The gathering of information for intelligence purposes often comes from interviewing a variety of individuals. Some, like suspects and captured prisoners, are individuals for whom the stakes are especially high and who might not be particularly cooperative. But information is also gathered from myriad individuals who have relevant facts to provide, and occasionally the smallest details can be important. In gathering this information from both groups of informants, investigators need to worry about memory distortion, especially the extent to which memories can be contaminated by poor questioning or other sources of postevent information. Moreover, they need to worry about the potential for poor methods and other forms of influence to create false confessions, thereby leading investigators astray. A third area in which psychological science can contribute is in the detection of deception. Recent science in these domains can improve the quality of information that investigators gather and the inferences that they draw.

**Keywords:** memory, interrogation, confession, deception, lying

In the summer of 2010, two citizens of Yemen were arrested on suspicion of preparing a terrorist attack after some strange items were discovered in their airline luggage. After all, not everyone travels with a cell phone taped to a bottle of Pepto-Bismol or three cell phones taped together. Not everyone travels with $7,000 in cash and heads to a final destination that is a terrorist breeding ground. Was this a dry run for a terrorist plot? Suspicious as this appeared, one day after the arrest, the men were released. Their records were clean, their explanations were accepted, and their case was lauded as an example of how the aviation security system works well (Hilkevitch & Skiba, 2010).

Had the Pepto-Bismol caper not been resolved so quickly, a number of things could have gone wrong. The Yemeni citizens could have provided erroneous information about their actions, their intentions, or peripheral matters. They could have given false information due not to deliberate lying but to faulty memory. It might have led investigators astray. The Yemeni citizens could have been interrogated in a way that led them to falsely confess to something they did not do. They could have been declared liars, when in fact they were telling the truth. In the years since the tragedies of September 11, 2001, psychological scientists have produced a great deal of research in these three domains (memory distortion, false confessions, and detection of deception) that is relevant to the gathering of intelligence in ways that increase the chances that things do not go wrong.

In this article, I review new basic research in these three areas that is relevant to the gathering of intelligence. In the United States, the intelligence establishment is vast. It consists of more than a dozen agencies employing some 100,000 people whose job it is to evaluate, integrate, and interpret information (Fingar, 2011). Although sometimes intelligence gatherers are sitting in vast open spaces listening with headphones to digitally recorded wiretaps (Rose, 2005) or are tracking suspicious financial movements (Finnegan, 2005), at other times they are out in the field talking to human beings (or gathering information from “the street”; Finnegan, 2005, p. 64). The post-9/11 research reviewed here is relevant to the latter type of intelligence gathering, and here I speculate about how this information might be useful to the intelligence community. The applicability of the research becomes more obvious when we recognize that it is not simply suspects or captured prisoners who are interrogated for intelligence purposes. These are individuals for whom the stakes are especially high and who might not be particularly cooperative. But information is gathered from all sorts of people who might have relevant facts to provide. When an analyst goes to Lockerbie, Scotland, to learn about the explosion of a Pan Am flight in 1988, to Istanbul to learn about the bombings of the city’s synagogues in 2003, to Russia to learn about the school massacre at Beslan in 2004, to Madrid to learn about the train bombing in 2004, or to Germany to learn more about key 9/11 terrorist Mohamed Atta, key information from nonsuspects is often sought. For example, in the case of Atta, interviews with other students at the German school that he had attended revealed that he had voiced violently anti-American opinions (Kean & Hamilton, 2004). And in the Madrid train bombing case, successful interviewing revealed that the bombers had parked their vans blocks from the station and carried those bombs to the trains by hand, a fact that has implications for design of protection of likely terrorist targets.

The Lockerbie tragedy is a good one for illustrating the complexities of interviewing and for showcasing the problem of postevent contamination of memory. The fol-
Following information can be found in the police reports, trial court opinion, and appellate court opinion in this case (see *Al Megrahi v. Her Majesty’s Advocate*, 2002). On December 21, 1988, Pan Am Flight 103 exploded over the Scottish city of Lockerbie. The 259 passengers and crew members who were on the plane were killed, as were 11 residents of Lockerbie, where the debris fell. At a trial held over 12 years later, the defendant, Abdelbaset al-Megrahi, was convicted, in large part on the basis of the eyewitness testimony of a Maltese shopkeeper named Tony Gauci. Al-Megrahi had allegedly purchased trousers, pajamas, and other clothing from Gauci at Mary’s House in Malta, sometime in late 1988. Those items were thought to be packed in the Samsonite suitcase that contained the explosives, which themselves were hidden in a Toshiba radio cassette player.

