in mind. That comes from abduction.

LEARNING OUTCOMES 4

Distinguish the difference between inductive and deductive reasoning.

GLOSSARY

abduction The process of proposing a likely explanation for an event that must then be tested.

Developing an explanation that can be tested moves the investigation forward and guides the accumulation of knowledge, giving way only when contradicted. Abduction helps to make links among events, and the development of the overall theory of a crime depends on adding new links. Nordby suggests that abduction keeps guessing to a minimum.

Critical Thinking and Scientific Methodology

In addition to the use of deductive and inductive logic in interpreting evidence, the criminal investigator must incorporate skills of critical thinking with known scientific methods in their investigations. Let's look at how these two approaches to criminal investigation compare.

The processes of critical thinking and the scientific method need not be mutually exclusive. Rather, reasonable and informed investigators consider both as tools in their investigative arsenal, allowing for critical thinking in determining the direction of the investigation and scientific methods in evaluating the value of and usefulness of evidence.

The Emergence of the Police Specialist

Within law enforcement agencies in the United States, a division typically exists between officers whose responsibility it is to maintain order and those who investigate crimes. In larger departments, specialized squads typically perform the investigative function in law enforcement agencies. In fact, many such departments have several detective divisions within, each dealing with different categories of crime, such as crimes against persons (for example, rape, assault, and robbery), crimes against property (for example, burglary, larceny, and auto theft), and

vice crimes (for example, drug violations, gambling, and prostitution). Smaller rural departments often lack the financial resources to specialize, so patrol officers often conduct criminal investigations in addition to their patrol duties.

In some types of crime, such as homicide, investigators must develop leads through interviews with friends, family, and associates of the victim as well as witnesses to the crime. In other cases, investigative leads are developed by sifting through files and prior police records and establishing the suspect's mode of operation (MO). In all cases, the investigative process uses traditional and historical methods of detection through the use of official records, photographs, fingerprints, and so on, as opposed to daily face-to-face contacts with the citizenry, such as with the patrol division. The investigative specialist is generally an older person who has had considerable experience in police work. Most detectives are former patrol personnel who have worked up through the ranks due to the common practice of promoting from within.

Types of Investigations

The mission of law enforcement is complex and demanding but contains some fundamental components, including the maintenance of peace in our communities and the protection of lives and property. When people choose to violate laws that provide for these essentials, the perpetrators must be identified and brought before a court. It is the task of identifying such offenders that is the quintessence of criminal investigation. Criminal investigators confront investigations in several areas in the regular course of their duties:

- Personal background, to determine a person's suitability for appointment to sensitive public trust positions
- Suspected violations of criminal law
- Infractions of civil law
- Vice (drug and organized crime activity)

Within law enforcement agencies in the United States, a division typically exists between officers whose responsibility it is to maintain order and those who investigate crimes.

LEARNING OUTCOMES

5

Explain the expanding role of the patrol officer as criminal investigator.

GLOSSARY

reactive response An approach to crime solving that addresses crimes that have already occurred, such as murder, robbery, and burglary.

proactive response An investigative approach to crime solving in which criminal activity is investigated before it occurs.

preventive response Prevention through deterrence that is sometimes achieved by arresting the criminal and by aggressive prosecution.

► Crime-Scene Investigators

The popular television show *CSI: Crime Scene Investigation* has brought the role of the crime-scene investigator to the public, creating considerable interest in forensic science. Of course, crime-scene investigators require very specific training with regard to crime-scene protection and the identification and preservation of evidence, and not every law enforcement agency is able to support a dedicated CSI unit. A description of the crime-scene unit (CSU) is provided by Michael Weisberg (2001):⁴

The CSU provides support services in the form of crime processing, fingerprint identification, and forensic photography. The CSU responds to major crime scenes to detect, preserve, document, impound and collect physical evidence. The unit assists in the identification of unknown subjects, witnesses and victims involved in criminal investigations. . . . The CSU will work closely in conjunction with the Detective Bureau in providing assistance in follow-up investigations, as well as subject apprehension and arrest. Members of the CSU may be either sworn or non-sworn.

