

THE LAWYER'S GUIDE TO THE

FORENSIC SCIENCES



CHAPTER 21

Memory in the Criminal Courts

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A. INTRODUCTION

The criminal justice system is heavily reliant on human memory as a source of evidence: a convenience store is robbed at gunpoint and the cashier is asked to identify the suspect from a photo array; the sole witness to a kidnapping tries to remember how the abduction was accomplished; a family doctor is informed by one of his patients of a sexual assault that occurred two decades earlier. Unlike the items on the shelves of the evidence room (e.g., weapons, clothing, documents), memories are intangible. They exist in the witness's head. Their accuracy depends, in part, on how thoroughly the initial perceptions were encoded, how much time has passed, and how those memories were elicited from the witness by investigators. Unlike a video, our memories are reconstructive and selective. We add, delete, and modify information in various ways to make sense of past experiences. Sometimes we suffer from what is known as source amnesia—an inability to distinguish information acquired at the time of an experience from information that may be added later. Sometimes we confuse actual events with imagined ones. While some autobiographical memories may be quite accurate and relatively permanent, research has shown that they are often distorted or embellished, and may be modified over time.

Inaccurate accounts of past experiences can come about because we unwittingly reconstruct an event based on what we think we know, rather than on actual memories. The act of remembering takes place against a backdrop

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of prior knowledge that influences and filters what gets into memory. We organize and understand new information through associations with what we already know. Cognitive psychologists sometimes refer to this background information as a conceptual framework, or schema. Many aspects of our day-to-day experiences are redundant. For example, restaurants contain tables, chairs, waiters, and menus, and we go to a restaurant with the expectation that we will get food there. Similarly, dentists' offices contain a waiting room, a receptionist, hygienists, and so on. We know what to expect when we visit these places because of our generic knowledge about such situations. Schemas provide a summary of the redundancies and help us interpret and organize our knowledge. Schemas are efficient. They let us interpret, store, and retrieve more information than we could possibly deal with otherwise. This efficiency, however, has costs. Witnesses relying on their memory can make errors; details fade over time. Witnesses may unknowingly compensate for gaps in memory by making inferences. Because these inferences are unconscious, when witnesses produce inaccurate accounts, they may not be lying; they may simply be mistaken.

This should not be taken to imply that memory is routinely capricious and unreliable. In general, our memories are fairly accurate. Many elements of past experiences are usually preserved with good fidelity; however, memory mistakes do occur and they can be large, undetectable, and subjectively compelling. The passage of time provides increasing opportunities for memories to be altered or lost altogether. Even under ideal circumstances, the most conscientiously candid and forthright witness is not going to be completely accurate. In this chapter, we provide an overview of specific aspects of memory that have long-standing forensic significance. Errors in memory do not happen haphazardly. Certain factors are known to compromise memory's reliability. By understanding how memory works, the courts will be in a better position to know when (or when not) to have confidence in a witness's account.

D. EYEWITNESS TESTIMONY

In 1989, Anthony Hanemaayer of Toronto pled guilty to an attempted rape that he did not commit. The victim's mother had identified him as the assailant. She was adamant that he was the person she had seen. Hanemaayer, who was eventually exonerated,¹ later stated that if he had been a juror,

¹ R. v. Hanemaayer, 2008 ONCA 580.

he would have believed the witness who identified him. Eyewitnesses are frequently not just mistaken, they are confidently mistaken, and a confident witness is compelling to jurors. In 2012, the U.S. National Registry of Exonerations summarized 873 DNA exonerations over the previous twenty-three years. In 80 percent of the sexual assault cases and in 81 percent of the robbery cases, mistaken eyewitness identification contributed to the false conviction.²

