

# B

## Investigative Psychology

### CHAPTER OBJECTIVES

- Explore the many ways psychology contributes to investigations of crime.
- Examine the history, methods, limitations, and problems of criminal profiling.
- Evaluate the strengths and weaknesses of predicting human behavior.
- Describe the psychological autopsy.
- Introduce geographical profiling and mental mapping.
- Review the history, research, and application of the polygraph.
- Assess the usefulness of forensic hypnosis.
- Investigate the psychology of pretrial identification methods, such as lineups, photospreads, and face recognition procedures.

**I**nvestigative psychology, the application of psychological research and principles to the investigation of criminal behavior, is a term coined by David Canter, the director of the Centre for Investigative Psychology at the University of Liverpool in England. Investigative psychology probably began in 1985, when Canter was called to Scotland Yard to explore the possibilities of integrating existing investigation procedures and techniques with psychological principles (Canter, 1995). Eventually, he developed a graduate program in investigative psychology at the University of Surrey and, 10 years later, moved to the University of Liverpool to direct a graduate program in investigative psychology there.

From a psychological perspective, three fundamental questions characterize all criminal investigations (Canter & Alison, 2000, p. 3): (1) What are the important behavioral features of the crime that may help identify and successfully prosecute the perpetrator? (2) What inferences can be made about the characteristics of the offender that may help identify him or her? (3) Are there any other crimes that are likely to have been committed by the same person? These questions are central to the entire process of investigative psychology. In this chapter, we broaden the field of investigative psychology slightly to include topics of psychological autopsies, suicide-by-cop, the polygraph, and forensic hypnosis. We will begin by exploring an activity that has prompted considerable media attention, psychological profiling.

## Profiling: The Psychological Sketch

Profiling—one of the tasks often associated with investigative psychology—requires sketching the significant psychological and demographic features of a person or persons. In some instances, the profile summarizes the psychological features of persons who *may* commit a crime, such as identifying potential terrorists who plan to hijack or blow up a plane. In the United States, for example, the nation's major airlines have used a profiling system known as the Computer Assisted Passenger Prescreening System (CAPPS) (Armstrong & Pereira, 2001). CAPPS, a more limited version of the passenger prescreening systems used in Europe and Israel, was created after the midair explosion of TWA Flight 800 over Long Island Sound in 1996, which resulted in the deaths of 230 people. At first, it was thought that the explosion was the result of a terrorist attack, but further investigation several months later revealed the cause to be frayed electrical wiring in or near the fuel tanks located in the midsection of the aircraft.

CAPPS uses basic data disclosed by passengers when they reserve and buy tickets—such as their names, addresses, and how they paid for tickets—to look for patterns that identify potential terrorists. For example, passengers who purchase one-way tickets, pay in cash, travel alone, buy tickets for passengers with different last names on the same credit card, and buy tickets with the same credit card shortly after another transaction are targeted for further investigation or closer surveillance (Armstrong & Pereira, 2001). The federal government uses similar profiles in its search for drug couriers and potential terrorists. The Drug Enforcement Administration (DEA) and the Department of Homeland Security, for example, have developed lists of likely characteristics of offenders.

Do these profiling techniques actually work? CAPPS did flag two of the four hijackers aboard American Airlines Flight 77 (which crashed into the Pentagon) as suspicious when they checked in at Dulles Airport on the morning of September 11, 2001. Unfortunately, neither man was questioned or searched at the airport, although their bags were carefully scanned before being loaded onto the plane. After the attacks on September 11, passengers as well as baggage were searched, a practice that continues today, as all air travelers are well aware.

In reference to the drug courier profiles, critics have argued that although they discover evidence of drug trafficking, they are also so broad in their description that they can apply to a great number of passengers and result in the temporary detention and questioning of numerous innocent individuals.

After the terrorist attacks of September 11 and with the heightened threat of more terrorism, psychologists and behavioral scientists were asked to further develop profiles that would help security personnel identify potential terrorists from passenger lists. These profiles usually take into consideration the clothes the passenger is wearing, the person's nationality, travel history, behavioral patterns while at the airport, and even the book that he or she may have just purchased at the airport bookshop. That is, to improve their ability to identify potential terrorists, profile researchers would examine the buying habits, dress patterns, and cultural and social backgrounds of previous airline terrorists. Furthermore, since September 11, both the airlines and the federal government have likely implemented additional approaches to profiling and screening passengers, most of which are not revealed to the public.

Profiling of potential hijackers is not new. To digress briefly, the word *hijack* originated in the Midwest around 1912 to 1920 and is a shortened form of the command, "Hold your hands up high, Jack" (Dailey & Pickrel, 1975b). Apparently, it was first used by bands of individuals who habitually robbed farmers and eventually came to mean the use of force or trickery to compel individuals to do things they do not want to do. In 1961, *Time* magazine coined the term *skyjacking* to refer to the seizure of aircraft.

After the first official hijacking of an American aircraft occurred in 1961, a trickle of skyjackings continued until the epidemic years between 1968 and 1978. In 1968, there were 36 skyjackings, 20 of them involving American aircraft, with most diverted to Cuba (Arey, 1972). This "contagion effect" became even more apparent in 1969 with 71 skyjackings, 58 of which were diverted to Cuba from the United States and other parts of the world. Some skyjackers were homesick Cubans, some claimed to be political activists, but most apparently wanted to become significant and newsworthy.

Sixty-nine skyjackings occurred in 1970, and similar instances continued until the United States began to beef up and improve its airport security. One of the skyjacking incidents that attracted extensive media attention was the case of D. B. Cooper, who demanded and received money and a parachute and then jumped from the aircraft. The Cooper story became well-known with much speculation generated about whether he lived or died from his jump. Books, posters, T-shirts, rock songs, and a movie—*The Pursuit of D. B. Cooper*, starring Robert Duvall and Treat Williams—document the considerable ongoing interest in the heist. Even a restaurant in Salt Lake City was named after him. His daring feat also illustrates a good example of the **contagion or copycat effect**. Cooper himself may have been reacting to the early rash of skyjackings mentioned above. However, his demand for money and a parachute prompted others to do the same.

Of the 19 foiled hijacking attempts in 1972, a total of 15 demanded both money and parachutes. During the same year, three hijackers demonstrated that it was possible to survive a jump from a 727 by parachuting out the back (all were later captured or shot). The Federal Aviation Administration (FAA) soon required all 727s to be fitted with a device that automatically locks the rear door while in flight. The idea of demanding a ransom and parachutes did not originate with Cooper, however. A hijacker with a gun tried to take over an Air Canada plane just 12 days prior to the Cooper hijacking. The hijacker demanded money and parachutes but was subdued by the flight crew when he tried to put on the parachute. Cooper, though, decided to use

a bomb in a briefcase instead of a gun, a plot that he may have copied from the 1970 movie *Airport*.

Not long after the Cooper skyjacking, in August 1972, the FAA issued a directive that all U.S. carriers had to either search or deny boarding to those who fit a certain profile (Daily & Pickrel, 1975a). The profile had been developed by FAA psychologists in response to the rash of skyjackings in the late 1960s and early 1970s.

They had concluded that, in general, skyjackers were different from the usual air traveler of that time in such aspects as socioeconomic class and mannerisms in the airport terminal (Daily & Pickrel, 1975a). The “typical” skyjacker was generally an “unsuccessful” member of society, was inadequate socially and occupationally, was lacking in resourcefulness, appeared to have substantial feelings of helplessness or hopelessness, and perhaps was suicidal. Apparently, the skyjacking was a way of improving his or her situation and gaining some control and significance in the world. However, although the skyjacker profile was helpful at first, it eventually proved inadequate and incomplete because cultural, social, political, and security forces are always in a state of flux. Consequently, the most useful profiles must be continually evaluated and updated with new information.

The preboarding procedure mandated by the FAA seemed to work. During the years 1973 and 1974, only four American aircraft were involved in skyjackings, none of which turned out to be successful in terms of getting the skyjacker flown to the desired destination (Civil Aeronautics Board, 1975).

Over the years, interest in profiling has waxed and waned, and it is often fueled by sensational media events. After a series of school shootings in the 1990s, considerable attention was directed at developing profiles of the type of high school student who would be likely to open fire on classmates or school officials. When the Washington, D.C., area was terrorized by sniper shootings in the fall of 2002, sniper profiles were the rage. However, despite the enormous media interest—including depictions of profilers in the entertainment media—profiling is not as frequent an investigative activity of police officials or psychologists as we might assume. Many police psychologists question the technique. In a nationwide survey of police psychologists, for example, 70% said they did not feel comfortable profiling and seriously questioned its validity and usefulness (Bartol, 1996). Nevertheless, in recent years there has been an upward trend in the use of profiling, with some indications that profiling has become more commonplace within police investigations (Homant & Kennedy, 1998; Snook, Eastwood, Gendreau, Goggin, & Cullen, 2007). In the sections to follow, we will cover profiling in three forms: criminal profiling, psychological autopsies, and geographical profiling.

### **Criminal Profiling**

**Criminal profiling** is the process of identifying personality traits, behavioral tendencies, geographical location, and demographic or biographical descriptors of an offender (or offenders) based on characteristics of the crime (Bartol & Bartol, 2004). The primary goal of criminal profiling is to narrow the field of possible suspects to a more reasonable number from the hundreds or thousands of possible suspects within a specific population. Profiling is also a form of prediction. Based on crime scene information and the behavioral patterns or habits of the offender, the profiler tries to

“predict” who the offender or offenders might be and where and how the next crime may occur. To a very large extent, the profiling process is dictated by the quality of the data collected on previous offenders who have committed similar offenses. It should be emphasized at the outset that profiling—even in its most sophisticated form—rarely can point directly to *the* person who committed the crime. Moreover, profilers do not claim to do this. Instead, the process helps develop a manageable set of hypotheses for identifying who *may* have been responsible for the crime. If done competently, a profile will provide some statistical probabilities of the demographic, geographic, and psychological features of the offender. More important, it should eliminate large segments of the population from further investigation.

The term *profiling* is used in several ways to identify different kinds of information. The term we use here—**criminal profiling**—refers to identifying and describing essential information about a suspect. Psychological profiling refers to a behavioral sketch of an individual who may or may not be a suspected offender. **Crime scene analysis**, or the more technical terms *criminal investigative analysis* and *crime scene investigation*, pertains to developing a rough behavioral or psychological sketch of an offender based on clues identified at the crime scene. According to R. A. Knight, Warren, Reboussin, and Soley (1998), “This technique attempts to derive hypotheses about the personality of the offender from analysis of a crime scene, victim information, and current knowledge of offenders from previous research” (p. 47).