► Modes of Investigation

Criminal investigations are conducted through the use of three different responses: reactive, proactive, and preventive.

The **reactive response** addresses crimes that have already occurred, such as murder, robbery, and burglary. In this case, investigators typically respond to a crime, collect evidence, locate and interview witnesses, and identify and arrest a suspected perpetrator. Investigations are also conducted as a **proactive response** to anticipated criminal activity, as with many vice and organized crime investigations. Proactive investigations differ from reactive investigations in two major regards: (1) The investigation is conducted before the crime is committed (rather than after) and (2) the suspect is identified before he or she commits the crime. Finally, investigations are sometimes conducted as a **preventive response**. Prevention through deterrence is sometimes achieved by arresting the criminal and by aggressive prosecution.

► The Role of the Criminal Investigator

As indicated earlier, many myths exist regarding the role of criminal investigators. Perhaps these were best summarized by Herman Goldstein, who wrote⁵

Part of the mystique of detective operations is the impression that a detective has difficult-to-come-by qualifications and skills; that investigating crime is a real science; that a detective does much more important work than other police officers; that all detective work is exciting; and that a good detective can solve any crime. It borders on heresy to point out that, in fact, much of what detectives do consists of very routine and very elementary chores, including much paper processing; that a good deal of their work is not only not exciting but downright boring; that the situations they confront are often less demanding and challenging than those handled by patrol

officers; that it is arguable whether special skills and knowledge are required for detective work; that a considerable amount of detective work is usually undertaken on a hit-or-miss basis; and that the capacity of detectives to solve crimes is greatly exaggerated.

Indeed, some studies have suggested that the role played by investigators is overrated and that their time could probably be spent more productively by focusing on crimes with the best likelihood of clearance.⁶ Other researchers suggest that the investigative process is a valid utility in crime detection but should be augmented by the use of proactive patrol programs.

Characteristics of the Investigator

What characteristics best define a professional criminal investigator? Certainly, standards vary from one law enforcement agency to the next, but certain commonalities can be identified. To recognize these qualities, many police agencies implement a supervisory performance appraisal system to evaluate suitability for appointment to investigator. Once taken, the police manager can choose from candidates who possess the most sought-after qualities. The qualities involved in investigative performance are listed in Figure 1.1.

Investigators are specialists. They undertake activities related primarily to law enforcement; patrol officers, on the other hand, routinely spend their time in order maintenance (for example, maintaining peace) and the provision of general services (for example, emergency aid, finding lost children, traffic control). Despite the diversity of tasks performed by patrol officers, investigators also assume many substantial duties. For example, detectives gather crime information, effect arrests, and prepare cases for prosecution and trial.

According to a study by the National Institute of Justice (NIJ), investigative traits most commonly desired include:



⁵ National Institute of Justice (1987). *Investigators who perform well*. Washington, DC: U.S. Department of Justice, September.

Qualities Involved in Investigative Performance

Gathering Information	Intelligence	Prosecutions
Crime scene management	Perseverance	Quantity
Communication skills	Initiative	Presentation of testimony
Field Operations	Judgment	Percent of convictions
Stakeouts	Teamwork	Personnel Performance
Patrol	Involvement	Absenteeism
Crime pattern analysis	Dedication	Complaints
Developing informants	Arrests	Awards
Street knowledge	Quantity	Dedication
Personal Traits	Quality	Qualifications
Motivation	Public-Victim Satisfaction	Education
Stability	Crime reduction	Training
Persistence	Diminution of fear	Previous assignments in department

FIGURE 1.1 Qualities Involved in Investigative Performance.