Gauci was first interviewed on September 1, 1989, nearly nine months after the clothing purchase. He remembered that the purchase had occurred one day in the winter of 1988 and that the purchaser was six feet or more in height, had a big chest and large head, was clean shaven, and spoke Libyan. Gauci would make a number of attempts to reconstruct the face and to select the man from photos. There were many viewings of photos, and only after two years did Gauci make a highly tentative identification of al-Megrahi. As late as April 1999, Gauci viewed a lineup and thought al-Megrahi looked most like the man, but he wasn’t sure. At trial in 2000, Gauci seemed to grow in confidence in his selection of al-Megrahi. His testimony about other key facts also changed at various points in time (e.g., testimony about the date of the clothing purchase and about the specific clothing that was purchased).

How might we understand these changes? It is clear that Gauci was exposed to numerous instances of postevent information, not the least of which was a magazine article that included an image of al-Megrahi and specifically linked him to the bombing. Postevent information is an important and relevant scientific topic that is discussed in detail below. Many people are aware and some are outraged by the fact that al-Megrahi was sent back to Libya on compassionate grounds because of advancing cancer. What is less well-known is that because of many of the inconsistencies and doubts in his case, the Scottish Criminal Cases Review Commission had expressed deep reservations about the conviction in the case and concluded that it may have been a miscarriage of justice (Adams, 2007; Oliver, 2007).

Gauci was a cooperative witness (some might say too cooperative). Some experts have argued that law enforcement is not very proficient at interviewing cooperative witnesses (Fisher, Ross, & Cahill, 2010), so imagine the even greater challenge of interviewing those who are not cooperative. Poor methods of gathering information can lead investigators astray, causing memory distortion, false confessions, and erroneous decisions about whether someone is deliberately trying to deceive.

**Interviewing and Interrogating People**

Today, a distinction is frequently made between interviews and interrogations (Redlich & Meissner, 2009). The distinction was brought to the attention of the scientific community in the late 1990s (Kassin, 1997) and was introduced to practitioners in a training manual (Inbau, Reid, Buckley, & Jayne, 2001). Interviews of witnesses or even persons of interest are often conducted in a nonaccusatory manner. In these cases, one must worry about the accuracy and completeness of the memories of interviewees and the preservation of their memories. New research on memory distortion, described below, is relevant.

Interrogations of suspects, on the other hand, are often conducted in a more coercive manner. (For a brief history of research on interrogation, see Brandon, 2011, this issue.) They might involve confrontation, in which the person is presumed guilty and sometimes given false evidence. Or they might involve minimization, in which a sympathetic interrogator attempts to gain the suspect’s trust and offers Justifications to minimize the crime and thereby elicit a confession. Here one must worry not only about the accuracy of memory but also about whether the interrogations themselves might lead to other problems, such as false confessions or erroneous inferences about lying and truth telling. New research on confessions and on detecting deception is described below. As Leo (2008) has noted, interrogation is a valuable and important resource, and “interrogation is necessary and thus here to stay” (p. 271). So we ought to maximize the chances that it is done with the “tripartite goals of protecting individual legal rights, checking unwarranted or overreaching state power, and promoting truth-finding” (Leo, 2008, p. 271). Whether the individuals being interviewed are witnesses or suspects, there are at least three important areas of recent research.
that can help maximize the accurate information and minimize the inaccurate information that is obtained. Although some useful information about interviewing techniques has been obtained from field research, archival research, and even case histories, experimental laboratory research has also contributed greatly to our understanding of how to properly gather information and which strategies to avoid.

Memory Distortion

When people experience an event, say a crime or an accident, they are sometimes exposed to new information after the event has occurred. Over the last three decades, an enormous literature has been devoted to the impact of that new information (Brainerd & Reyna, 2005; Frenda, Nichols, & Loftus, 2011; Loftus, 2005; Wright, London, & Waechter, 2010). The general finding is that after being exposed to misleading postevent information, people make errors even when trying hard to accurately report what they experienced. Postevent information can supplement their memory, or it can alter the memory. Some have argued that it invades the mind, like a Trojan horse, precisely because we do not detect its influence.

To illustrate how psychological scientists have studied the misinformation effect, I briefly present the typical experimental paradigm. Subjects come to the laboratory and witness a simulated event. It might be a violent crime or an automobile accident. Sometime later, some of the subjects are fed new, misleading information about the event, but others are not. In the final phase, subjects try to remember the original event as best they can. In one study (reviewed in Loftus, 2005), subjects saw a stimulated traffic accident and afterward received written information about the accident. Some subjects were misled about what they had seen. For example, a stop sign was referred to as a yield sign. Later, on the final test, when asked whether they originally saw a stop sign or a yield sign, those subjects who had been given the phony information tended to adopt it as their memory. They claimed to have seen a yield sign. Or when faced with a choice of scenes and asked to pick the one they had seen, they chose the scene with the yield sign. In some of the studies of the misinformation, very large deficits in memory occurred because of the misinformation, with memory accuracy frequently depressed by 30% to 40% (Loftus, 2005).