*Racial profiling*, on the other hand, is defined as

police-initiated action that relies on the race, ethnicity, or national origin rather than the behavior of an individual or information that leads the police to a particular individual who has been identified as being, or having been, engaged in criminal activity. (Ramirez, McDevitt, & Farrell, 2000, p. 53)

Racial profiling has become so well-known to ethnic minorities or people of color during traffic stops that they have come to label the phenomenon “driving while black” or “driving while brown” (abbreviated as DWB) as a play on the legally accepted term *DWI* (driving while intoxicated). Racial profiling is based on the assumption by some law enforcement officials that ethnic or racial minorities are most often used as couriers of illegal drugs or other contraband. This unwarranted assumption has led to a disproportionate number of “pretext” stops of members of minority groups. A pretext stop is one in which a driver is pulled over for a mild traffic infraction, such as crossing the center line or driving a vehicle with a defective taillight. The stop allows the officer to conduct a visual search of the vehicle and, under some conditions, order drivers and even passengers out of the car.

Psychological profiling was used by the U.S. Office of Strategic Services (OSS) during World War II in an effort to identify the tendencies and thought processes of Adolf Hitler (Ault & Reese, 1980). It is very likely, though, that earlier efforts to understand the thinking of kings and military leaders predated the OSS by several hundred years. David Canter—whom we credited with coining the term *investigative psychology*—and his colleague Laurence Alison point out that psychological profiling is basically an offshoot of psychological testing (Canter & Alison, 2000).

Criminal profiling has gained popularity in law enforcement circles since it was first used by the Federal Bureau of Investigation in 1971 (Pinizzotto & Finkel, 1990). In more recent years, criminal profiling has intrigued the public through such films as *Silence of the Lambs* and TV series such as *CSI: Crime Scene Investigation*, *CSI: Miami*, *CSI: New York*, *Crossing Jordan*, and *Autopsy* in the United States and *Cracker* in the United Kingdom. Despite the media attention and popular TV and movie depictions of highly successful and probing profilers employing sophisticated techniques to identify the offender, reality is far from that picture. If the number of actual success stories in profiling is compared to the total number of misses or failures, the ratio of hits to misses might be close to chance. Furthermore, it should be emphasized early in this section that there are very few full-time employment opportunities for professional criminal profilers, even highly experienced ones. Although criminal profiling is a fascinating area, students aspiring to become forensic psychologists should keep their career options open to the many other forensic areas that are growing and emerging each year and not narrow their interests to such limited topics as criminal profiling.

However, it is also very important to understand the many aspects of profiling, as it is such a pervasive and ultimately important topic in the field of forensic psychology. When the media contact psychologists for comment on a sensational crime, psychologists are typically asked about the “profile.” Moreover, in contrast to the *applied* aspects of criminal profiling, the one area that drastically needs attention from forensic psychologists is profiling *research*. In other words, it is critical that we learn how reliable or valid the various profiling procedures and methods currently used are and how (or if) they can be improved to allow meaningful application to law enforcement and other forensic realms. Consequently, in this section, we will spend some time going over the key concepts in the field, the current state of the “art,” and the available research.

Contrary to popular belief, criminal profiling is not and should not be restricted to serial murders or serial sexual assaults. It has considerable *potential* value when applied successfully to crimes such as arson, burglary, shoplifting, and robbery and to white-collar crimes such as bank fraud or embezzlement. However, because of the limited research base available, its effectiveness in these areas has yet to be demonstrated.

More recently, computer-based models of offender profiles based on extensive statistical data collected on similar offenses have been introduced. With the necessary empirical research, they may hold considerable promise in advancing the accuracy of criminal profiles. But, so far, there are very little research data on the utility, reliability, and validity of computer-based profiling. This point leads us to the general topic of predictions of human behavior.

### Dynamic and Static Risk Factors in Prediction

An important issue in the prediction and profiling of human behavior is the distinction between **dynamic risk factors** and **static risk factors** (Andrews & Bonta, 1998; Andrews, Bonta, & Hoge, 1990). Dynamic risk factors are those that change over time and situation. For example, our attitudes, values, and beliefs have considerable potential for change, in contrast to static risk factors, such as our gender, birth order, ethnic background, and biological parents. In short, dynamic factors can change, whereas static factors cannot.

### IN FOCUS 3.1 The FBI Academy Behavioral Science Unit

The FBI Behavioral Science Unit is one of the instructional components of the FBI's Training Division at Quantico, Virginia. Its mission is to develop and provide programs of training, research, and consultation in the behavioral and social sciences for the FBI and law enforcement community that will improve or enhance their administration, operational effectiveness, and understanding of crime. This work includes conducting high-impact research and presenting a variety of cutting-edge courses on topics such as applied criminal psychology, clinical forensic psychology, crime analysis, death investigation, interpersonal violence, research methodology, stress management in law enforcement, and violence in America.

The Behavioral Science Unit conducts specialized and applied training in the above disciplines as they pertain to law enforcement for new agents, FBI services and symposia, the FBI National Academy Program, international police officers, field police schools, and criminal justice-related organizations and conferences.

The Behavioral Science Unit also coordinates with and supports other FBI units, such as the National Center for the Analysis of Violent Crime (NCAVC) and the Critical Incident Response Group (CIRG), which provides operational assistance to the FBI field offices and law enforcement agencies. The Behavioral Science Unit does not presently recruit from outside the FBI.

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Source: Behavioral Science Unit, FBI Academy. Available: [www.fbi.gov](http://www.fbi.gov).

Dynamic factors can be subdivided into stable and acute (Hanson & Harris, 2000). **Stable dynamic factors**, although they are changeable, usually change slowly and may take months or even years to change. **Acute dynamic factors**, on the other hand, change rapidly (in days, hours, or even minutes) and include such things as mood swings, emotional arousal, and alcohol or other drug-induced effects. Hanson and Harris (2000) found that acute dynamic factors, such as anger and subjective distress, were better predictors of the tendency of sex offenders to reoffend than were the more stable dynamic factors, such as the sex offender's attitudes about women.

This is important to profiling because serial offenders, whether serial rapists, burglars, arsonists, killers, or pedophiles, often change their **modus operandi (MO)** as they become more proficient at their crime—or, as noted by Turvey (2002), it may change due to an offender's deteriorating mental state or the increased use of drugs or alcohol.

The MO—the actions and procedures an offender uses to commit a crime successfully—can be considered a stable dynamic factor. It is a behavioral pattern that the offender learns as he or she gains experience in committing the offense. Burglars are continually changing their procedures and techniques to better accomplish their goals, and serial killers often become more daring and risky in their selection of victims. Because the offender generally changes the MO until he or she learns which method is most effective, investigators may make a serious error if they place too much significance on the MO when linking crimes. Turvey (2002) also points out that some offenders improve their MO through educational and technical materials.

“Professional journals, college courses, textbooks, and other educationally oriented media available at a public library, or now via the Internet, can provide offenders with knowledge that is useful toward refining their particular MO” (Turvey, 2002, p. 232). Turvey further illustrates his point by asserting that “arsonists may read *Kirk’s Fire Investigation* (DeHaan, 1997); rapists may read *Practical Aspects of Rape Investigation* (Burgess & Hazelwood, 1995); murderers may read *Practical Homicide Investigation* (Geberth, 1996); and bank robbers may subscribe to security magazines” (p. 232). In addition, many offenders read newspaper, magazine, and television accounts of their crimes, which sometimes provide clues that the police have identified concerning the MO. Such accounts may prompt the offender to alter his or her methods of operations. In some instances, the offender may perfect the MO by engaging in a career or profession that enhances the methods used, such as joining a volunteer fire department or even becoming a fire investigator.

A similar but distinct feature is the **signature**. The signature is thought to be related to the unique cognitive processes of the offender and, because it is relatively consistent in its characteristics, may be more useful in the profiling process. In other words, the signature probably has greater stability than the MO, although both are stable, dynamic factors.

The signature is a symbolic communication by the offender that goes beyond what is necessary to commit the crime. For example, some burglars tailor their styles (or their signature) to convey messages to victims and investigators, hoping to induce some strong emotional reactions from the victims, such as fear or anger. The burglar may leave a frightening or threatening note or “violate” some personal item, such as intimate clothing, a photograph, or a diary. Consequently, the emotional reactions of burglarized victims often run the gamut from anger and depression to fear and anxiety (Brown & Harris, 1989).

Related to the signature is the issue of psychopathology. Experienced profilers have argued for many years that profiling serial violent offenders is most successful when the offender exhibits some form of psychopathology at the scene of the crime, such as sadistic torture, evisceration, postmortem slashings and cuttings, and other mutilations (Pinizzotto, 1984). This is based on the theory that when a person is mentally disordered, he or she demonstrates greater consistency in behavior from situation to situation. However, whether persons with mental disorders are more consistent in their behavioral patterns than stable individuals remains very much open to debate, and systematic empirical research on the topic is lacking.

### Additional Crime Scene Concepts

During the 1980s, the FBI’s **Behavioral Science Unit (BSU)** (see In Focus Box 3.1) interviewed incarcerated sexual murderers in an effort to identify some common behavioral characteristics and motives of serial killers (Ressler, Burgess, & Douglas, 1988; Ressler, Burgess, Hartman, Douglas, & McCormick, 1986). In the late 1980s, further study focused on the behavioral and motivational features of serial rapists (Hazelwood & Burgess, 1987, 1995). This resulted in the development of a typology that classifies crime scenes as organized, disorganized, or mixed. An **organized crime**



scene suggests planning and premeditation on the part of the offender. The crime reveals signs that the offender maintained control of himself or herself and the victim(s) and took considerable cautions to elude apprehension. In addition, it is also apparent that the victim or victims were selected rather than being randomly attacked. A **disorganized crime scene**, on the other hand, suggests that the offender committed the crime without premeditation or planning. Essentially, the crime scene looks chaotic, indicating the offender acted on impulse, rage, or some other intense emotional state. High emotions tend to “disorganize” a person’s thought processes and behavior. Think of what happens when a person becomes uncontrollably angry. Often, the disorganized offender obtains his or her victim or victims by chance. The victim is simply at the wrong place at the wrong time. The **mixed crime scene** has both organized and disorganized aspects. For example, a crime may have begun as a carefully planned one but quickly deteriorated into a disorganized crime when things failed to go as originally planned and unanticipated strong emotions set in.