The Patrol Officer as an Investigator

Traditionally, the responsibility of patrol officers in criminal investigations has been limited. Patrol officers have been required only to collect and record the most basic information by asking simple questions of the victims and witnesses and recording their answers on a report form. While in the past, patrol officers have studied crime scenes for physical evidence, usually the time spent on any one incident has been minimal. As a rule, reports have been reviewed by a supervisor and then sent to the detective division or an investigative unit for follow up. In many cases, this process has resulted in the duplication of efforts by investigators.

Over the past decade, many police departments have expanded the role of the patrol officer to responsibilities that are traditionally assigned to investigators. These new responsibilities include the following:

- The patrol officer provides immediate assistance to victims, locates witnesses, interviews both victims and witnesses, and records information about the crime scene. Depending on the seriousness of the crime or the presence of physical evidence, the patrol officer may call for a more specialized search by evidence technicians. To a great extent, this procedure initiates the case.
- The patrol officer has the authority to initiate and complete investigation of certain classifications of crime, such as all misdemeanors, cases that involve property value up to \$1,500, and auto larceny cases. Investigations of more serious crimes continue to be referred to as specialized investigative units. The practical effect of this “sorting out” of responsibilities for different types of investigations is that patrol officers

Over the past decade, many police departments have expanded the role of the patrol officer to responsibilities that are traditionally assigned to investigators.

investigate high-volume crimes that can be investigated as effectively by patrol as by criminal investigators. Conversely, investigations that require more time, specialized skill, and effort are handled by trained criminal investigators.

- In rare cases, the police officer may be given responsibility for the entire investigative process. In these situations, the patrol officer carries out all investigative functions. Investigators, if there are any, perform as consultants to the patrol officers.

For the most part, police administrators agree that these changes in the patrol officers’ role have produced a number of benefits, including the following:

- The cases are handled completely and expeditiously.
- Relationships and communications between patrol officers and investigators have improved.
- The frequency of morale problems among patrol officers has decreased, and the decrease is attributable to the officers’ belief that their skills are being better used in the investigative process.
- An increase in investigator productivity has resulted from a light caseload, which produced more time to focus investigative resources on specific high-profile cases.
- There is better management of the entire investigative effort by the police administrator.

Solvability Factors

A police department’s reporting system and the investigative role of the patrol officer are inextricably bound. The redefining of the role of patrol officer is intended to ensure that evidence supporting the continual investigation or case closure is collected at the earliest possible point in the investigative process. This reporting system serves as the foundation for the criminal investigation.

The reporting system is defined by two basic components, which in combination form the basis for an initial investigation. The first is a format that logically guides the identification leads, or **solvability factors**, that experience and research have demonstrated are most likely to result in case solution. The second provides an opportunity for details of the investigation

A police department's reporting system and the investigative role of the patrol officer are inextricably bound.

thus far expended so the follow-up plans do not unnecessarily duplicate tasks already completed.

A police department's reporting system should indicate not only that solvability factors are present but it should also identify the investigative effort expended in searching for leads. For example, if witnesses have been sought in a number of locations, the report should indicate where the search was conducted, who was contacted, and what was found. Without this description, the follow-up investigator will not have a clear idea of where the patrol officer has located the existing solvability factors and will end up duplicating his or her efforts.

Unless the patrol officer is able to make an immediate, on-scene arrest, 12 essential questions need direct answers. These solvability factors are logically based on existing police practices. All agencies may have different capabilities and procedures that result in slightly different solvability factors.

From an investigative standpoint, these 12 structured questions serve to define what the patrol officer should accomplish. Patrol officers directing their activities to areas that were the

most promising for a successful case solution not only broadened their roles but also established effective limitations as to where patrol officers should terminate their investigation. Furthermore, utilization of the solvability factors emphasizes the importance of a thorough initial investigation even when it is being turned over for a continuing investigation. The patrol officer has provided the direction of the investigation, up to this point.

In summary, the expanded role of patrol officers in recent years has meant increased efficiency and effectiveness in policing in general and in criminal investigation specifically. It has also helped to enlighten those who serve the community in the capacity as patrol officers and to make them more aware of their important role as first responders to crime scenes and as the police department's eyes and ears on the street. In their role as first responders to crime scenes, patrol officers have many specific duties. These duties are encompassed in a process known as the preliminary investigation.