What types of errors have experimental subjects made in misinformation studies? They have recalled seeing non-existent items, such as broken glass or tape recorders. They have even recalled something as large and conspicuous as a barn in a bucolic scene that contained no buildings at all. They have recalled incorrect details about items that they did see. Just as the stop sign turned into a yield sign in the mind, so a clean-shaven man was remembered as sporting a mustache and an individual with straight hair was recalled as having curly hair after subjects were given misinformation to that effect. In short, misleading postevent information can alter a person’s recollection in powerful and predictable ways.

Postevent information can contaminate memory, even for highly important and arousing events. In one of the first studies to demonstrate this phenomenon, conducted prior to September 11, 2001, the memory of high-school students for a life-and-death situation was contaminated by postevent suggestion (Abhold, 1995). The students who participated in this study had attended a football game at which a player on the field went into cardiac arrest. Attempts to resuscitate the player appeared to fail, and many students thought he had died. (Actually, the player was later revived, but the students would not know this for some time.) Many students were highly upset at the time, as evidenced by their sobbing and screaming. Six years later, many of the students were interviewed, and some of them were exposed to misinformation about the traumatic event. In particular, they received a suggestion about there being blood on the player’s jersey when there had been none. More than a quarter of the students accepted the misinformation, thus demonstrating the experimental contamination of traumatic memory.

The experimental contamination of an upsetting memory was also demonstrated in a post-9/11 study that examined Russian subjects’ memories for a terrorist bombing that had occurred a couple of years earlier (Nourkova, Bernstein, & Loftus, 2004). Some of the subjects received the strong suggestion that they had seen a wounded animal in the attack and had mentioned it in an early report. Of those who received the suggestion, 12.5% fell for it, and some of these individuals even elaborated their accounts with sensory detail (e.g., “a ‘bleeding cat lying in the dust’”). These findings support the notion that even upsetting, highly arousing, or traumatic events are susceptible to suggestion and that memory for them is malleable.

Even trained soldiers undergoing naturally stressful experiences can have their memories tampered with. This has been shown in a series of studies of soldiers who attend “survival schools,” where they are trained to withstand the mental and physical stresses that they might experience if captured as prisoners of war. They experience mock POW camps, food and sleep deprivation, and intense interrogation. They are physically threatened and even assaulted. Their levels of stress hormone and heart rate reveal the intensity of the experience. And their memories are susceptible to all sorts of contamination, often leading to misidentification of the person who assaulted them and mistaken memory for other key details (Morgan et al., 2007; Morgan, Southwick, Steffian, Hazlett, & Loftus, 2011). Again, memories of stressful events are not immune from contamination, even in trained soldiers.

Once the misinformation effect had been identified, psychological researchers began to ask a number of questions. Chief among them were the following:

1. When are people especially prone to being influenced by misinformation? Conversely, when are they resistant to the effects of misinformation?
2. Are we all susceptible to misinformation effects? Are some types of individuals particularly susceptible to misinformation’s damaging influence on recollection?
New research on misinformation conducted since September 11, 2001, has expanded our ability to answer these questions.

One answer to the first question is that as time passes, memories fade and become especially vulnerable to the influence of misinformation. Put another way, the longer the time period between some key event and exposure to misinformation, the higher the chance that misinformation will be incorporated into a person’s memory. We have known this for some time (Loftus, 1979). Another important variable is the method by which a person is exposed to misinformation. People are especially likely to pick up information that is delivered to them via other witnesses or individuals (Wright et al., 2010).

One answer to the second question is that young children and the elderly are especially susceptible to misinformation (see Davis & Loftus, 2005; Otgaar, Candel, Smeets, & Merckelbach, 2010; Polczyk et al., 2004; Rodiger & Geraci, 2007). One recent project examined the capability of adolescents, who are among the most common victims and witnesses, to participate in the legal system (Wright et al., 2010). Their age, associated as it is with the onset of social anxiety, has made them an especially interesting group in which to examine memory conformity.

Individuals who tend to have dissociative experiences are more susceptible to misinformation (Hekkanen & McEvoy, 2002; Wright & Livingston-Raper, 2002). Dissociative experiences include driving to work and suddenly realizing one does not remember what happened on all or part of the trip and being unsure if one actually performed some act or only thought about doing so. Related to this finding is the notion of memory distrust. People who distrust their own memories have been found to be more susceptible to developing false memories from misinformation than have people who do not distrust their memories (van Bergen, Horselenberg, Merckelbach, Jelicic, & Beckers, 2011).