This manner of looking at a crime scene is rarely as neat as portrayed here, however, and some recent research (Kocsis, Cooksey, & Irwin, 2002) suggests that the organized-disorganized classification scheme may have very limited usefulness. It is probably more realistic to assume that crime scenes exist somewhere along a continuum, with the organized label at one pole and the disorganized label at the other. Otherwise, we would be trying to fit crime scene analysis into an unrealistic classification system or **typology**. In contemporary psychology, the term *typology* refers to a particular system for classifying personality or other behavioral patterns. Usually, the typology is used to classify a wide assortment of behaviors into a more manageable set of brief descriptions. However, placing individuals into behavioral categories is based on the fundamental assumption that behavior is consistent across time and place. Crime scene typologies are constructed on the premise that human behavior (e.g., of the offender) is largely the same from situation to situation. The concept of typologies will be discussed again in Chapters 8 and 9 when criminal violence and sexual assaults are covered.

Another concept sometimes encountered in crime scene analysis is **undoing**. Undoing is a behavioral pattern found at the scene in which the offender tried to psychologically “undo” the crime. For example, a distraught or emotionally upset offender, who kills the victim, may try to undo his or her actions by placing the body in bed, gently placing the head on a pillow, and neatly covering the body with blankets. Or he or she may place the victim upright in a chair, trying desperately to return the victim to a natural-looking state.

Trophy taking is another behavioral pattern sometimes encountered in crime scene analysis. Although it is more common in violent crime, it may also occur in burglary. A crime scene **trophy** is a meaningful souvenir taken by the offender to remember the incident, to psychologically control the victim, or both. It could be anything, from a piece of clothing to a photograph, a piece of jewelry, or—in the case of a murdered victim—a body part. Trophy taking also may be part of a signature of the offender. One of the more infamous trophy takers was the serial killer Jeffrey Dahmer, who collected body parts in glass jars filled with formaldehyde as well as photographs depicting victims at various stages of their deaths.

**Staging** is another behavioral pattern sometimes found at a suspected suicide, accidental death, or crime scene. Staging is the intentional alteration of a suicide or crime scene prior to the arrival of the police. It is usually done for one of two reasons: either to redirect the investigation away from the most logical suspect or to protect the victim or the victim's family (Douglas & Munn, 1992). Staging is frequently done by someone who has a close association or relationship with the victim. For example, the victim may have become an accidental death victim by practicing **autoerotic asphyxia**. Autoerotic asphyxia refers to obtaining sexual excitement from hypoxia (lack of oxygen), usually through near strangulation, such as a near hanging. Holmes and Holmes (2002) estimate that as many as 1,000 accidental deaths each year may be attributed to autoerotic asphyxia. Douglas and Munn report that in nearly one-third of all autoerotic fatalities, the victim is nude, and in about another third, the victim has cross-dressed (e.g., male in female clothing). Most victims are young, white, middle-class, unmarried males (Holmes & Holmes, 2002). Distressed family members who discover the victim in a "compromised" condition may feel compelled to alter the situation (dressing the victim and hiding paraphernalia), perhaps to make it appear as either a homicide or a suicide. This topic leads us into the next form of profiling, the psychological autopsy.

## The Psychological Autopsy

The attempt to reconstruct the personality profile and cognitive features (especially intentions) of *deceased* individuals gained some popularity in the late 20th century. This postmortem psychological analysis is called **reconstructive psychological evaluation** (RPE); **equivocal death analysis** (EDA) (Poythress, Otto, Darnes, & Starr, 1993); or, more commonly, **psychological autopsy** (Brent, 1989; Ebert, 1987; Selkin, 1987), the term used here. EDA, or the equivocal death psychological autopsy (EDPA), is usually reserved for those investigations conducted by law enforcement officials, especially the FBI, who primarily examine the crime scene material and other information directly available to the police (Canter, 1999; Poythress et al., 1993). However, psychological autopsies may also be important in determining insurance payments and national security issues (Ebert, 1987). Psychological autopsies differ from criminal profiling in two important ways: (1) the profile is constructed on a dead person, and (2) the identity of the person is already known.

The psychological autopsy was originally devised to assist certifying officials to clarify deaths that were initially ambiguous, uncertain, or equivocal as to the *manner* of death (Shneidman, 1994). The method was first used in 1958, when the Los Angeles medical examiner/coroner consulted the L.A. Suicide Prevention Center for assistance in determining the cause of an unusually high number of equivocal deaths (La Fon, 2002). The term *manner* has special significance in any death investigation. According to La Fon, "the manner of death refers to specific circumstances by which a death results" (p. 158). La Fon identifies five generally accepted manners of death: natural, accident, suicide, homicide, and undetermined.

Today, the psychological autopsy is primarily undertaken in an effort to make a reasonable determination of what may have been in the mind of the deceased

person leading up to and at the time of death—particularly if the death appears to be a suicide (see In Focus Box 3.2). La Fon (2002) identifies two basic types of psychological autopsy: suicide psychological autopsy (SPA) and EDPA. The goal of the SPA is to identify and understand the psychosocial factors that contributed to the suicide. The goal of the EDPA, on the other hand, is to determine the reasons for the death. In most instances, the psychological autopsy (or the SPA) is done for insurance purposes. Although some insurance policies do compensate the family if the cause of death is determined to be suicide, many policies do not. Consequently, if the manner of death is equivocal, it is in the best financial interest of the insurance company to hire a forensic psychologist to do a complete psychological autopsy to determine whether the death was more likely the result of suicide or some other cause. The forensic psychologist would do this

by looking at lifestyle, behavioral history, as well as the characterological elements that contribute to that history: the degree of ambivalence, the clarity of cognitive functioning, the amount of organization or obsession, the state of turmoil or agitation, and the amount of psychic pain. (Shneidman, 1994, p. 76)

The following brief description of an incident illustrates the conditions that might call for a psychological autopsy:

The man believed to have drowned in the Greenwood Lake has been identified as a 55-year-old Smithfield resident. The man was last seen floating at Johnson's Cove, where the Attleboro Sailing Club anchors its boats, at about 4 p.m. Tuesday. The Smithfield police said the man had called for a dinghy; after retrieving oars, a man on shore looked away for a moment, and when he looked back, the man was gone. There was no indication that drugs or alcohol were a factor in the disappearance, and it is unknown what caused the man to go under.

Was this a suicide, foul play, or an accident?

A vast majority of the psychological assessments to uncover a person's thoughts and feelings prior to his or her death have been done in the United States, usually in civil or criminal litigation (Canter, 1999). The procedure consists largely of conducting interviews with family members and people who knew the decedent and examining personal documents (suicide notes, diaries, and letters) and other materials, such as the autopsy by the medical examiner, other medical reports, and police reports. Mental health professionals who develop psychological autopsies do their own interviews, conduct background investigations, and examine other pertinent information that they believe will contribute to a meaningful report (see In Focus Box 3.2).

According to La Fon (2002), the U.S. military is one of the major consumers of psychological autopsies. "Each branch of the Armed Forces, including the Navy, Army, and Air Force, have the task of conducting an EDPA for every equivocal death that occurs either on base property or to military personnel" (p. 160). Both civilian and military forensic psychologists conduct these autopsies. In most cases, the beneficiaries of the deceased military personnel receive remuneration regardless of the cause of death.

### **In Focus 3.2 How a Psychological Autopsy Is Performed**

The psychological autopsy is a process constructed to identify and evaluate the behavior, thoughts, moods, and events that led up to and may have contributed to a person's death. The investigation usually requires interviews with family members, relatives, friends, acquaintances, supervisors, teachers, mental health professionals, physicians, and coworkers. The investigator (usually a forensic psychologist or mental health professional) usually writes a comprehensive report detailing the relevant factors and significant events prior to the death. The report most often includes an opinion as to the mode of death. In gathering material for the report, the investigator researches the history of any known alcohol or substance abuse, mood or emotional changes, and potential psychological stressors.

Medical, psychological/psychiatric, educational, military, and employment histories are scrutinized. If available, the coroner's report, the police report, and laboratory results (e.g., toxicological profile) are also utilized. Pre-death behaviors are also noted, such as paying up insurance policies, giving away important possessions, and arrangements for pets and family. E-mails, written notes, and recent books read all are typically examined. The quality and nature of relationships are probably the most important in the assessment process, especially relationships with spouse, children, and other intimate persons in the individual's life. Also, a careful attempt at reconstructing the events that occurred on the day before the death adds a critical piece of information.

In the legal contexts, the psychological autopsy is frequently conducted to reconstruct the possible reasons for a suicide and ultimately to establish legal culpability on the part of other persons or organizations. For example, if a police officer shoots himself on the steps of the state capitol building, the message he was trying to send to all those concerned may be unclear. Family members of the deceased, convinced the department had poor stress-management techniques or nonexistent early-detection procedures for identifying emotional problems in their officers, may sue the department for emotional and financial damages. Under these conditions, a mental health professional may be retained to do a reconstruction of the victim's mental state during and before the incident. Psychological autopsies have also been part of civil proceedings in the private sector, where it was necessary to ascertain whether certain events on the job affected the persons—such as various kinds of harassment by fellow workers or supervisors—or whether certain job-related accidents prompted the eventual suicide. Failure of the company or organization to have adequate policies and procedures in place for handling problems of this sort may be sufficient reason to find the company liable.

Unfortunately, the reliability and validity of the psychological autopsy has yet to be demonstrated and awaits further research. Poythress et al. (1993) warn that

persons who conduct reconstructive psychological evaluations should not assert categorical conclusions about the precise mental state or actions suspected of the actor at the time of his or her demise. The conclusions and inferences drawn in psychological reconstructions are, at best, informed speculations or theoretical formulations and should be labeled as such. (p. 12)

Ault, Hazelwood, and Reboussin (1994) posit that a psychological autopsy is an investigative technique that is ultimately “a professional opinion based on years of law enforcement experience with indirect assessment and violent death” (p. 73). Selkin (1994) argues that clear, definitive procedures for carrying out psychological autopsies have yet to be developed, and investigators have a long way to go before standardized methods for conducting the psychological autopsy are established.

Poythress et al. (1993) make three recommendations for forensic psychologists to follow when doing psychological autopsies or equivocal death analyses. First, the use of these procedures and techniques should not be extended to nondeath situations (such as burglary or kidnapping), at least until the reliability and validity of the methods are clearly established. Second, in legal and quasi-legal contexts, psychologists who conduct reconstructive psychological evaluations should not make conclusions about the *precise* mental state or actions suspected of the actor at the time of his or her demise. Third, psychologists, mental health professionals, and social scientists should be careful not to mislead consumers about the accuracy of conclusions drawn from these psychological reconstructions, unless the research data support such conclusions. Currently, the research data are inconclusive about the accuracy of such methods, and clearly more well-executed research needs to be undertaken before firm conclusions about the validity of psychological autopsies can be made.