LEARNING OUTCOMES 6

Discuss the solvability factors in a criminal investigation.

GLOSSARY

solvability factors Factors that logically guide the investigation and are likely to result in case solution.

Primary Solvability Factors

1. Immediate availability of witnesses
2. Name(s) of the suspect
3. Information about the suspect's location
4. Information about the suspect's description
5. Information about the suspect's identification
6. Information about the suspect's vehicle and vehicle movement
7. Information about traceable property
8. Information about significant MO
9. Information about significant physical evidence
10. Discovery of useful physical evidence
11. Judgment by the patrol officer that there is sufficient information available to conclude that anyone other than the suspect could not have committed the crime
12. Judgment by the patrol officer on case disposition. If the officer believes there is enough information available and with a reasonable investment of investigative effort that the probability of the case solution is high, then the investigation should be continued.

► The Preliminary Investigation

Although the primary purpose of a patrol force is to prevent crime, patrol officers have assumed many other responsibilities, including the investigation of crimes (discussed earlier). In modern police departments, the patrol force participates fully in the preliminary investigation of crimes.

The preliminary investigation is the responsibility of the first officer at the crime scene. His or her actions at the scene can greatly influence the ultimate success or failure of the investigation. In other words, a job well done during a preliminary investigation should provide the information or evidence needed to build a solid case. Conversely, errors made during the preliminary investigation, especially those that involve a failure to properly safeguard or identify physical evidence, cannot be rectified at a later time.

From the time the officer receives information to proceed to a crime scene, his or her preliminary investigation objectives are the following:

- Determine what has happened.
- Locate witnesses and sources of evidence that aid in determining what has occurred.

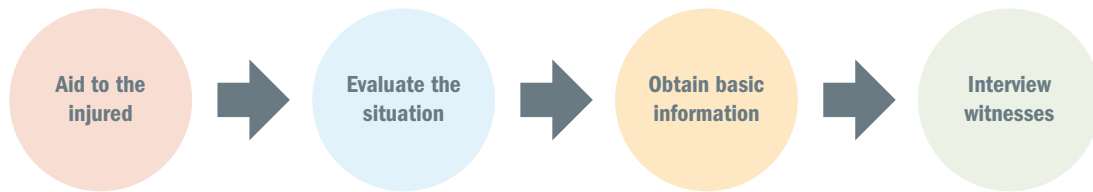
Think About It...

Signature Murders One of the first things investigators consider in evaluating a homicide case is whether the method of operation or, "MO" was used in other crimes. In some extreme cases, not only is the same MO used, but also a "signature" of sorts is left at the scene that specifically identifies that scene with a particular killer. A signature crime is a crime that exhibits characteristics idiosyncratic to specific criminals, known as signature aspects, behaviors, or characteristics. Can you think of any "signature" crimes you have heard about? On one hand, the discovery of a signature crime provides the investigator with investigative leads, but can investigators wrongfully target a suspect just because a crime has similar aspects?



Source: Courtesy of Mark C. Ide

The Crime Scene Response



- Locate and preserve physical evidence.
- Determine what further investigative steps should be taken.
- Obtain and evaluate the accuracy of witnesses' statements.
- Determine whether to act on the statements and evidence found at the scene.
- Record what has been done, what has been learned, and what is left to be done.
- Complete the investigation and make an apprehension if appropriate.

One of the primary objectives of the preliminary investigation is to establish whether the necessary elements of a crime exist. All information obtainable at the scene of a crime should be gathered and reported at the time of the initial police response. The follow-up investigation by specialists is a second step—provided this second step won't unnecessarily postpone the successful completion of the investigation.