Temporary states, such as hypnosis, can lead to enhanced misinformation effects (Scoboria, Mazzoni, Kirsch, & Milling, 2002). Believing that one has consumed alcohol (even if the drink contained no alcohol at all) can magnify the misinformation effect (Assefi & Garry, 2003). People who have lower cognitive abilities are more susceptible to misinformation (Zhu, Chen, Loftus, Lin, He, Chen, Li, et al., 2010). People with certain personality characteristics, such as being high in cooperativeness, are especially susceptible to having their memories distorted by misinformation (Zhu, Chen, Loftus, Lin, He, Chen, Moyzis, et al., 2010).

The research on understanding memory distortion has been accompanied by a parallel enterprise that concerns discovering methods of enhancing the accuracy and completeness of information obtained from witnesses. There has been a wealth of research, for example, on the cognitive interview (CI) as a means of gathering information, largely from cooperative witnesses. The CI was developed in the mid-1980s by Geiselman, Fisher, MacKinnon, and Holland (1985); it incorporates a number of techniques derived from basic principles of cognitive and social psychology (e.g., encouraging witnesses to search through memory from different perspectives) designed to gather better information about past experiences. Many of the studies of the CI and refinements in methodology have been conducted post-9/11, and they have been amply reviewed in a recent article by Fisher, Milne, and Bull (2011). So, for example, work has been done on the development of a shortened, more efficient version of the CI for situations in which the longer version cannot readily be used (Dando, Wilcock, & Milne, 2009). Other work has shown that a self-administered form of the CI can be profitably used in special situations in which there may be a large number of witnesses, not all of whom can be interviewed right away (Gabbert, Hope, & Fisher, 2009). In general, these studies show that the CI draws out a great deal more information in criminal and noncriminal investigations than do more conventional interviewing strategies. There has been an especially favorable reaction to the CI among police forces around the world (e.g., England, Australia, Norway), where it has proved useful for interviewing cooperative witnesses and for other investigative interviews.

Understanding the conditions under which memory distortions occur and the types of misinformation that are most likely to influence people has important applications for intelligence gathering. First, investigators should be made aware of these phenomena and of how they can guard against the problem of mistaken or distorted memory. Four points are worth emphasizing:

1. People are routinely exposed to new information after some key events are over. Look for instances in which exposure to new information may have supplemented or altered an interviewee’s memory. People get information when exposed to the versions of others, when exposed to media coverage, and when interrogated in suggestive ways. Recognize that when a memory is relatively poor, that memory is even more susceptible to contamination.

2. When someone makes a claim, especially a disputed one, it is important to explore potential sources of suggestion. In the ideal world, one would know about the conversations, the media exposure, the films, and the interrogations by authorities that preceded particular disclosures of “memory.” Some false memories have been produced in psychotherapy that was aimed at excavating buried memories of trauma (Brainerd & Reyna, 2005; Campbell, 1998; Crews, 2006; McNally, 2003). Therapy records have provided valuable information about how these dubious memories evolved (Loftus, Paddock, & Guernsey, 1996). Harder to get at but still important are any inferences or postevent thoughts that might be a source of self-generated misinformation. Of course, the ideal of gathering information on these potential sources of suggestion sometimes comes head to head with privacy issues. When can we require that a potential suspect or witness, whose memory might be questionable, turn over diaries, e-mail correspondence, Internet searches, or psychotherapy records? This is the kind of balancing that Leo (2008) was referring to when he talked about needing to balance individual legal rights and the need for truth finding.
3. Keep in mind a primary lesson gleaned from research on memory distortion: Just because someone says it happened, just because the person is confident, just because the recollection is detailed, just because the person is emotional when describing it, does not mean it is true. False memories can be detailed and can be expressed with confidence and great emotion.

4. Be aware of a useful manual for training police on how to gather information. The recommendations in this manual are largely based on psychological science. The manual has been described as “a sophisticated training tool, including detailed lesson plans, illustrative slides, and a CD-ROM designed to ease the local police trainer’s work” (Doyle, 2005, p. 190). Called Eyewitness Evidence: A Trainer’s Manual for Law Enforcement, it was issued in September 2003. It can be found on the Office of Justice Programs/National Institute of Justice website (http://www.ojp.usdoj.gov/nij). Suggested procedures and reforms are largely based on eyewitness science showing that small changes in procedure can lead to important benefits for accuracy. Some of the reforms, which have already been adopted by a number of jurisdictions in the United States, are discussed by Wells, Memon, and Penrod (2006). One particular reform, use of the sequential lineup for identifying people whom a witness has encountered in the past, has been subject to multiple meta-analyses and thorough discussion (Steblay, Dysart, & Wells, 2011).

**False Confessions**

Those familiar with research on false confessions like to remind readers of the famous case that occurred a decade before 9/11, involving a female jogger who was beaten and raped in Central Park in New York. The victim survived, without any memory of the crime, and wrote a gripping book about her ordeal (Meili, 2003) with the jolting title of I Am the Central Park Jogger. Within two days of the attack, five Hispanic and African American teenagers were arrested on the basis of what have been called “police-induced confessions” (Kassin & Gudjonsson, 2004). Some 13 years later, another man came forward with accurate and corroborated knowledge that resulted in the convictions of the teenagers being overturned just one year after 9/11. So why did the teens confess to something that they seem clearly not to have done?