Eyewitnesses identify suspects in a variety of contexts. Some identifications are driven by the eyewitness, rather than the police. For example, an eyewitness might see the suspect in a public place and call the police. Some eyewitnesses conduct an active search for the suspect on social media and may contact the police if they find him or her. In many cases, the police conduct an eyewitness identification procedure, such as a showup (where the police bring the suspect to a place where they expect to find witnesses), a photo array, or a live lineup (although live lineups are rare). In laboratory research on eyewitness identification, the investigator has the important benefit of knowing whether an identification is correct or incorrect, and this knowledge allows the investigator to classify identifications by accuracy. A correct identification occurs when an eyewitness positively identifies the suspect and the suspect is in fact the perpetrator. A false identification occurs when the eyewitness identifies an innocent suspect as the perpetrator. When the eyewitness expresses the belief that the suspect in question is not the perpetrator, this decision is either a correct rejection (i.e., the suspect is in fact not the perpetrator) or a miss (i.e., when the suspect actually is the perpetrator). In photo arrays, an eyewitness might also make a "filler identification." A filler is a photo of a person who is known to not be the perpetrator but has been included in the photo array together with the suspect. Filler identifications are errors but they do not lead to arrests. Classification of identification decisions in this manner allows researchers to examine the influence of various factors on the different types of errors in eyewitness identifications. Research on eyewitness identification does not focus on general identification accuracy rates *per se*, but rather on the influence of specific factors on identification accuracy.

² Samuel R. Gross & Michael Shaffer, "Exonerations in the United States, 1989–2012" (2012) *The National Registry of Exonerations* 103, online: www.law.umich.edu/special/exoneration/Docs/exonerations_us_1989_2012_full_report.pdf; see also Andrew M. Smith & Brian L. Cutler, "Identification Procedures and Conviction of the Innocent" in Brian L. Cutler, ed., *Reform of Eyewitness Identification Procedures* (Washington, DC: American Psychological Association Press, 2013) 3.

1) General Impairment Factors

General impairment factors refer to conditions at the scene of the crime that can impair identification accuracy. These factors include: (1) the characteristics of the witness (for example, eyewitnesses make more false identifications when identifying members of a different race¹ and children make more false identifications than adults),² (2) concealment measures by the perpetrator (for example, eyewitnesses are more likely to make mistakes when the perpetrator makes efforts to disguise or hide facial features),³ (3) short exposure times,⁴ (4) high stress levels during the crime,⁵ (5) conspicuous weapons (the “weapon focus effect”),⁶ and (6) a prolonged interval between the crime and the identification.⁷

2) Suspect Bias Factors

Suspect bias factors refer to aspects of the identification test itself. They are called suspect bias factors because they bias the witness toward identifying a suspect. Selecting fillers who do not resemble the eyewitness’ description of the perpetrator increases the risk that an eyewitness will use deduction, rather than memory, to figure out which photo in the array is the suspect. Selecting fillers based on the witness’ description of the perpetrator reduces the risk of false identification.⁸ Other procedures that can guard against suspect bias factors include the use of sequential presentation, blind administration procedures, and cautionary instructions to the

eyewitness. Sequential presentation carries a lower risk of false identification relative to simultaneous presentation.¹¹ Blind administration—where the investigator conducting the photo array does not know the identity of the suspect—obviates the inadvertent communication of the suspect’s identity to the eyewitness, thus reducing the risk of false identification.¹² Instructions that explicitly warn the eyewitness that the perpetrator may not be in the photo array reduce the risk of false identification.¹³ Many of these research findings have been incorporated into recommended eyewitness identification procedures in Canada.¹⁴

3) Self-Assessment Factors

The most common self-assessment factor is confidence. Confident eyewitnesses are persuasive. Individuals who express their belief with very high confidence will appear knowledgeable and credible. A considerable body of psychological research shows, however, that even under ideal circumstances, confidence is only moderately related to accuracy.¹⁵ Although highly confident eyewitnesses are more likely to be accurate than less confident eyewitnesses, there is much room for error. Some eyewitnesses will express high levels of confidence in false identifications, as we noted above in *R. v. Hanemanayer*. The association between confidence and accuracy is further attenuated by general impairment factors.¹⁶ Other self-assessment factors include the quality of their original viewing conditions, the strength of memory, and witnesses’ beliefs in their ability to identify the perpetrators. Research has shown that these self-assessments