The preliminary investigation should begin when an officer is assigned to proceed to a crime scene and only terminate when he or she has completed the task to the point at which a delay in further action does not substantially affect successful outcome of the investigation. For the most part, the nature of the crime and the relationship between a time of occurrence and the time of arresting the perpetrator determine whether or not the offense is investigated to conclusion by the patrol officer. When a suspect is arrested at or near the scene of a crime or during or shortly after the crime, the limits of a preliminary investigation need to be extended. If an extensive search of the crime scene for physical evidence is necessary, the preliminary and follow-up investigations overlap into a single operation. An example of this is homicide investigations.

Typically, patrol officers proceed to crime scenes with bits and pieces of information that must first be verified and then expanded to be of investigative use. However, as far as crime-scene response only is concerned, the patrol officer usually has two facts that shape

his or her preliminary plans: the type of crime and the location of the crime. These facts usually indicate the urgency of a call and thus the degree to which a patrol officer can conduct the preliminary investigation.

LEARNING OUTCOMES 7

Describe the preliminary investigation process.

One of the primary objectives of the preliminary investigation is to establish whether the necessary elements of a crime exist.

The Crime-Scene Response

While approaching the crime scene, the responding officer must remain observant for potential suspects fleeing the area. The officer should note descriptions of people and vehicles leaving the crime area. A critical decision needs to be made by the responding officer when he or she observes a suspect. The officer must decide whether to stop his or her approach to the crime scene and investigate a suspicious person who may be fleeing or to proceed directly to the crime scene. The decision to stop must be based on the likelihood that the suspicious person is the offender fleeing the crime scene.

If it is necessary to stop a suspicious person, the officer should notify the dispatcher immediately so that other units are aware of the situation. The dispatcher should assign a backup unit to assist the officer and then send another officer to the crime scene.

Aid to the Injured

The first duties of police officers at the scene of the crime are to administer first aid and obtain medical assistance for injured parties when required. All considerations are secondary to the well-being of injured parties. Even the capture of suspects and the integrity of valuable clues or evidence may need to be sacrificed to aid a victim. Obviously, if other apparently qualified persons are at the crime scene to provide first aid, an officer can then pursue fleeing suspects.

While rendering aid, officers should disturb the scene as little as possible. They should not unnecessarily move furniture, use facilities, or litter the area. For example, first aid supplies should be collected after use. Ambulance personnel should be directed how to enter and work within the crime scene so as not to needlessly disturb it.

Evaluate the Situation

After caring for any injured people, the officer should make an evaluation of the crime scene before proceeding with the preliminary investigation. Evaluation of the scene at this time often prevents false moves and mistakes. By observing the overall crime scene, a police officer can gain a reasonably accurate mental image of how the crime occurred and where it was committed. Of course, if additional assistance is needed at the crime scene, the officer should request it immediately.

After arriving at the scene, the officer must exercise extreme caution. He or she should concentrate on identifying potential evidence and avoid disturbing the likely locations of fingerprints and other evidence. For example, the swinging double doors common to many commercial establishments should be pushed open at a point lower than normally touched by a person. After the doors are identified as possible sources of fingerprints, they can be protected from contamination by locking them or tying them open.

The officer should observe and record the details of the scene. This is done by beginning to take notes as soon as possible. The longer the officer waits, the greater the danger becomes of omitting small but often important facts. The type of small details include whether a door was closed or locked, the lights were all on or off, or the blinds were open or closed.

Obtain Basic Information

For the most part, the preliminary sources of immediate information at a crime scene are victims and witnesses. From them, the officer can obtain the essential facts of the case. Although a lengthy inquiry cannot be conducted when the officer first arrives, he or she should establish the following points:

- The identities of victims, witnesses, and others present at the scene when the officer arrived
- A brief account from each witness or victim of what occurred, including descriptions of any suspects

After basic information has been obtained, the officer should broadcast a lookout alert or BOLO (“be on the lookout”). Alerting other field units about the nature of the offense and the details about the suspect, mode and direction of travel, description of the vehicle, proceeds of the crime, and type of weapon used may lead to an immediate arrest of a fleeing suspect.