## Geographical Profiling and Geographical Mapping

One of the more interesting features of offending patterns is that they often occur or cluster within certain geographical areas, such as a specific area of a city. There are two major ways these crime patterns may be analyzed: **geographical profiling** and **geographical mapping**. Geographical profiling refers to the analysis of geographical locations associated with the spatial movements of a *single* serial offender, whereas geographical mapping is concerned with analyzing the spatial patterns of crimes committed by numerous offenders over a period of time. In a sense, geographical mapping focuses on identifying the “hot spots” of certain types of crime. The procedure has been used in Europe since the first half of the 19th century and began to be used in the United States during the early 1900s. Geographical profiling, on the other hand, is a recent development.

In 1995, D. Kim Rossmo wrote a doctoral dissertation at Simon Fraser University’s School of Criminology (Vancouver, British Columbia) on a method of geographical profiling that has become a promising tool for serial offender identification (Bartol & Bartol, 2004). Rossmo, who became the detective inspector in charge of the Vancouver Police Department’s Geographic Profiling Section, developed a computer program called Criminal Geographic Targeting (CGT). It is designed to analyze the geographical or spatial characteristics of an offender’s crimes. Basically, the program creates a topographical map that assigns different statistical probabilities to various areas that seem to fall into the offender’s “territory.” The primary goal of the technique is to pinpoint the location of the offender’s residence or base of operations. The CGT takes into account known movement patterns, possible comfort zones, and hypothesized “hunting patterns” for victims of a specific offender.

Rossmo (1997) classifies the “hunting patterns” of the offenders into four groups: (1) hunter, (2) poacher, (3) troller, and (4) trapper. Some serial offenders tend to commit their crimes within a certain region (are geographically stable), but some are more transient (move from place to place). According to Rossmo, “Hunters are those criminals who specifically set out from their residence to look for victims, searching through the areas in their awareness spaces that they believe contain suitable targets” (p. 167). The crimes of the hunter tend to be geographically stable and often occur near the offender’s place of residence or neighborhood. Poachers tend to be more transient, usually traveling some distance from their residence or neighborhood in search of their victims. The third group, the trollers, are not specifically searching for victims but rather randomly encounter them during the course of some other activity. The fourth group, the trappers, create situations to draw victims to themselves.

“Trapping” may be accomplished through entertaining suitors, placing want ads, taking in boarders, or assuming positions or occupations where potential victims come to them. Rossmo recommends that geographical profiling be combined with criminal profiling for maximum effectiveness in developing probabilities for offender identification. In addition, he admonishes that geographical profiling is essentially an investigative tool that does not necessarily solve crimes but should help in the surveillance or monitoring of specific locations.

The concept of hunting pattern was further developed by Bearegard, Proulx, Rossmo, LeClerc, and Allaire (2007) in a study of serial sex crimes, when these authors investigated the process as well as the patterns of seeking victims. Through analysis of police records as well as interviews with incarcerated offenders, Bearegard et al. found evidence of three scripts adopted by these offenders—the coercive, the manipulative, and the nonpersuasive. The scripts revealed such aspects as the preparation for the crime (e.g., development of sexual fantasies), preconditions (e.g., the absence of a guardian or a disorganized setting), and the exit from the setting (e.g., destruction of the evidence). Studies such as this not only contribute to understanding the motivations of offenders but also can suggest crime prevention strategies.

Having reviewed various forms of profiling, it is important that we turn our attention briefly to psychological concepts related to the prediction of human behavior. The ultimate goals of profiling are both identification and prediction. Psychologists have long been involved in the enterprise of behavioral prediction, with the assumption that if we can predict with reasonable accuracy, we can prevent and treat those behaviors that are most dangerous to society and to the individual. If we can predict that an individual will be violent, for example, we can take steps to prevent the violence, including offering treatment addressing the violent tendencies.

Unfortunately, as we saw in the earlier discussions of static and dynamic factors, predicting behavior is not easy or simple. In fact, with respect to violent behavior, psychologists today prefer the term *risk assessment*, whereby they provide probabilities that a person will display violent behavior at some point in the future. Psychological profiles, autopsies, and geographical profiling assume to a large extent that psychologists can predict (or postdict [after the fact]) human behavior.

## Why Is Profiling So Inaccurate?

Contemporary researchers on profiling (Alison, Bennell, Ormerod, & Mokros, 2002; Alison & Canter, 1999; Snook et al., 2007) identify two main flaws with the current state of criminal profiling. One is the assumption that human behavior is consistent across a variety of situations; the other is the assumption that offense style or crime scene evidence is related to specific psychological characteristics. The second point refers to the tendency of profilers to believe that specific clues gathered at the crime scene (such as signatures) reveal certain generalizable psychological characteristics and thought patterns of certain types of offenders.

Alison et al. (2002) further assert that

(a) most current profiling methods rely on a naïve and outdated understanding of personality and the trait approach; (b) global traits, or broad personality types, are unlikely to be useful in predicting criminal behavior; (c) it is unlikely that the classification of offenders into broad personality types would enable the profiler to relate clusters of sociodemographic characteristics to different types; (d) a theoretical framework that emphasizes the importance of Person  $\times$  Situation interactions in generating behavior may lead to a more productive research endeavor; (e) profiling should be used with extreme caution in criminal investigations, and not at all as evidence in court, until research demonstrates its predictive validity. (p. 116)

The above points underscore the observation that many professional profilers tend to rely on unsubstantiated assumptions about personality theory, the power of that personality or disposition to virtually override the influence of all situations, and the validity and accuracy of the profiling process itself. As Snook et al. (2007) assert, there is very little empirical evidence to support profiling's validity. Profilers often rely too heavily on "gut feelings," believing they have special knowledge to put the pieces of the puzzle together, and too little on science.

A common error is the failure to consider the power of the situation to influence behavior. Remember, part of the situation is the victim and all the characteristics brought to the incident by that individual or individuals. As noted by Jenkins (1993), "The failure to consider victim-oriented factors often leads researchers to misunderstand the nature of such activity" (p. 462). The lack of a victimology perspective generates confusion and often leads to further flaws in the development of offender profiles. Jenkins strongly asserts that an overlooked tool available to profilers is examining characteristics of the victim because "offenders and victim comprise a common and interdependent ecology" (p. 463). Cromwell, Olson, and Avary (1991) also discuss the importance of the victim perspective in their study of burglary. They contend that the activities of the victim play a critical role in how burglars pick a home to burglarize, how they enter, and how long they remain. Cromwell et al. believe that "most burglaries in the jurisdictions studied appeared to result from a propitious juxtaposition of target, offender, and situations" (p. 47).

Profiling is ultimately based on the assumption that human behavior is consistent across time (**trans-temporal consistency**) and place (**trans-situational consistency**).

The profile process, by its very nature, presupposes that crime scene clues provide the skillful investigator with clues of the perpetrator's personality traits, habits, and even thought processes. Furthermore, there is an assumption that key factors of the personality identified at the crime scene should generalize to other situations, including future crimes.

The ability to predict the behavior and tendencies of individuals across different situations (trans-situational consistency) is very much open to debate. For example, some researchers (e.g., Mischel, 1968; Mischel & Peake, 1982) argue that human behavior across different situations is inconsistent and that notions of stable behavioral dispositions or personality traits are largely unsupported. Research by Merry and Harsent (2000) cogently illustrates that most criminal behavior, such as burglary, changes as the dynamics of the situation change. Consequently, crime scene activity is likely to be different from crime to crime. Although trans-situational consistency remains highly questionable, consistency across time (temporal consistency) is acknowledged. As long as situations are similar, people will likely respond the same way over their life spans. But when situations change, behavior is apt to change. Therefore, criminal behavior that has been reinforced in a particular context is more apt to recur in a similar context than across a wide variety of different settings. A person who had engaged in a lifetime of burglary, for instance, is more likely to burglarize again if surrounded by similar psychosocial situations that have a perceived reward value. Therefore, there is trans-temporal consistency in behavior if the perceived situation is the same. On the other hand, if the person's environment has changed substantially (e.g., long-time partner in crime has died, or the person has aged to the point where physical agility has substantially deteriorated), the burglarizing is less likely to continue.

Mischel and Peake (1982) conclude, on the basis of their research findings, that behavior is highly dependent on the nature of the situation and that humans discriminate between situations and respond accordingly. Can we expect a shy child to be socially withdrawn on *all* occasions—even with family? He or she may be shy when meeting strangers (trans-temporal consistency) but not shy in familiar, family situations. Consider the typical skyjacker profile, identified by Dailey and Pickrel (1975a) and discussed in Chapter 2. Lacking resourcefulness and having feelings of helplessness are examples of mood states and behavioral patterns that may well *not* have trans-situational consistency. In fact, Hanson and Harris (2000) would call these acute dynamic risk facts, which are highly changeable. Although research by Bem and Allen (1974) and Kenrick and Springfield (1980) does suggest that *some* behaviors are consistent across both time and place, it is clear that *most* are not.

Trans-situational consistency is a critical issue in the formulation of any classification system or profile system, but we have seen that it is risky to assume it exists. Yet belief in "personality profiles" persists, not only with respect to criminal behavior but also in areas involving employment screening. Thus, a company may want to know what type of person makes the best salesperson, or a law enforcement agency may want to know who from a pool of applicants will make the best officer.

The intricate interaction of personality and situation creates problems for profilers. Personality research and theory building, 20 or 30 years ago, emphasized the person to the exclusion of the situation. It was assumed that personality structures and traits



were the center and driving force of all human behavior. Once these attributes were delineated, it was believed, accurate prediction was almost guaranteed. In this sense, to say an individual had an aggressive personality was to infer a corresponding list of behaviors, most of them negative. As we have noted, however, the situation and the meaning of that situation for the person are crucial variables. Rather than relying on a global conclusion that an officer has an “aggressive personality,” an agency would do well to try to determine how the officer handles himself or herself in various situations.

The above discussion emphasizes that accurate assessment and prediction require not only an evaluation of the person but also an evaluation of the psychosocial environment within which the behaviors we are trying to predict occur. Failure to consider the context of the behavior is destined to produce disappointing results.

Profiling is a **nomothetic approach** in that it tries to make *general* predictions about offenders based on clusters of data gathered from previous offenders. Nomothetic refers to the search for general principles, relationships, and patterns by examining and combining data from many individuals. Research psychology is largely nomothetic as opposed to idiographic in scope. The **idiographic approach** emphasizes the intensive study of one individual. A case study of the coping behaviors of an individual or the biography of a famous person is an example of the idiographic approach. Profiling that relies exclusively on the idiographic approach is in far more danger of missing the mark than profiling based on the nomothetic approach, especially if the nomothetic approach emphasizes the situational variables as much as is validly possible. Yet many profilers and clinicians prefer exclusive use of the idiographic approach, even though research has continually revealed that predictions based on statistical probability, calculated from research on clusters of offenders under various conditions, are far more accurate.