It is not only teens but also grown adults who falsely confess, as the famous “Norfolk Four” case reveals (Wells & Leo, 2008). Four innocent men confessed to the rape and murder of a Norfolk woman that occurred in 1997. DNA would ultimately point to the real perpetrator, yet some of the confessors have still not been freed. Media attention can be credited with exposing some of the poor treatment that the confessors received by police, prosecutors, and others. Such treatment helps us understand why people would confess to some horrible crime that they did not commit.

Even the best educated among us are not immune to the coercive tactics that can result in confession, as Thomas Butler, a well-respected researcher of bubonic plague at Texas Tech University, discovered (Piller, 2003). Butler went into his university laboratory one day in January 2003 only to find that 30 vials of Yersinia pestis (the bacterium that causes plague) had gone missing. He thought they might have been stolen and alerted the authorities. Investigators scoured the area looking for the missing vials, fearful that terrorists would get them and spread disease. Butler was interrogated intensively, on one occasion for 12 hours until 3:00 a.m. Under enormous pressure, exhausted from sleep deprivation, and having been falsely told that he had flunked a polygraph test, Butler changed his story and claimed to have accidentally destroyed the vials. His “confession” meant the community could rest assured that the plague was not in the hands of sinister people. Butler was eventually arrested and charged with, among other counts, lying when he originally claimed that the vials were missing and denying knowledge of their whereabouts. Later he would tell the press that he had been tricked into confessing by investigators. A Texas jury eventually acquitted Butler of lying but convicted him of a number of “add on” charges, such as misuse of funds (Miller, 2003). Assuming that his confession was false (which I believe to be the case), why did Butler confess? Did the coercive interrogation lead this intelligent, educated scientist to do so?

The literature on confessions is varied, consisting of case studies, archival data, and laboratory and field studies. Proven cases of false confession, such as those compiled and analyzed by Davis and Leo (2006) and Drizin and Leo (2004), are useful for generating hypotheses about what leads to false confessions. Experimental methods can supplement this work and provide information about causal links. In the experimental domain, long before September 11, 2001, the well-known computer-crash paradigm pioneered by Kassin and Kiechel (1996) was used to study experimentally induced false confessions. Subjects in that research worked on a computer-based task; they were firmly instructed never to hit the Alt key, as it would cause the computer to crash and the experiment to be ruined. Shortly after the computer task began, the computer crashed and the subject was accused of having hit the Alt key. Many subjects responded to the accusation by confessing to wrongdoing, and they were particularly likely to do so when told that an eyewitness had seen them hit the forbidden key. Many of those individuals who confessed demonstrated that they truly believed in their confession, as evidenced by the fact that they told another, seemingly unrelated individual that they had done so.

Since the early demonstrations, confession researchers have devised clever ways of getting people to confess to acts that were seemingly more serious than ruining a psychologist’s experiment. They have confessed, for example, to cheating on tests when in fact they did not (Russano, Meissner, Narchet, & Kassin, 2005). In the “cheating” paradigm, subjects are accused of providing help in solving a problem to a confederate after a clear instruction that the two must not collaborate. Many subjects have been led to falsely confess to providing such help. The cheating paradigm was a valuable addition to the confession literature in that it elicited confessions to an intentional (rather than
negligent) act that would have had some consequences for the subject.

Another clever paradigm for studying false confessions used tampered video evidence to lead people to claim they had committed an act that they did not commit, namely, that they had cheated during a psychological experiment (Nash & Wade, 2009). This was accomplished by asking subjects to participate in a computerized gambling task. Subjects answered general knowledge while betting fake money on their answers. If they answered correctly, a green tick mark appeared and they took money from the “bank”; if they answered incorrectly, a red tick mark appeared and they had to return money to the bank. Later they were accused of taking money when they should have returned it. Many confessed. Some subjects were exposed to a doctored video that depicted them committing the “crime” (taking money when a red tick mark appeared). This was a particularly powerful way of eliciting false confessions; almost all subjects who were exposed to the fake video confessed. The study has been described as “the first study to demonstrate the dangers of modern digital-manipulation technology when encouraging people to remember recent autobiographical experiences (Wade & Laney, 2008, p. 590).