- 3 Christian A. Meissner & John C. Brigham, “Thirty Years of Investigating the Own-Race Bias in Memory for Faces: A Meta-Analytic Review” (2001) 7 *Psychology, Public Policy, and Law* 3.
- 4 Alejo Freire et al., “Lineup Identification by Children: Effects of Clothing Bias” (2004) 28 *Law and Human Behavior* 339.
- 5 J.K. Mansour et al., “Impact of Disguise on Identification Decisions and Confidence with Simultaneous and Sequential Lineups” (2012) 36 *Law and Human Behavior* 513.
- 6 Brian H. Bornstein et al., “Effects of Exposure Time and Cognitive Operations on Facial Identification Accuracy: A Meta-Analysis of Two Variables Associated with Initial Memory Strength” (2012) 18 *Psychology, Crime & Law* 473.
- 7 K.A. Deffenbacher et al., “A Meta-Analytic Review of the Effects of High Stress on Eyewitness Memory” (2004) 28 *Law and Human Behavior* 687.
- 8 Jonathan M. Rawcett et al., “Of Guns and Geese: A Meta-Analytic Review of the Weapon Focus Literature” (2013) 19 *Psychology, Crime & Law* 35.
- 9 Peter N. Shapuro & Steve D. Penrod, “Meta-Analysis of Facial Identification Studies” (1986) 100 *Psychological Bulletin* 139.
- 10 Gary L. Wells, Sheila M. Rydell, & Eric P. Seclian, “The Selection of Distractors for Eyewitness Lineups” (1993) 78 *Journal of Applied Psychology* 835.

- 11 Nancy K. Streibay, Jennifer E. Dysart, & Gary L. Wells, “Seventy-Two Tests of the Sequential Lineup Superiority Effect: A Meta-Analysis and Policy Discussion” (2011) 17 *Psychology, Public Policy, and Law* 99.
- 12 S.M. Greathouse & M.B. Kovera, “Instruction Bias and Lineup Presentation Moderators: The Effects of Administrator Knowledge on Eyewitness Identification” (2009) 33 *Law and Human Behavior* 79.
- 13 Nancy K. Streibay, “Lineup Instructions” in Cutler, ed., *Reform of Eyewitness Identification Procedures*, above note 2 at 65.
- 14 FPT Heads of Prosecution Committee Working Group Report, *Public Prosecution Service of Canada, The Path to Justice: Preventing Wrongful Convictions. Report of the Federal/Provincial/Territorial Heads of Prosecutions Subcommittee on the Prevention of Wrongful Convictions* (2011), online: www.ppsc-sppc.gc.ca/eng/pub/ptj-spj/index.html.
- 15 Siegfried D. Sporer et al., “Choosing, Confidence, and Accuracy: A Meta-Analysis of the Confidence-Accuracy Relation in Eyewitness Identification Studies” (1995) 118 *Psychological Bulletin* 315.
- 16 *Ibid.*

are malleable and can be influenced by procedures and information acquired after the identification has been made.¹⁷ For example, when Timothy McVeigh rented the truck he used in the Oklahoma bombing, there were three employees at the rental agency. Two of them thought McVeigh had been alone, but after discussing it with the third witness, they came to believe he had had an accomplice. The social cost of disagreeing with a peer can change people's accounts and change their memories.¹⁸

Suggestive eyewitness identification procedures can inflate both eyewitness confidence and self-assessment, thus making the identification appear more believable. It is for this reason that modern eyewitness identification practices include the documentation of the eyewitness' confidence rating immediately after the identification has been made and before any feedback is received.¹⁹