There are other problems with profiling as well. Some recent studies—including meta-analyses—indicate that a large proportion of the conclusions and predictions contained within profiles are both ambiguous and unverifiable (Alison, Smith, Eastman, & Rainbow, 2003; Alison, Smith, & Morgan, 2003; Snook et al., 2007). Some of the statements are so vague that they are open to a wide range of interpretations.

Moreover, there seems to be a tendency for police investigators to “creatively interpret” the ambiguous information contained within profiles to fit their own biases about the case or the suspect. They select those aspects of the profile that they perceive as fitting the suspect while ignoring the many conclusions and predictions that do not seem to fit.

If a suspect does arise during the investigation, officers may wish to actively ignore the information that does not fit the suspect, or perhaps unwittingly exaggerate the merits of the information that might fit and not appreciate the extent to which the information could fit a wide range of individuals. (Alison, Smith, & Morgan, 2003, p. 193)

The strong preference to have one’s views confirmed is known as **confirmation bias**. “When it operates, it places us in a kind of closed cognitive system in which only evidence that confirms our existing views and beliefs gets inside; other information is sometimes noticed but is quickly rejected as false” (Baron & Byrne, 2000, p. 8). In short, confirmation bias is the tendency to notice and remember information that lends

support to our views on something, such as a suspect. It is a tendency that might be prevalent not only in the subjective interpretations of a profile but also in its creation.

Although there are many flaws in current profiling methods, if conducted appropriately, profiling could have a promising and extremely useful future. If profilers took into account the interaction between the person and the situations (and the influence of the victim), the science of profiling could lead to more accurate and helpful sketches of the offender. In addition, profilers should abandon the traditional and naive understanding of trait theory and rely more on contemporary psychological theory and research on human behavior. They should look for the conditional probability of certain behaviors occurring under certain situations instead of assuming that behavior remains consistent across all situations. All of this will require greater reliance on and involvement in well-executed scientific research.

## The Polygraph

The polygraph—commonly called the “lie detector”—does not really detect lies or deception but only the psychophysiological responses that accompany emotional reactions to guilt, shame, and anxiety. The instrument usually records heart rate, blood pressure, breathing rate, and skin conductance. Skin conductance refers to how well the skin conducts a small, imperceptible electrical current that is affected by slight changes in perspiration. Presumably, when one tries to deceive, there are telltale bodily or physiological reactions that can be measured with sophisticated equipment and detected by a trained examiner called a polygrapher. In addition to observing the physiological measures, the skillful polygrapher makes behavioral observations and notations to infer truth or deception in the subject being examined. There is little doubt that the polygraph can accurately measure and record the physiological responses. Whether it can detect actual lying and deception is another matter.

### A Brief History of the Polygraph

The modern polygraph has been used in some form for nearly a century, and much cruder versions of its components existed as far back as 300 B.C. (Trovillo, 1939). The Bedouins of Arabia, for example, required the authors of conflicting statements to lick a hot iron. The one whose tongue was not burned was considered truthful. The ancient Chinese required suspects to put rice powder in their mouths and then spit it out. If the powder was dry, the individual was lying (B. M. Smith, 1967). The common principle underlying these and other similar methods used throughout history is that the tense, nervous person (the one who is lying) has less saliva (dry mouth and tongue) and thus is more likely to have his or her tongue burned; spit drier rice powder; or even be less able to swallow the “trial slice” of bread, as practiced centuries ago in England.

The idea of lie detection caught on rapidly in the United States during the 1920s and 1930s after John Larson was asked by the chief of police in Berkeley, California, to develop a “lie detector” to solve a case under investigation (Barland & Raskin, 1973). This instrument, according to Barland (1988), became “the first true polygraph used for lie-detection purposes” (p. 75). A number of well-publicized successes by Larson and one of his students, Leonarde Keeler, catapulted the polygraph into the limelight.

Eventually, Keeler began to teach a 2-week course for police and military examiners, which soon developed into a 6-week course (Barland, 1988; Keeler, 1984). The increasing demand for polygraph examiners resulted in the formation of at least 30 polygraph schools across the United States (Barland, 1988).

### Current Usage of the Polygraph

During its early beginnings in the United States, the polygraph was used almost exclusively in criminal investigations. However, as criminal suspects began to assert their right to refuse to take the polygraph, and as civil libertarians challenged the instrument's validity, the use of the polygraph has become less common. Today, the polygraph is administered if criminal defendants or defendants in a civil suit offer to take it. With respect to employment situations, Congress has severely limited the extent to which *private* employers can use the polygraph with the passage of the **Employee Polygraph Protection Act**, enacted in 1988. This law has, in effect, ended preemployment polygraphic screening by *private* employers as well as the periodic testing of employees to verify their good behavior (Iacono & Patrick, 1999). Therefore, we still see examples of suspects volunteering to take a polygraph to clear their names or the polygraph being used in counterintelligence investigations. For the most part, however, its major uses are in personnel selection or screening by *government* agencies.

Today, U.S. governmental counterintelligence polygraph tests far outnumber the tests given at other organizations or at all other government agencies (Krapohl, 2002). Furthermore, the amount of polygraph screening of police, law enforcement, or governmental security applicants has either remained the same or increased in recent years. Meesig and Horvath (1995) report that approximately 99% of the large police agencies and 95% of the small police departments in the United States require the polygraph as an integral and indispensable part of their preemployment screening procedures.

Currently, a variety of private and government-sponsored polygraph schools are in operation, almost all of which are accredited by the American Polygraph Association. The most prestigious and intensive is the one operated by the U.S. Department of Defense. The Department of Defense Polygraphy Institute (DoDPI) trains all polygraphers employed by federal agencies, with the exception of the CIA, as well as polygraphers employed by many local and state agencies. The DoDPI also includes a research arm, staffed primarily by doctoral-level psychologists (Iacono & Patrick, 1999). Other polygraph schools vary widely in training and rarely include a research component. The typical polygraph examiner in the United States today does not have graduate psychological or research training; not all polygraph examiners are licensed or are graduates of accredited schools. In addition, the profession has “almost no input or oversight from psychology” (Iacono & Patrick, 1999, p. 467).

Many polygraph examiners also have shifted to computerization—called computerized polygraph systems (CPS)—to replace the conventional chart or graph method. Physiological data are stored digitally and are plotted with a printer. Software allows the computer to provide a probability statement as to the likelihood that a person was truthful when responding (Iacono & Patrick, 1999).

## Traditional Procedures Used by Polygraphers

Polygraphers use several polygraph techniques or approaches to determine deception or truthfulness during the examination. The most commonly used procedure for lie detection in criminal investigations is the **control question technique (CQT)**, developed by John Reid (Bashore & Rapp, 1993; Reid & Inbau, 1977). The most commonly used procedure for detection in preemployment screening is the **relevant/irrelevant question technique**, developed by Lykken (1981). Critics of these traditional polygraph procedures have argued that the fundamental assumptions on which they are based are flawed and that there is essentially no sound scientific support for their validity (Bashore & Rapp, 1993). These critics believe that these frequently used procedures have not been subjected to rigorous scientific investigation and that the claims of their validity by their proponents are largely based on subjective evaluations. Today, the polygraph continues to be a highly controversial topic on philosophical, legal, theoretical, scientific, and ethical grounds. In a survey of scientists knowledgeable about the polygraph, Iacono and Lykken (1997) found that a majority of the respondents

believed that polygraphic lie detection is not theoretically sound, claims of high validity for these procedures cannot be sustained, the lie test can be beaten by easily learned countermeasures, and polygraph test results should not be admitted into evidence in courts of law. (p. 462)

Despite the controversy—and as mentioned above—polygraphs continue to be used in a wide variety of governmental contexts, including criminal investigations, counterintelligence and national security screening, and civil litigation and postconviction assessments. The last category includes situations in which the polygraph is used with sex offenders to detect deception in an effort to control recidivism. For example, a survey revealed that 35 states were using polygraph testing for monitoring convicted sex offenders (Consigli, 2002).

## Countermeasures

**Countermeasures** are anything that an examinee might do to “fool” the polygraph and the examiner (Bartol & Bartol, 2004). Many types of countermeasures are possible, but most fall into the categories of physical, mental, hypnosis, biofeedback, or drugs. The most common physical countermeasures are either pain or muscle tension. For example, in an effort to deceive the polygrapher, biting one’s lip or tongue or subtly jabbing oneself with a pin may induce enough pain to promote a physiological response that masks the subject’s response to questions from the polygrapher.

Available research suggests that mental countermeasures may be as effective in deceiving the polygraph as physical ones (Ben-Shakhar & Dolev, 1996; Honts, Devitt, Winbush, & Kircher, 1996). Mental countermeasures include any deliberate attempt by an examinee to alter his or her thought patterns during the polygraph test to deceive the polygrapher. Examples would include counting backwards from 100, thinking of a sexually arousing scene, imagining walking your dog on a promising spring morning, or

thinking of a very peaceful scene (such as canoeing on a moonlit lake on a summer evening). Any thought that either minimizes the emotional impact of relevant questions or increases physiological arousal across all questions qualifies as a mental countermeasure. Although physical countermeasures are often detectable by experienced polygraphers, mental countermeasures are far more difficult to detect (Ben-Shakhar, 2002).

It should be emphasized, however, that research indicates that spontaneous countermeasures in which the examinee tries to influence the outcome of the polygraph without forethought, planning, or training are largely ineffective (Honts & Amato, 2002). Untrained respondents who use physical, behavioral, and cognitive measures to deceive the polygrapher are rarely successful. In addition, there is very little evidence that drugs—sometimes referred to as “general state countermeasures” because they influence the entire neurophysiological systems—can be used as an effective countermeasure to polygraph testing (Honts, 1987; Honts & Amato, 2002), and this includes alcohol (Honts & Perry, 1992). Hypnosis has also been tried. The primary strategy in the use of hypnosis as a countermeasure is to induce a form of amnesia for the behavior in question. However, there is no evidence to date that hypnosis is an effective countermeasure in untrained respondents either (Gudjonsson, 1988).

An important issue concerning the use of the polygraph in criminal investigations is its accuracy with psychopaths, who are portrayed as skilled liars and manipulators with a limited capacity for anxiety or guilt (Patrick & Iacono, 1989). The possibility that psychopaths might be able to beat the polygraph is a concern because most of the research reveals that psychopaths—who will be discussed in detail in Chapter 7—constitute a sizable proportion of violent and repetitive offenders. Although the evidence on the issue remains unclear, some preliminary data from Patrick and Iacono suggest that under certain conditions, guilty psychopaths can be detected at about the same rate as guilty nonpsychopaths.