Modern technology in general and digital media in particular already allow us to take representations of individuals and show them engaging in all sorts of behaviors (Bailenson & Segovia, 2010). Some research allowed subjects to watch themselves from the third-person perspective engaged in actions such as eating chocolate candy or baby carrots. These experiences affected how much food of various types the subjects later consumed. In other work, subjects watched themselves endorse a particular product; this affected how strongly they later felt about the product. And in yet other research, child subjects who watched themselves engaging in unusual actions (e.g., swimming with whales) were more likely to report false memories of these experiences. Bailenson and Segovia speculated that the media richness makes it harder to distinguish between an actual memory elicited by a true event and a false memory elicited by the mental image. As these technological advances become even more sophisticated, we might worry even more about how they might be used or misused in the intelligence-gathering enterprise.

In real-life cases, people falsely confess for many reasons (Meissner & Russano, 2003). Some people make a voluntary false confession without any coercion or pressure, perhaps for attention (as in the Lindbergh baby kidnapping or the JonBenét Ramsey case) or to protect someone else. Some never believe they committed the criminal or bad act but confess because they think it will lead to a less negative outcome than not confessing (“if you will just tell us you accidentally rather than deliberately set the fire, you can go home; otherwise, you’re going to prison for a very long time”). This is called a coerced-compliant false confession. Some people actually come to believe that they committed the act. This often occurs after false evidence is supplied, such as telling the accused “You flunked the polygraph” when in fact he or she did not (Schwartz, 2010).

This last type of false confession is called a coerced-internalized false confession. Bluffing can also increase the likelihood of false confessions (Perillo & Kassin, 2010). Here investigators pretend to have evidence without actually claiming that the evidence implicates the suspect. So, for example, an investigator may tell a suspect that blood or other biological evidence was collected and will be sent to a laboratory for testing.

Some groups of people, such as children, juveniles, and the mentally retarded, appear to be especially vulnerable to making false confessions (Gudjonsson & Sigurdsson, 2010; Redlich & Goodman, 2003). Policymakers need to be especially vigilant about the problem of false confession with these high-risk individuals.

A major development in the study of police interrogation and confession was the publication by the American Psychology–Law Society of a scientific review paper by Kassin et al. (2010). This was only the second such paper to be approved by the society in its 42-year history (Thompson, 2010). The paper represented not only the opinions of Kassin et al. but a consensus view of the members of the society. It underwent peer review, public review, and vetting by a scientific advisory board. Among its many insights was the strong belief that law enforcement should be videotaping interrogations as a way of documenting potential suggestion or coercion in interviewing. Some jurisdictions have actually mandated that suspect interrogations be taped; some have been doing so for quite a few years (Meissner & Kassin, 2004). There are obvious advantages to doing so, not the least of which is that the tape provides an accurate record of what transpired. The tape preserves information about whether the detectives intimidated the suspect or whether the details contained in the confession actually came from the suspect or were supplied to the suspect via the interviewer. There are added benefits: Taping might deter law enforcement from using psychologically coercive tactics and can also deter frivolous claims by the defense that such tactics were used when they were not.

Redlich and Meissner (2009) have identified a number of myths, misconceptions, or widely held beliefs about interrogation and false confessions that should be dispelled. Among these are (a) that false confessions do not happen or are extremely rare; (b) that only vulnerable people falsely confess; and (c) that the study of police interrogation and false confession is in its infancy. Another misconception is that suspects are sufficiently protected by their rights to silence and to a lawyer, because the truth is that many people—especially innocent ones—waive these rights (Kassin, 2008).

On the basis of what we now know about confessions, it has been suggested that government officials should seek corroboration for confessions. Proper analysis of the report that a suspect gives involves a number of key steps. First, what is needed is a determination of the conditions under which the report was made and, especially, whether coercion was involved. Next, what is needed is a determination of whether the report contains details that are accurate when compared to what is known about the event being
described. A confession is particularly valuable if it contains details that only the perpetrator could know rather than details that have been reported elsewhere. Finally, what is needed is a determination of whether there are aspects of the situation that would make an innocent person confess, such as isolation for prolonged periods, fatigue and sleep deprivation, and presentation of false evidence.

Detecting Deception

Anthropologist Rob Johnston, who analyzed the culture and activities of the intelligence community, argued that in many law enforcement functions outside of intelligence, intentional deception occurs but is treated as the exception. In the case of intelligence gathering and analysis, deception is the rule, at least as it applies to the information collected (Johnston, 2005, p. 35). If so, there would be great benefit in knowing whatever we can about the detection of deception, and here psychologists have made important recent contributions.

In the last 10 years, much has been written about the behaviors, both nonverbal and speech behaviors, that can be used by someone who wants to try to detect deception in another person. Since 9/11, there have been a number of excellent overviews of research on detecting deception (see, e.g., DePaulo et al., 2003; Sporer & Schwandt, 2007; Vrij, Granhag, & Porter, 2011). What the research has shown is that people are not good at detecting lies. A major reason in ordinary life is that people often do not want to find deception but would rather live in a rosier world where it seemingly does not exist. That reason probably does not apply as much to the intelligence community, which, one presumes, is greatly motivated to ferret out deception. But a second reason people are not good at detecting deception is that they rely on behaviors that are not useful or, worse, on behaviors that lead them astray. People think that liars will behave in particular ways, such as averting their gaze or fidgeting. But these cues are not reliable for detecting lies.