In some cases, suspect identifications are made by an earwitness (identification is made on the basis of the suspect's voice). Research on earwitness identification suggests that voice identification is difficult and accuracy rates are low.²⁰ As with eyewitnesses, earwitnesses can be influenced by general impairment and suspect bias factors. Earwitness confidence is also not strongly related to accuracy.²¹

C. CHILD WITNESSES

Children often participate in legal proceedings. Sometimes, they are victims of alleged sexual assaults for which there is no physical evidence or other witnesses. The child's report is thus the sole source of information. How reliable are children's memories? There is no simple answer to this question because the age of the child, the nature of the event, the retention interval, and a host of other considerations all factor into reliability.

- 17 Nancy K. Stebbins, Gary L. Wells, & Amy B. Douglass, "The Eyewitness Post Identification Feedback Effect 15 Years Later: Theoretical and Policy Implications" (2014) 20 *Psychology, Public Policy, and Law* 1; Gary L. Wells & Deah S. Quinlivan, "Suggestive Eyewitness Identification Procedures and the Supreme Court's Reliability Test in Light of Eyewitness Science: 30 Years Later" (2009) 33 *Law and Human Behavior* 1.
- 18 Daniel B. Wright et al., "When Eyewitnesses Talk" (2009) 18 *Current Directions in Psychological Science* 174.
- 19 Andrew M. Smith & Brian L. Cutler, "Identification Test Reforms" in Cutler, ed., *Reform of Eyewitness Identification Procedures*, above note 2 at 203.
- 20 A. Daniel Yarmey, "Earwitness Speaker Identification" (1995) 1 *Psychology, Public Policy, and Law* 792.
- 21 *Ibid.*

That said, it is clear that even quite young children (e.g., four years old) are capable of accurately remembering personal experiences over long time periods.²² The reliability of their reports has more to do with the manner in which they are interviewed than to any inherent shortcomings of their memory capacity. Children are, however, vulnerable to suggestion, coercion, and social pressure. Unless interviews with children are conducted carefully and thoughtfully, the quality of the information obtained may be compromised. In 1992, several children in a family-run daycare centre in Martensville, Saskatchewan, made allegations of sexual and physical abuse against the staff members. Some of the accusations were grotesque and implausible. One boy claimed he had seen a caretaker cut off a boy's nipple and eat it. A few weeks later, the accusations expanded to include police officers who were investigating the earlier accusations. Eventually, all but one of over one hundred charges were dismissed, with the Saskatchewan Court of Appeal noting that:

[C]oercive or highly suggestive interrogation techniques can create a serious and significant risk that the interrogation will distort the child's recollection of events, thereby undermining the reliability of the statements and subsequent testimony concerning such events.²³

Similar incidents are chronicled in Ceci and Bruck's groundbreaking work.²⁴ Prompted partly by these high profile cases, extensive research was conducted to address the psychological factors that affect the reliability of children's reports. This research, which continues, has provided the foundation for the development of evidence-based interviewing practices that minimize the risks of contaminated accounts.²⁵

Children can easily be influenced, consciously or otherwise, to develop false memories of experiences that they have only imagined. They

- 22 Carole Peterson, "Children's Autobiographical Memories Across the Years: Forensic Implications of Childhood Amnesia and Eyewitness Memory for Stressful Events" (2012) 32 *Developmental Review* 287.
- 23 R. v. Sterling, [1995] S.J. No. 612 at para. 277 (C.A.).
- 24 Stephen Ceci & Maggie Bruck, *Jopardy in the Courtroom* (Washington, DC: American Psychological Association 1995); see also Stephen Ceci & Maggie Bruck, "Suggestibility of the Child Witness: A Historical Review and Synthesis" (1993) 113 *Psychological Bulletin* 493.
- 25 Deborah Poole & Michael Lamb, *Investigative Interviews of Children* (Washington, DC: American Psychological Association, 1998); see also Michael Lamb et al., *Tell Me What Happened: Structural Investigative Interviews of Child Victims and Witnesses* (Hoboken: Wiley, 2008) [Lamb et al.].

will sincerely believe that they have experienced the events in question. Certain types of questioning may create an especially high risk that child complainants will come to believe they have experienced events that never occurred.²⁶ As noted in Section A, above in this chapter, both children and adults often suffer from source amnesia, where information that has been overheard or imagined becomes confused with information obtained from actual experience.