Although individuals are not likely to beat the polygraph on their own, training in physical and mental countermeasures *may* be effective (Ben-Shakhar, 2002; Krapohl, 2002). Charles Honts and his research group (Honts, Hodes, & Raskin, 1985; Honts, Raskin, & Kircher, 1987) report that a significant proportion of highly motivated respondents can be trained to beat polygraph tests. The possibility of effective countermeasures is especially pertinent when the polygraph is used for espionage purposes. Spies and intelligence agents are probably well trained and largely effective in the use of countermeasures for defeating polygraph results.

Honts and Amato (2002) report that scientific studies examining the effects of countermeasure training on polygraphic results will be very limited in the foreseeable future, however. This is partly due to the fact that research on countermeasures is difficult to conduct unless one has access to considerable resources and governmental financial support. Since the beginning of the 1990s, polygraphic research in the United States has been centered at the DoDPI. Currently, the DoDPI has a policy that all countermeasures research on the polygraph will be classified and not open to the scientific community or the general public. Apparently, the federal government does not want current employees or future applicants to governmental jobs to learn of any effective ways to control the results of the polygraph.

## Research on the Polygraph

Many researchers continue to be very wary of the polygraph and its overall accuracy. Historically, professional field polygraphers have claimed extraordinary accuracy rates, ranging from 92% to 100% (Bartol & Bartol, 2004). Most biopsychologists and research psychologists find these statistics highly questionable. This is partly due to the fact that, in addition to occasional arithmetical errors, none of the published reports gave any details of the methods and procedures used or of the criteria used to decide accuracy rates. Currently, the research conducted under laboratory or controlled conditions indicates that the correct classification of truthful and deceptive examinees ranges between 70% and 80% (Krapohl, 2002). However, the accuracy can be increased slightly through careful and intensive training of the examiner. Furthermore, in lab studies, computerized polygraph systems, in contrast to human evaluations, are slightly more accurate for detecting both innocent and deceptive respondents (Kircher & Raskin, 2002). Polygraphic research conducted under realistic or field conditions is rare, however.

The accuracy of the polygraph in detecting who is telling the truth and who is deceptive is a highly complicated issue.

A number of factors—such as the specific technique used, the nature of the population tested, the issues to be resolved, the context of the examination, whether one is trying to detect truth or deception, the training of the examiner, what cues the examiner considers besides the polygraphic data, or even whether one is examining the victim or the suspect—all must be carefully considered before any tentative conclusions can be advanced. (Bartol & Bartol, 2004, p. 285)

Many professional polygraphers believe that the polygraph may be more accurate with criminal suspects than with victims (Barland, 1988). Many of these polygraphers also believe that people who have committed property crimes (theft, burglary) are more difficult to detect than those who have committed violent crimes, such as physical or sexual assault, robbery, or murder, primarily because the emotional baggage is usually higher for the latter than for the former (Horvath, 1977). The polygraph is also believed to be more accurate when a suspect denies having physically committed a specific, illegal act and less accurate when the suspect admits the act but denies criminal intent (Barland, 1988). In other words, it is more difficult to determine what a person was thinking than what a person actually did.

## Forensic Hypnosis

Hypnosis is a procedure during which a mental health, health, or forensic professional suggests to a person that he or she try to experience changes in sensations, perceptions, thoughts, and behavior. It is a procedure that should be used only by highly trained and properly credentialed professionals. Hypnosis is usually established by what is commonly referred to as an induction procedure. Although there are many different induction procedures, most center on suggestions for relaxation, calmness, and well-being. Induction instructions usually include asking the participant to imagine or

think about pleasant experiences or things. During the induction, the participant may be sitting comfortably or lying down while concentrating on a “target” (such as a lit candle) and listening to the hypnotist’s voice. The participant is usually encouraged to drift into a sleep-like state while always hearing the hypnotist’s voice. Overall, most people find the experience very pleasant and relaxing.

People differ widely in their responses and susceptibility to hypnosis. “Some people respond to almost all suggestions, some respond to a few or none, and most respond to some suggestions but not others” (Brafman & Kirsch, 1999, p. 578). The ability to be hypnotized is believed to be an enduring and stable attribute, which peaks during the life cycle in late childhood and declines gradually thereafter (Spiegel & Spiegel, 1987). Among the factors that are important in inducing hypnosis are (1) the level of trust the participant places on the hypnotist, (2) the participant’s motivation and desire to cooperate, (3) preconceived notions the participant has about hypnosis, and (4) the context and reasons for the hypnosis (e.g., entertainment or critical information gathering). Trust, motivation, a strong belief in hypnotism’s powers, and a serious context (such as a criminal investigation) inspire most people to become hypnotized, but this does not mean that they will accurately recall events. Apparently, what distinguishes truly being hypnotized from simple behavioral compliance is the person’s ability to experience suggested alterations in perception, memory, and mood (Orne, Whitehouse, Dinges, & Orne, 1988).

A person’s ability to experience hypnotic suggestions is most often inhibited by fears and concerns arising from some common misconceptions. Contrary to some depictions of hypnosis in books, movies, or television, people who have been hypnotized do not lose control over their behavior. Hypnotized individuals remain aware of who and where they are, and unless some form of temporary forgetfulness is specifically suggested, they usually remember what transpired during the hypnosis. It has long been known that all the experiences and responses that are elicited during hypnosis can also be produced in a normal state without hypnotic induction (Brafman & Kirsch, 1999). Hypnosis does, however, increase suggestibility. As noted by Brafman and Kirsch, “The only thing which characterizes hypnosis as such and which gives any justification for calling it a ‘state’ is its generalized hypersuggestibility” (p. 578). The hypersuggestibility aspect, however, is the one feature that is most troubling to forensic investigators and researchers concerned with recollections of witnesses or victims of crime incidents. In fact, “The subject’s willingness to accept fantasy as reality during the hypnotic experience, together with the often dramatic vividness of recollections in hypnosis, may inspire great confidence that the recalled material is true to fact” (Orne et al., 1988, p. 25). This *induced* confidence, for example, may soundly convince the witness that his or her ambiguous view of the offender was much clearer than it really was.

Hypnosis has long been used in a variety of ways: as a form of entertainment (getting some people in an audience to do humorous things presumably without their awareness), as a method to encourage people to give up smoking or lose weight, as a procedure in several branches of medicine for pain reduction, and as a means of enhancing the memory of eyewitnesses and victims in the criminal justice system. A common belief among some practitioners is that hypnosis can exhume long-forgotten or buried memories, such as repressed memories of sexual abuse. This belief has frequently been

bolstered by anecdotal or clinical claims describing cases in which previously inaccessible memories have been brought to light by the mysterious hypnotic trance. Enhancement or revival of memory through hypnosis is known as **hypnotic hyperamnesia**. Enhancement or recovery of memory through *nonhypnotic* methods, such as free association, fantasy, and recall technique, is called **nonhypnotic hyperamnesia**.

Despite its long and varied history, we still do not know precisely how hypnosis works, nor do we understand why some persons are readily susceptible to its influence but others are impervious. We do know that hypnosis seems to have little significant biological impact on bodily functioning other than those changes that occur in normal relaxation. We also know that hypnosis is not the same as sleep or a form of sleepwalking. But we know little more than this.

Currently, two major theoretical perspectives have been proposed for explaining the mechanisms behind its effects. One perspective, known as the **hypnotic trance theory**, assumes that hypnosis represents a *special state of consciousness* that promotes a high level of suggestibility and changes in bodily experiences. Under this special state of consciousness, the theory maintains, the hypnotized person may be able to do things that he or she could not do under a normal state of consciousness. For example, the person might regress to childhood and vividly remember or act out events that have been repressed or put out of consciousness for an extended period of time. While in the trance, participants may be instructed to feel little or no pain or to perform acts that they are unable to do when not hypnotized. The hypnotic trance theory holds that individuals can be instructed or trained to sense, feel, smell, see, or hear things not normally possible under normal consciousness. For some individuals, hypnosis can substantially improve their ability to remember things. Generally, trance theory contends that the deeper the “hypnotic trance,” the more intense, detailed, and vivid a scene becomes to the participant. Historically, the most influential perspective on hypnotic trance theory came from Ernest Hilgard (1986). The research evidence supporting this position, however, is very slim and overall not very convincing.

The second major theory is referred to as the **cognitive-behavioral viewpoint**, which contends that respondents are not in a special state of consciousness when they *appear* hypnotized. Rather, hypnosis is a product of certain attitudes, motivations, and expectancies toward the “hypnotic state”—not a “true” alteration of consciousness. According to the cognitive-behavioral viewpoint, people who have a positive attitude toward hypnosis and are highly motivated to be hypnotized actually role-play the “trance” by closely following many of the suggestions provided by the hypnotist. For example, when the hypnotist suggests to them that they feel relaxed, they will try and probably will feel relaxed. Or, when the hypnotist suggests their eyes will tear up from staring so long at the target, their eyes will begin to tear.

Theodore X. Barber, one of the chief spokespersons for the cognitive-behavioral perspective (Barber, Spanos, & Chaves, 1974), has hypothesized that the good hypnotic respondent is one who not only has the proper mixture of attitude, motivation, and expectancy, but also has the ability to think and imagine with the hypnotist. According to Barber, the good hypnotic respondent is similar to a person watching a captivating video or movie. This person experiences—sometimes intensely—the emotions and



actions portrayed by the actors on the screen. In this sense, the “hypnotized” person is mesmerized by the imagery created in his or her mind.

Martin Orne (1970; Orne, Dinges, & Orne, 1984), who was until his death one of the world’s foremost authorities on hypnosis, hypothesized a similar viewpoint to the cognitive-behavioral theory, arguing that role-playing accounts for much of the so-called hypnotic phenomenon. That is, participants act the way they *think* a truly hypnotized individual would act. Orne believed that “a prerequisite for hypnosis is the willingness to adopt the role of the ‘hypnotic subject,’ with its implicit social contract for uncritical acceptance of appropriate suggestions administered by the hypnotist” (Orne et al., 1988, p. 23). The “hypnotic subject” is willing to relinquish his or her sense of reality temporarily, hold any critical thinking in abeyance, and concentrate on what the hypnotist says. He called this state “trance logic” to describe the behavior of hypnotized participants who appeared to display a “peaceful coexistence between illusion and reality” (Kihlstrom, 2001, p. 754). Orne found in his research that the material described under so-called hypnotic trances is often inaccurate and embellished with many intervening events that occur between the initial incident and the hypnotic session. It appears that some hypnotic participants are highly susceptible to distortions, suggestions, and leading questions posed by the hypnotist. Particularly if the interrogator is a police officer convinced of the powers of hypnosis, he or she is apt to inadvertently suggest events, details, or behaviors that were not present during the crime. The hypnotized witness or victim, eager to please the interrogator, can easily imagine a scene decorated with subjective fantasies and thoughts in line with the suggestions of the questioner. Under these suggestible conditions, the hypnotized participant may begin to be convinced of the accuracy and power of hypnosis to the same degree as the hypnotist. Furthermore, the participant also may become increasingly convinced of the accuracy of his or her revised account of the imagined scene, in contrast to the original (prehypnotic) account.