Interview Witnesses

The first officer at the scene must detain witnesses. The officer should quickly remove all persons from the crime scene and should not allow them to return until all of the necessary crime-scene work is completed. The witnesses should be separated so they cannot discuss the case with each other. Such discussions among witnesses about the crime can adversely influence the witnesses’ memories and statements.

The officer must obtain adequate information to identify and locate witnesses. Some witnesses may volunteer and offer to provide information to the officer. However, witnesses are not always easy to find. Many persons are reluctant to accept the role of witness, and they avoid becoming involved with the investigation in any manner.

One technique for identifying witnesses is watching the crowd for persons who are describing what they observed. Also, the officer should ask each witness to point out anyone else who was present at the time of the crime. In major crimes, the license numbers of vehicles parked near the crime scene and in the immediate neighborhood should be documented.

The officer should determine which witnesses have the most helpful information and obtain full details from them. Other witnesses who have not observed a significant part of the crime should be permitted to give a brief statement.

When possible, witnesses and others should be interviewed in the following order:

1. Victim
2. Eyewitnesses
3. Persons observing the suspect entering or leaving the crime scene
4. Persons having knowledge or events leading up to the crime
5. Persons in the neighborhood

When a crime is committed within a residential building, the number of possible witnesses may be few. On the other hand, when a crime is committed in a store or on the street, a large number of persons may typically have witnessed the offense. The officer may need to visit adjoining places of business, apartments, or homes to determine if other persons might have knowledge of the crime.

The officer’s inquiries must go beyond simply taking statements. He or she cannot accept without question anything stated by a witness. The officer must be observant and quick to recognize discrepancies or unusual behavior on the part of witnesses. Furthermore, the officer must examine the interrelationships between the accounts of witnesses and other evidence in the case. This involves more than establishing that the witness has personal knowledge of the circumstances of the crime; it also involves an examination of the statements of witnesses in relation to their physical ability, geographic layout of the crime scene, weather, and degree of visibility. Other factors include reasons for the witness being present at the scene.

In conclusion, criminal investigation is a dynamic and challenging police endeavor. Its roots are deeply embedded in our English heritage and the slow evolution of techniques and research has resulted in our current system of investigative crime detection. Methods of approaching the crime scene are numerous but include time-honored techniques such as inductive and deductive reasoning coupled with critical thinking skills and scientific methodology.

Not everyone is well suited to be a criminal investigator as research has shown that the preferable candidate should possess certain personality traits. Once the right individual is ready for the job, he or she must work closely with patrol first responders to properly access the crime scene, and identify, collect, and properly preserve evidence.

THE CASE

Anatomy of a Home Invasion

In the late afternoon of July 22, 2007, Jennifer Hawke-Petit and her daughter Michaela went to a local grocery store in Cheshire, Connecticut. They had been targeted by Steven Hayes and his accomplice Joshua Komisarjevsky, who followed them home, and planned to later rob the family by home invasion. Anticipating their deeds, Hayes and Komisarjevsky exchanged text messages that were later introduced in court. According to Hayes's confession, the two men planned to rob the house and flee the scene with the family bound and unharmed, but that there was a change in their plan. They beat the husband William Petit with a bat Komisarjevsky had found in the yard, then tied him up in the basement at gunpoint. The children and their mother were each bound and locked in their respective rooms. Hayes convinced Jennifer to withdraw \$15,000 from her line of credit. A video surveillance at a gas station shows Hayes purchasing \$10 worth of gasoline in two cans he had taken from the Petit home.

Hayes and Komisarjevsky escalated their crime when Komisarjevsky sexually assaulted the 11-year-old daughter, Michaela, and photographed his assault on his cell phone. He then provoked Hayes to rape Jennifer. Hayes strangled Jennifer, and doused her body and parts of the house including the daughters' rooms with gasoline. A fire was then ignited, and Hayes and Komisarjevsky fled the scene leaving them to die from smoke inhalation. The invasion lasted seven hours and Hayes and Komisarjevsky were found guilty of their role in the home invasion and murders. Though this was a horrific crime, we learn from this case that many crimes of violence leave a considerable amount of evidence behind.