Research shows unequivocally that when people are exposed to misinformation or suggestive questioning, they may fabricate an experience and remember it as real. For example, children readily incorporate overheard and fictitious rumours into their own autobiographical memory.²⁷ This can happen even in the absence of any suggestive questioning, let alone coaching. In the cited study, preschoolers participated in a magic show at their child-care centres. During the show, Mumford the Magician failed at pulling a rabbit out of his hat. Immediately following the show, some of the children overheard a scripted conversation between one of the teachers and another adult in which the adult confederate stated that the magician had failed because the rabbit was loose in the school rather than in the magician's hat. Another group of children were the classmates of those who overheard the rumour. It was expected that some of these children would receive indirect information about the alleged lost rabbit through naturally occurring conversations with their classmates who overheard the conversation. A third group of children (witnesses) saw a live rabbit eating carrots in their classroom. Children who heard the rumour were as likely as those who actually saw a loose rabbit to report having seen it. Those children who heard the rumour from their classmates were as likely to report having seen the rabbit as were those who heard the rumour directly from the adult confederate. The rumour-exposed children's "experiences" were embellished with many elaborative details—more details, in fact, than those who had actually seen the rabbit. This is strong evidence that narrative detail is not an indication of accuracy when children have been exposed to suggestive influences. The findings also demonstrate that envisioning an event can create a belief in its historical authenticity. Through a process called imagination inflation,

an imagined event can take on an aura of subjective reality over time.²⁸ The "memory" can be vivid and can seem real to the person recounting it. Obviously, the children in the Mumford study could not recall the source of their "memory."

Informed by research conducted at the National Institute of Child Health and Human Development in Bethesda, Maryland, a "best practices" protocol now exists that provides guidance for how to interview child witnesses. The NICHD protocol is in widespread use in North America,²⁹ the United Kingdom,³⁰ Israel, Australia, and parts of Europe. Research has repeatedly shown that open-ended prompts are more likely to elicit accurate information than more focused recognition prompts.³¹ The protocol provides guidelines for interviewers that specify the types of questions and prompts that are appropriate for children, while limiting potential opportunities for leading questions. The full protocol can be found in Lamb et al.³²

Recent research in Australia has evaluated the effectiveness of an interactive interviewer training system that provides NICHD protocol training by means of computer-assisted learning activities that train interviewers to elicit important evidential details from child witnesses in a narrative format.³³ Using a pre-test/post-test design, the researchers measured: (1) the proportion of interviewer question types, (2) the proportion of desirable interviewer behaviours, (3) adherence to the interview protocol,

26 Maryanne Garry & Devon L. Polaschek, "Imagination and Memory" (2000) 9 *Current Directions in Psychological Science* 6.
 29 The NICHD protocol is used in the Toronto Police College's child interviewing course.
 30 Great Britain, Home Office, *Achieving Best Evidence in Criminal Proceedings: Guidance for Vulnerable or Intimidated Witnesses, Including Children* (London: Home Office Communication Directorate, 2002).
 31 Karja Erdmann, Renata Volbert, & Claudia Böhm, "Children Report Suggested Events Even when Interviewed in a Non-Suggestive Manner: What Are the Implications for Credibility Assessment?" (2004) 18 *Applied Cognitive Psychology* 589; David J. La Rooy, Deirdre Brown, & Michael Lamb, "Suggestibility and Witness Interviewing Using the Cognitive Interview and NICHD Protocol" in Anne M. Ridley, Fiona Gabbert, & David J. La Rooy, eds., *Suggestibility in Legal Contexts: Psychological Research and Forensic Implications* (West Sussex: Wiley, 2013); L. Melnyk, A.M. Crossman, & M.H. Scullin, "The Suggestibility of Children's Memory" in Michael P. Toglia et al., eds., *The Handbook of Eyewitness Psychology, Volume 1: Memory for Events* (Mahwah, NJ: Lawrence Erlbaum Associates, 2007) 473.