Orne became well-known outside professional circles as a result of his skillful evaluation of Kenneth Bianchi, the accused “Hillside Strangler” who terrorized women and young girls in the greater Los Angeles area in the late 1970s (see In Focus Box 3.3). Bianchi maintained under hypnosis that his alter personality, “Steve Walker,” had committed the murders. Bianchi argued that because he was suffering from a multiple personality disorder, he should not be held responsible for the serial murders. Ultimately, he was hoping for a successful insanity defense. Orne, however, was able to convince the court that Bianchi was merely playacting the different personalities while pretending to be hypnotized. Bianchi, because of Orne’s testimony, dropped the multiple personality act and agreed to testify against his comurderer, Angelo Buono, and to accept a life sentence without the possibility of parole. Orne’s critical perspective on forensic hypnosis influenced more than 30 state supreme court decisions as well as the U.S. Supreme Court. He also developed guidelines for forensic hypnosis that were adopted by the Federal Bureau of Investigation (Kihlstrom, 2001).

When forensic hypnosis is used as a method to recall events that may be either several hours or several years old, the fundamental assumption is that human memory functions like a videotape. All the events and details are stored completely and

accurately and, with the proper procedure, can be recalled or brought to consciousness intact. This assumption, however, is without much research support (Bartol & Bartol, 2004). Human perception and memory are flawed and permeated with inaccuracies and distortions. The frailties of perception and memory, combined with the highly suggestive medium under which hypnosis is conducted, provide a situation in which critical inaccuracies have a high probability of occurring. Memory recall under hypnosis is highly malleable and manipulatable, especially in highly suggestible respondents (Haber & Haber, 2000). Therefore, leading or suggestive questions may have a substantial effect on the respondents' recall of events after they are hypnotized (Kebbell & Wagstaff, 1998). The danger is particularly high when the forensic examiner is untrained or uninformed about the power of questioning suggestible respondents. In addition, the tendency to make up things to fill the gaps in memory appears to be greater under hypnosis (Orne et al., 1988).

It is important, therefore, that the forensic psychologist be aware of the research and the many dangers of poorly conducted interrogations or interviews when hypnosis is used. As noted by Schefflin, Spiegel, and Spiegel (1999), "When hypnosis is used for forensic purposes, strict guidelines must be scrupulously followed" (p. 491). Hypnosis can be a useful tool if used properly and with the understanding that it is no shortcut or replacement for standard investigative procedures. It can help, for instance, when trauma has occurred and it is difficult for the person to mentally or physically revisit the scene without the relaxation and concentration states that can be accomplished through hypnosis.

## Identifying the Offender: Other Procedures

Police officers routinely interview witnesses to a criminal incident. Typically, this task requires attempts at some form of identification of the offender. The identification of suspects by witnesses begins as soon after the offense as possible. Police usually obtain verbal descriptions of the perpetrators from witnesses or show photographs to obtain a preliminary identification. In some instances, the police will have witnesses scan photos of individuals with previous records, either to identify the specific offender or to obtain an approximation of the offender's appearance. Some police agencies routinely ask witnesses to examine a group of photographs (photoboards, photospreads, or mug shots) fairly well matched to the physical characteristics described by the witnesses, including a photo of the person the police suspect to be the guilty party. This section will examine the many pitfalls of other procedures designed to gather identification clues about the offender.

### Identifying the Face

Courts, particularly criminal courts, rely heavily on eyewitness recognition as critical evidence either for or against the defendant. However, an accumulation of scientific studies demonstrates that the accurate recognition of a relatively unfamiliar face is an extremely complex and error-ridden task (Bartol & Bartol, 2004). Research also reveals that the accuracy of facial recognition depends greatly on the type of face being recalled.

### IN FOCUS 3.3 The Case of the Hillside Strangler

At least 12 women and girls, ranging in ages from 12 to 27, were victims of the Hillside Strangler, who terrorized the Los Angeles area between 1977 and 1978. The name "Hillside Strangler" was assigned to this serial killer because the nude bodies of many of the young women were conspicuously displayed on the hillsides in the Los Angeles area.

Kenneth Bianchi, who eventually pled guilty to the Hillside killings, had a very checkered career, holding at least 12 different jobs during a 9-month period following graduation from high school. During that time, he engaged in a wide variety of illegal activities, ranging from the use of stolen credit cards to the pimping of juvenile prostitutes. Although his life's ambition was to become a police officer, Bianchi also claimed to be a psychologist by falsifying his degrees and credentials. At age 26, he began to live with a woman in a common-law relationship who bore him a son. Soon after the birth of the son, Bianchi's common-law wife moved to Bellingham, Washington, where Bianchi soon joined her. However, soon after his arrival, the police in Bellingham had compelling evidence that Bianchi may have murdered two university students in that small city. Bianchi was arrested on January 11, 1979, and charged with their murders. Surprisingly, an investigation also revealed that the killings in Washington followed a pattern very similar to those of the Hillside Strangler in California.

Bianchi had seen a film shortly before his arrest called *Sybil*, in which Sally Field played a schizophrenic suffering from multiple personalities set in motion by childhood abuse. In the film, one of the personalities Sybil displayed was a spiteful, vicious, manipulating alter ego who chronically tormented the normally pleasant and sedate Sybil. Apparently, Bianchi got his inspiration from the film to play a person haunted by a lustful, murderous alter ego out of his

control. In his mind, Bianchi thought his uncontrollable "other person" would provide the key ingredient for a successful insanity defense and absolve him of the crimes.

Under hypnosis during a forensic examination, Bianchi revealed his alter ego as Steve Walker, who admitted killing the two Bellingham women. But evildoer Steve Walker didn't stop there; he went on to confess to the Hillside Strangler murders while implicating Bianchi's cousin, Angelo Buono, as playing a major role in the killings. After two other forensic experts examined Bianchi and found his "performance" convincing, the police brought in one of the world's best-known experts on hypnosis, psychiatrist Martin T. Orne. During a forensic interview, Orne, doubtful about the veracity of exhuming multiple personalities through hypnosis, set a trap for the unsuspecting Bianchi. Orne told Bianchi in passing that multiple personality disorders almost always contain at least three different persons. Bianchi took the bait, and during the next hypnotic session, he introduced three more characters, including a prominent one called "Billy."

Orne's testimony, combined with the testimony of another expert, completely undermined the validity of Bianchi's multiple personality claim, and he was offered a plea bargain: to come clean and to testify against his cousin, in return for which he would receive a life sentence without the possibility of parole. Bianchi, realizing his act was up, accepted the plea bargain to avoid the death penalty. Because of Bianchi's testimony, his cousin, Buono, was convicted of nine murders but was spared the death penalty by the jury. He died in prison on September 21, 2002, at age 67 after apparently suffering a heart attack in his cell. Bianchi, as part of the plea bargain, pled guilty to five murders and is currently serving a 118-year sentence at the Walla Walla State Penitentiary in the state of Washington.

For reasons unknown, some faces are easier to identify than others. Highly unique faces, for example, are better recognized than plain or average faces (M. E. Cohen & Carr, 1975; Going & Read, 1974), and distinct faces are easier to recognize than are typical faces (Chiroro & Valentine, 1995; MacLin & Malpass, 2001). Faces high and low in attractiveness also are easier to recognize than faces judged to be of medium attractiveness (Shepherd & Ellis, 1973). Not surprisingly, the longer a person views a face, the better the recognition of the face at a later time (MacLin, MacLin, & Malpass, 2001).

### Unconscious Transference

On occasion, witnesses may identify persons they have seen at some other time and place as the perpetrators of a more recent crime. This phenomenon, called **unconscious transference**, occurs when a person seen in one situation is confused with or recalled as a person seen in another situation. It is called “unconscious” because people do not realize they are doing it. A witness may have had limited exposure to a face (e.g., in a grocery store) and, on seeing the face at a later time, may conclude that it is the offender’s. Loftus (1979) believes that unconscious transference is another feature of the fallible and malleable nature of human memory, where earlier input becomes “tangled up” with later input. As we noted above, research has shown that human memory is not like a videotape or DVD that stores things exactly as seen. Rather, memory is continually changing or being revised in line with our cognitive beliefs and versions of the world.

The phenomenon of unconscious transference illustrates that, for example, it is highly possible that a fast-food worker, who is witness to a robbery of the restaurant, might incorrectly identify as the perpetrator an occasional customer who may have some of the features of the actual culprit. However, for unconscious transference to occur, the previous encounters with the innocent face must have been relatively brief. *Frequent* encounters with customers by the witness are unlikely to trigger unconscious transference involving those particular customers.

### Own-Race Bias (ORB)

There is now considerable evidence that people are much better at discriminating among faces of their own race or ethnic group than among faces of other races or ethnic groups (Bartol & Bartol, 2004). Researchers call this phenomenon **own-race bias (ORB)**, or it is sometimes referred to as “own-race effect” or “cross-race effect.” Scientific research across a wide band of cultures and countries has documented ORB, and it exists across diverse ethnic groups (Meissner & Brigham, 2001; Sporer, 2001). Unfortunately, the majority of errors due to ORB are in the category of false alarms. False alarms refer to those situations when a witness identifies the wrong person as the offender. Although the frequency of false alarms seems to be increasing in our society, racial attitudes or prejudice do not seem to account for this phenomenon in a majority of cases (Meissner & Brigham, 2001).

Although there are several possible explanations for ORB, the most popular is called the **differential experience hypothesis**. The hypothesis states that individuals will have greater familiarity or experience with members of their own race and will thus be better able to discern differences among its members. Furthermore, it is the frequency

of meaningful and positive contacts with other races that develops the skill to differentiate among different racial or ethnic faces (MacLin & Malpass, 2001; Yarmey, 1979). For example, having close friends of other races is more likely to promote better facial recognition than having frequent but casual exposure. This other-race effect is obviously a critical aspect in the identification of suspects by eyewitnesses.

## Pretrial Identification Methods

### Lineups and Photospreads

From the entertainment media—if not from personal experience—most of us are familiar with the “lineup” procedure, in which a small number of individuals, typically five or six, stand in a line, and witnesses or victims of a crime stand behind a one-way mirror and try to identify the perpetrator. An alternative to this, used when no suspect is in custody, is the photospread, in which witnesses and victims peruse books, poster boards, or photographs on a computer for the same purpose. These pretrial identification methods are especially vulnerable to biases and error, running from very blatant practices to more subtle innuendo, an aspect that police psychologists should be very aware of. For example, a police investigator suggesting to an undecided witness that she should look more closely at “the second one from the right” represents subtle innuendo. Likewise, when witnesses view a collection of photographs including one of a criminal suspect, an investigator may provide some hints concerning the location of the suspect’s photo.