Clever experimental paradigms have been devised in the lie detection field that teach us about what people actually do when they deceive. Subjects are typically asked to tell the truth about some issue or to lie. They might tell the truth about a film they just saw, or they might lie about it. Or, more elaborately, some subjects actually engage in some act, such as going to a restaurant to have lunch, and other subjects commit a mock crime and pretend they were at the restaurant having lunch (Vrij et al., 2011). In one study, the subjects were passengers at an airport who either told the truth or lied about a trip they were about to take (Vrij, Granhag, Mann, & Leal, in press). Contrary to the beliefs that many laypeople hold about lying, in most of these situations, those who are lying do not show gaze aversion or fidget more than those who are telling the truth.

What is particularly troubling about this example of a mismatch between popular belief (that liars look away) and scientific truth (liars do not look away more than truth tellers) is that it can lead to serious repercussions for those cultural or ethnic groups that engage in more gaze aversion in their day-to-day lives. For example, African American citizens show more gaze aversion than their Caucasian counterparts do (Johnson, 2007). People from Turkey and Morocco who are living in the Netherlands show more gaze aversion than comparable Dutch-born citizens do (van Rossum, cited in Vrij et al., 2011). Think of the trouble that can brew when a Caucasian detective interviews an African American or Moroccan citizen and interprets gaze aversion as evidence of lying. Awareness of these cross-ethnic or cross-racial misinterpretations can hopefully mitigate this sort of trouble.

If gaze aversion and fidgeting are not the way to go, the literature on detecting deception happily does reveal that some speech cues are diagnostic of deception. One recommendation is to use particular interviewing approaches that are focused on gathering information rather than on accusing someone of wrongdoing. In the information-gathering style of interviewing, witnesses are asked for detailed information about their activities using open-ended questions (e.g., “What did you do yesterday after you left work at 5:00 p.m.”?). The accusatory approach confronts the witness with suspicions (“You seem like you’re deliberately not telling me something”). The information-gathering approach is superior in that it leads to a larger body of information that can be used later to compare with other evidence or to check for inconsistencies (e.g., Vrij, Mann, Kristen, & Fisher, 2007). Yet another recommendation is to ask questions that are not likely to be anticipated by the person being interviewed. When the witness claims to have been eating dinner with a friend at some critical point in time, he might be asked, “Who finished their meal first, you or your friend?” Liars are less likely to say “I don’t know” to these unexpected questions, possibly because they fear that failure to provide some answer would look suspicious.

Several new approaches to improving the detection of deception involve the development of techniques that can “outsmart” the liar. One approach involves withholding known event (crime) facts from a suspect (as opposed to disclosing the facts right away) in order to trap the suspect in inconsistencies (Hartwig, Granhag, Stromwall, & Vrij, 2005). So, for example, the police might deliberately not disclose the presence of fingerprints until after the suspect asserts that he or she has never been to the crime scene. Another approach involves increasing the difficulty of the interview. The reasoning here is that lying is cognitively effortful; if interviewees increase the difficulty of the interview, it will make things especially difficult for liars and will make detection of their lying easier. The theory is that inducing cognitive load causes behaviors in an interviewee that can be useful in the detection of deception. Some support for this strategy can be found in a study in which people were forced to recall events in reverse order (Vrij et al., 2008).

A major problem for those who wish to catch liars is that some people can soon begin to believe that their lies are true; when this happens, they might not experience the emotions (e.g., fear or guilt) that could accompany some acts of deception. If they come to develop a belief that their lie is true, they could be called “honest liars.” In some
recent research people started off lying, but their lies later became true for them (Merckelbach, Jelicic, & Pieters, 2011). Subjects in this research were asked to lie about having certain physical symptoms, such as having trouble concentrating. Later on, the subjects were asked to report their symptoms truthfully. Even though they were trying to be honest, those who had lied in the past reported more concentration problems than those who had not. This problem speaks to the practical situation that occurs when people feign symptoms in legal cases to reap a larger verdict. But it also poses a special challenge to people who want to detect deception, for the deception has been turned into a sort of truth. Finding signs that would be diagnostic of this situation is a challenging problem for future research.