Criminal investigators must learn to look beyond the horror of the crime and evaluate what occurred from a scientific and analytical point of view:

1. Using the chapter material and the information about this home invasion, what do you think about the role of the investigators and the solvability of this crime?
2. Please explain what you have learned in this chapter about the history of criminal investigation that might be relevant to this case.

Sources: Neighbors, schools mourn Petit family - Family's charitable work honored. *Channel 3 Eyewitness News*. Retrieved July 24, 2007, from www.thebostonchannel.com/r/13744337/detail.html; Goodall, J. and Hawks, C. (2005). *Crime scene documentation*. LawTech Custom Publishing.

LEARNING
OUTCOMES

1

Explain the history of criminal investigation.

Our current system of criminal investigation is a product of our English heritage and occurrences and events taking place here in the United

States. Not only is it significant that our English ancestors paved the way for our current system of criminal investigation but the many scientific advances have slowly but surely led us to a system whereby the identification of perpetrators is more accurate, thus providing justice for the victims and their families and decreasing the chance that an innocent person might go to prison.

1. Why were criminal investigations and apprehension difficult in the American frontier?
2. Where was the first professional police force established in the United States?
3. Why is the creation of the FBI considered one of the most significant developments in the history of law enforcement in America?
4. What is the role of a forensic pathologist in criminal investigations?

thief catchers People recruited from the riffraff of the streets to aid law enforcement officials in locating criminals during the European Industrial Revolution.

Old Charleys The first police worked only at night and were originally called the Watch of London. They were paid by the residents they served.

Bow Street Runners A group of English crime fighters formed by Henry Fielding during the eighteenth century.

bobbies The name of London Metropolitan Police Department officers; they were named this after the department's founder, Home Secretary Sir Robert Peel.

Bertillon system An early criminal identification or classification system based on the idea that certain aspects of the human body, such as skeletal size, ear shape, and eye color remained the same after a person had reached full physical maturity. This system used a combination of photographs with standardized physical measurements.

Scotland Yard One of the first criminal investigative bodies originally formed in England in the mid-nineteenth century.

rogues' gallery A compilation of descriptions, methods of operation, hiding places, and the names of associates of known criminals in the 1850s.

LEARNING
OUTCOMES

2

Identify how research affects criminal investigation.

In many law enforcement organizations, the crime-scene technician is the person trained to respond to the scene of a crime and identify, collect, and preserve evidence. The investigation is then taken over by the criminal investigator, who responds in a reactive or preventive manner. Investigations can also be of a proactive nature.

1. As it relates to criminal investigations, what were the most significant recommendations following the RAND study?

2. As it relates to criminal investigations, what were the most significant recommendations following the PERF study?
3. In terms of findings/recommendations, what is the primary similarity among the three studies noted in the chapter?

serology The scientific analysis of blood.

LEARNING
OUTCOMES

3

Discuss the objectives of criminal investigation.

Because of the changing nature of criminal activity and the role of the investigator, the objectives of the criminal investigation may be more complex than people imagine. These include detecting crime, locating and identifying suspects, and documenting and preserving evidence. The premise behind the criminal investigation field is that people make mistakes while committing crimes. For example, a burglar may leave behind broken glass or clothing fibers, or a rapist may leave fingerprints, skin tissue, semen, or blood. As a result of these oversights, evidence of who they are is also left behind.

1. What are the primary objectives of the criminal investigation?
2. What is the basic premise of the criminal investigation?
3. What are the three primary resources used by a criminal investigator?
4. What are some mistakes criminals often make when committing crimes?

LEARNING
OUTCOMES

4

Distinguish the difference between inductive and deductive reasoning.