The lineup is particularly vulnerable to this manipulation both because it usually contains fewer choices than the photospread and because investigators presumably are closer to solving the crime, having a suspect in custody—that is, they have a vested interest in clearing the case. Because the witness will look for a suspect in the lineup who fits the description he or she gave the police, the physical characteristics of the members in the lineup are a crucial factor. In other words, they should have similar characteristics—such as age, physical stature, race, hairstyle, and facial hair—to those that were included in the original witness description. It is also well-known that, after a crime or before appearing in lineups, many suspects will try to change their appearance to mislead eyewitnesses, a tactic that is often successful (Cutler, Penrod, & Martens, 1987). If the witness remembered the offender as a 6-foot, 1-inch individual with black, curly hair and a beard, the lineup is obviously biased if only one person in six fits that description. No matter how many foils are standing in the line, the test is effectively limited to the number of participants who resemble the suspect, a condition called **functional size** of the lineup.

**Nominal size** of the lineup, on the other hand, refers to the actual number of members within the lineup who may or may not resemble the suspect. Therefore, in a lineup of six persons, the functional size will decrease as the physically dissimilar members of a lineup increase. For a lineup to be considered fair, its functional size should approximate the nominal size. If, by employing various measures and statistical tests, it is determined that all the members of a six-member lineup have an equal probability of being selected on the basis of crucial characteristics, the functional size

is six. If only three resemble the suspect, the functional size is three and the nominal size is six. Another area of pretrial identification that must be closely monitored is **commitment bias**, described below.

When a witness has initially identified a face, even an incorrect one, he or she will be more likely to choose the face again. Commitment bias is most likely to occur when witnesses are eager to please police investigators and when they further assume that the police have good evidence against someone in the pretrial identification process. Because of commitment bias, a witness who initially identifies a suspect, but with some doubt, is more likely to identify the suspect in subsequent exposures with greater conviction. Each subsequent identification promotes greater confidence in the witness because he or she will continue to make public commitment to the police that the suspect is clearly the one.

One controversial identification procedure is called the **show-up**. “A show-up is an identification procedure in which police present a single suspect to the eyewitness(es) to see if the eyewitness(es) will identify that person as the perpetrator” (Wells, 2001, p. 795). Unlike the lineup, there are no distractors or foils in a show-up procedure. A show-up is legal in the United States as long as it occurs soon after the offense (within hours) or under circumstances that would make a lineup impracticable or impossible. An example is police bringing a suspect in custody to the hospital bed of a victim who is not expected to recover—a rare but not unheard of occurrence. Nevertheless, police must be very careful not to make the show-up unnecessarily suggestive and must be able to document that this approach was imperative. Research shows that show-ups are far more likely to lead to mistaken identification than lineups (Wells, 2001). This is because in a lineup, the error of mistakenly identifying a suspect is spread out among the foils and distractors. In the show-up situation, on the other hand, there is only one choice, right or wrong.

In 2001, the American Psychology-Law Society (AP-LS), in an effort to make certain that forensic psychologists and other personnel in the criminal justice system were aware of ways to improve lineup procedures, published a comprehensive document known as the Police Lineups White Paper (Wells, 2001). The document made four recommendations for implementing valid procedures in conducting lineups or photospreads (see Wells et al., 1998). First, the panel recommended that the person *putting together* the lineup or photospread know which member of the lineup or photospread is the suspect; however, the person *administering or conducting* the lineup should *not* know. In addition, the eyewitness should be informed that the person administering the lineup does not know which person is the suspect in the case. This recommendation is designed to prevent the witness from looking for subtle clues or identifying information from the officer administering the lineup. Second, eyewitnesses should be clearly told that the suspect might *not* be in the lineup or photospread. Under these conditions, the witness will not feel compelled to make an identification if he or she does not believe the suspect is in the lineup. Third, the suspect should not stand out in the lineup or photospread as being clearly different from the distractors (the individuals who are not suspects), based on the eyewitness’s (or eyewitnesses’) previous description.

Fourth, a clear statement should be taken from the eyewitness at the time of identification, prior to any feedback from the police that would inform the witness whether he or she had chosen the “right” suspect. This last recommendation is based on the observation that witnesses are often susceptible to inadvertent or intentional communication about the suspect during or immediately after the lineup occurs. Findings from the white paper were incorporated into a 44-page government guide for law enforcement officers working with eyewitness identification (Reno, 1999). The guide provides very useful, detailed recommendations for specific procedures to be followed by all those involved in eyewitness identifications, and the well-informed police psychologist would be wise to be highly familiar with it.

## Summary and Conclusions

Investigative psychology is perhaps the newest area of specialization for forensic psychologists, having begun in 1985 with the work of David Canter in England. It focuses on identifying features of a crime and likely characteristics of its perpetrator. Investigative psychology also includes broader areas, such as psychological autopsies, the polygraph, and forensic hypnosis, all covered in this chapter. Essentially, we have included a variety of areas in which psychologists provide consulting services to law enforcement agencies in their investigations of crimes.

Profiling, though a relatively infrequent enterprise when conducted by forensic psychologists, has gained considerable media attention. We discussed profiling in three different contexts: criminal profiling, psychological autopsies, and geographical profiling. If done correctly, criminal profiling can provide statistical probabilities of features of an offender, but it is far from a foolproof procedure. Dynamic factors, both stable and acute, can wreak havoc with efforts to construct the “profile” of an offender. Perpetrators may change their procedures and techniques as they become more skilled and more daring. Psychological autopsies—more formally called reconstructive psychological evaluations—are performed after a person has died and the cause of the death is uncertain or equivocal. The psychologist conducting the autopsy tries to reconstruct the victim’s behavior and thought processes leading up to the death. This procedure is often used in cases of apparent but questionable suicide. Psychological autopsies are also used—though less frequently—in civil cases in an effort to determine whether a third party may have contributed to the death. For example, an employer may have failed to respond appropriately to signals of extreme emotional distress or threats of suicide. As yet, there is no established, standard method for conducting a psychological autopsy, and its validity has yet to be demonstrated.

Geographical profiling analyzes spatial characteristics of a crime along with behavioral characteristics of offenders deduced from the crime scene to yield probabilities of a perpetrator residing in a particular location. We described four “hunting patterns” that are examined and noted that researchers are now studying hunting processes as well as hunting patterns. Geographical profiling is used primarily to solve serial crimes, in which a pattern of offending occurs over time. It is more likely to yield

positive results when combined with criminal profiling, although we must caution that the scientific status of the latter remains in question.

We discussed some of the reasons profiling is difficult and often lacking in validity, despite its apparent increase among police agencies. Chief among these is the fact that much of human behavior is not consistent across different situations. Dynamic factors of an individual, particularly those that are acute—such as mood swings and drug-induced effects—contribute to this lack of consistency. In addition, crime scene evidence does not necessarily relate to specific psychological characteristics of the perpetrator. Although some professional profilers are cautious about the power of their predictions, others are too ready to rely on unsubstantiated assumptions, some of which are based on outdated interpretations of personality theory. In sum, profiling—though fascinating to the public—is an enterprise that must be approached with extreme caution, at least until research demonstrates that it has predictive validity.

Like profiling, the polygraph is not strictly an investigative technique in the narrow sense because it is used in a wide variety of criminal and civil contexts. In law enforcement, it is used primarily in the selection of candidates for law enforcement positions and much less in criminal investigation. Results from polygraph tests are not admitted into courts to be used against criminal defendants, but they have been allowed in some courts to support a defendant's contention that he or she did *not* commit the crime. It appears that the polygraph is also being used more extensively in counterintelligence and by federal agencies than it has been in the past. Like the other techniques discussed in this chapter, the polygraph has not garnered impressive research results with respect to reliability and validity. Nevertheless, some researchers do support its use in limited situations and when administered by highly trained polygraphers.

We ended the chapter with a discussion of forensic hypnosis and the construction of police lineups. Hypnosis is a controversial topic, particularly when used to elicit repressed memories of traumatic events in victims of crime. It may also be used to enhance recall of nonvictim eyewitnesses to a crime. Although the weight of the scientific evidence is still very much against its use, research over the past decade has begun to challenge early assumptions. In recent years, psychologists also have made significant research contributions relating to the construction and administration of police lineups. Some of their recommendations have been incorporated into government guidelines used by law enforcement officers nationwide.

## KEY CONCEPTS

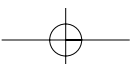
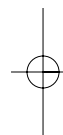
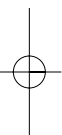
Acute dynamic factors	Commitment bias	Crime scene analysis
Autoerotic asphyxia	Confirmation bias	Criminal profiling
Behavioral Science Unit (BSU)	Contagion or copycat effect	Differential experience hypothesis
Cognitive-behavioral viewpoint	Control question technique (CQT)	Disorganized crime scene
	Countermeasures	Dynamic risk factors

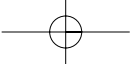


Employee Polygraph Protection Act	Nominal size (lineup)	Signature
Equivocal death analysis	Nomothetic approach	Stable dynamic factors
Functional size (lineup)	Nonhypnotic hyperamnesia	Staging
Geographical mapping	Organized crime scene	Static risk factors
Geographical profiling	Own-race bias (ORB)	Trans-situational consistency
Hypnotic hyperamnesia	Psychological autopsy	Trans-temporal consistency
Hypnotic trance theory	Reconstructive psychological evaluation	Trophy
Idiographic approach	Relevant/irrelevant question technique	Typology
Mixed crime scene	Show-up	Unconscious transference
Modus operandi (MO)		Undoing

## QUESTIONS FOR REVIEW

1. What three questions are central to the process of investigative psychology?
2. Distinguish between criminal profiling, crime scene analysis, and racial profiling.
3. How does the psychological autopsy differ from criminal profiling? What are the two basic types of psychological autopsy?
4. Distinguish between geographical profiling and geographical mapping.
5. According to Rossmo, what are the four "hunting patterns" of serial offenders?
6. Give at least three reasons why psychological profiling is so often inaccurate.
7. List any five findings from the research on the polygraph.
8. What are the advantages and disadvantages of using forensic hypnosis?
9. Contrast the hypnotic trance theory and the cognitive behavioral viewpoint on hypnosis.
10. What were the four recommendations made by researchers regarding lineups and photospreads in the Police Lineups White Paper?





# PART III

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# Psychology and the Courts