In the meantime, the deception researchers are turning their attention to an issue that is important for national security, namely, how to spot lies about future actions or intentions. When someone reports that he or she crossed a national border for a vacation rather than for nefarious reasons, how can one decide whether this represents the truth? In their excellent overview of research on deception, Vrij et al. (2011) prompted readers to recall the 9/11 terrorists who were seen smiling and chatting with airport staff despite the hatred they undoubtedly felt toward the targets of their intended violence. Can we devise ways of identifying unusual behavior among would-be passengers that could indicate an intention to cause harm to airliners and their passengers? The Transportation Security Administration (TSA) is, of course, deeply interested in this issue (Hilkevitch & Skiba, 2010). Society should greatly value research on the ways we can detect such planned and intended, but not yet committed, criminal acts. As they collectively search for techniques for detecting malintent, or the intent or desire to cause harm, policymakers need to be careful not to let urgency lead them to accept methods that are unsupported by good science. A recent article in Nature highlighted several TSA programs for detecting malintent. A program called Screening Passengers by Ob- servation Technique (SPOT) is designed to identify people who could pose a threat to airline passengers. Another program, called Future Attribute Screening Technology (FAST), has passengers walking through a portal as sensors monitor their vital signs for malintent. As of this moment, evidence for the efficacy of these programs appears to be utterly lacking (Weinberger, 2010).

**A Word About Torture**

The recent release of legal memos detailing coercive interrogation techniques used with individuals suspected of terrorism has fueled considerable discussion of the use of what are sometimes called “enhanced interrogation tech- niques” designed to gather information from those sus- pects. These techniques include the repeated induction of shock, stress, and anxiety, and they include torture (O’Mara, 2009). In thinking about these issues, scientists have questioned the legal definition of torture, pointing out that it is truly a subjective judgment involving speculations about the severity of pain (Nordgren, McDonnell, & Loe- wenstein, 2011). People who are experiencing pain are more likely than those who are not in pain to classify a particular tactic as torture (and declare it unethical). And yet policymakers who decide that something is or is not torture are typically not experiencing pain, nor have they ever experienced the kinds of tactics that they may be approving. It is more than tempting to suggest that policy- makers should consider including “experienced” individu- als in their decision-making process. An important perspec- tive would be added by individuals such as the former Marine Quang X. Pham. His memoir (Pham, 2005) de- scribes his experiences as a Marine in Southern California, where he went through a two-week training program at the Survival, Evasion, Resistance, Escape (SERE) school. The SERE experience is intended to train members of the military on how to avoid capture as a prisoner of war and to survive in captivity. During an intense interrogation, Pham was slapped until stars appeared in his vision. He bit his gums and his mouth filled with blood. And he endured the waterboard torture. As Pham recounted, “I left the SERE school a few pounds lighter, with a swollen mouth and an incredible fear of being captured by the enemy” (Pham, 2005, p. 194). Indi- viduals who have endured these experiences might be well suited for helping make decisions about what constitutes torture. At the same time, the lack of solid evidence that these coercive or “enhanced” interrogation techniques make people reveal information that they would not other- wise reveal and the concern that these techniques may do the opposite of what they are intended to do should be added to discussions of the ethical and legal controversies these techniques provoke.

It should be kept in mind that ethical and legal con- troversies surround other specialized techniques that do not involve physical pain or torture. For example, some Cana- dian police agencies have been using the “Mr. Big tech- nique” (Smith, Stinson, & Patry, 2010). In this technique, undercover police operatives develop a friendship with a suspect that might include a good deal of eating, drinking, and spending money. The suspect eventually has the oppor- tunity to meet the big boss (Mr. Big) and is led to confess to a crime after being provided with a variety of phony inducements. Scholars have rightfully worried that the effectiveness of the Mr. Big technique has not been supported by solid science, that its features create fertile ground for suspects to provide false confessions, and that even these types of techniques, which do not involve tor- ture, need our continual scrutiny.

**Final Remarks**

Those involved in intelligence gathering ought to be mind- ful that memory distortions are widespread. False confes- sions happen, and the current collection of known cases appears to represent the tip of the iceberg, according to experts in the field (e.g., Drizin & Leo, 2004; Redlich & Meissner, 2009). People lie and they tell the truth, and it is not easy to distinguish which is which. Gathering informa- tion from a broad range of sources on a given topic is important so that the sets of facts, biases, and differences in
recall can be differentiated. From a composite selection of information garnered from a broad range of sources, one can construct a version of events that might be closer to ground truth than the version gained from using just one or two sources—especially if those two sources are not independent and may have contaminated one another. Moreover, analysts and others who interpret data should keep these memory distortion phenomena in mind so they can assign discounted probabilities to information that might be distorted owing to the circumstances under which it was collected, the personal characteristics of the individual providing the information, and other factors that we know are associated with memory problems.

Psychological science has much to contribute to the intelligence community, whether it is understanding and combatting suggestive influences that may be used against individuals or developing methods that lead to more productive intelligence gathering. Science continues to change and develop, as new knowledge and discoveries are made. Thus, attending to and learning from the science require our continual vigilance.

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