After an initial evaluation of evidence in a case, the criminal investigator draws conclusions through a process of reasoning. This process is typically achieved through inductive or deductive reasoning. Inductive reasoning is sometimes called inductive logic; it is reasoning that takes us beyond what we know (our current evidence or information) to conclusions about what we don't know. Deductive reasoning is reasoning based on specific pieces of evidence to establish proof that a suspect is guilty of an offense.

1. Why is critical thinking an important skill for criminal investigators?
2. How can critical thinking and the scientific method be used simultaneously in problem solving?
3. In criminal investigations, what is the danger in using inductive reasoning over deductive reasoning?
4. How does the concept of abduction and theory apply to criminal investigations?

abduction The process of proposing a likely explanation for an event that must then be tested.

LEARNING
OUTCOMES

5

Explain the expanding role of the patrol officer as criminal investigator.

The traditionally limited responsibility of the patrol officer has expanded to include locating witnesses, conducting interviews, recording information about the crime scene, and initiating and completing investigations. Most police administrators agree that these changes have been beneficial to the department.

1. What are the fundamental components of law enforcement?
2. What are the three modes of investigation?
3. What is the difference between reactive and proactive responses?

4. How has the role of the patrol officer changed over the years, and what benefits to law enforcement in general and in criminal investigations specifically has this change produced?
5. What qualities do professional investigators have in common?

reactive response An approach to crime solving that addresses crimes that have already occurred, such as murder, robbery, and burglary.

proactive response An investigative approach to crime solving in which criminal activity is investigated before it occurs.

preventive response Prevention through deterrence that is sometimes achieved by arresting the criminal and by aggressive prosecution.

LEARNING
OUTCOMES

6

Discuss the solvability factors in a criminal investigation.

Solvability factors are identification leads that have proven to be valuable and are most likely to result in case solution. Examples include availability of witnesses, information about the suspect, significant physical evidence, and judgment by the patrol officer that there is enough information to continue an investigation.

1. What are three primary solvability factors in criminal investigations?
2. How does the patrol officer guide the direction of an investigation?
3. A police department's reporting system is defined by what two basic components?

solvability factors Factors that logically guide the investigation and are likely to result in case solution.

LEARNING
OUTCOMES

7

Describe the preliminary investigation process.

For many criminal investigations, the investigative process begins with the preliminary investigation. It is during this phase that patrol officers typically arrive at the scene before the investigator and conduct some extremely important duties. These duties include securing the scene, arresting any perpetrators, providing first aid to the injured, and identifying and separating witnesses. Typically, the officer conducting the preliminary investigation will take some notes and turn over all information to the criminal investigator upon their arrival.

1. What are the objectives of the preliminary investigation?
2. Why are preliminary investigations important in the investigative process?
3. What are the steps in the crime-scene response?
4. Who are the most important witnesses to be interviewed by a first responder?

Go to the Chapter 1 section in *MyCrimeKit* to review the objectives, read a chapter summary, practice key terms with flashcards, view related media, and assess your understanding with practice quizzes.

Additional Links

Scotland Yard/Metropolitan Police: <http://content.met.police.uk/Home>

This is the official website of the Metropolitan Police in London. This site contains links to history of Scotland Yard and history of policing. Other links include archives, famous cases, news links, crimes, recruitment, and how to report a crime.

FBI: www.fbi.gov

This is the official website of the Federal Bureau of Investigation. This site contains links to history of the FBI including famous cases. In addition, visitors will find Uniform Crime Report statistics, reports and publications, videos, photos, news, most wanted lists, crime alerts, jobs and internship programs, as well as fun and games links for teens and children.

American Academy of Forensic Sciences: www.aafs.org

The group's site contains links and information on membership, news and current events, archives, resources for students including choosing a career, and colleges and universities that have forensic science programs.

National Institute of Justice: www.nij.gov

This is the research, development, and evaluation agency of the Department of Justice. This organization's site includes links for publications, training, and courses for criminal justice professionals. The site includes multimedia presentations, also.