32 Lamb et al., above note 25.

33 Mairi S. Benson & Martine B. Powell, "Evaluation of a Comprehensive Interactive Training System for Investigative Interviewers of Children" (2015) 21 *Psychology, Public Policy, and Law* 309.

26 See, for example, Sena Garven et al., "More than Suggestion: The Effect of Interviewing Techniques from the McMartin Preschool Case" (1998) 83 *Journal of Applied Psychology* 347.

27 Gabrielle F. Principe et al., "Believing Is Seeing: How Rumors Can Engender False Memories in Preschoolers" (2006) 17 *Psychological Science* 243.

(4) interview length, and (5) the quality of evidential information sought. They found clear support for the utility of the training system, with some evidence supporting sustained performance one year later.

D. REMEMBERING CONVERSATIONS

The child complainant is sometimes unable to testify in a trial for which the child is the only witness (e.g., a sexual assault case). When this happens, hearsay witnesses (e.g., a parent or a teacher) might testify about the abuse that the child disclosed to them. The adult's testimony is offered in lieu of the child's direct testimony, as in the case of *R. v. Khan*.³⁴

Prior to *Khan*, there was a long legal history of rules against admitting hearsay testimony and various reasons for wanting to prohibit it. For example, the defendant cannot confront the witness. False accusations are assumed, by some, to be less likely in the context of face-to-face confrontations. Hearsay obviates cross-examination of the complainant, it denies the jury access to the demeanour of the witness, and it may suggest guilt by implying that the child needs protection from the defendant. There is more room for error in hearsay evidence. The hearsay witness must have accurately heard, interpreted, remembered, and reported the declarant's original statements. These are all legitimate concerns, but there are compelling reasons for making exceptions to the hearsay prohibition. It is difficult to prosecute sexual abuse cases. The act is covert. There are frequently no witnesses and no physical evidence. The case may depend exclusively on the child's disclosure and, for understandable reasons, children may be intimidated, confused, and embarrassed about having to describe sexual events. Also, their memories may have deteriorated. The admissibility of their out-of-court statements may be crucial for a successful prosecution.

Psychological studies help us understand the reliability of hearsay evidence. When a child's disclosure has been obtained during the course of an interview by an investigator, or during an exchange with a parent, we would like to be able to rule out the possibility that the child's report was the consequence of leading questions and/or social pressure. Can hearsay witnesses provide accurate accounts of how the child's statements were elicited? In a study by Lamb and colleagues,³⁵ forensic interviewers

took verbatim notes while conducting their interviews, and these notes were compared to transcripts of the electronic recordings. There was an under-reporting of both the details provided by the children and of the interviewers' utterances. The notes rarely contradicted the audio recording; however, the interview structure was incorrectly characterized. Details provided by the children were routinely misattributed to more open-ended, rather than focused, questions. The interviewers unconsciously downplayed their own role in extracting the information that was subsequently treated as if it had come unprompted from the children. Warren and Woodall³⁶ reported similar findings.

Another study addressed mothers' memories of exchanges that they had with their four-year-old children.³⁷ Mothers were asked to talk with their children about the activities of a play session that the mothers had not attended. Three days later, the mothers were asked to recall the details of their earlier exchanges. The details that were recalled were accurate, albeit incomplete. Most important, however, was that they had trouble remembering whether the children's statements were prompted or spontaneous, and whether utterances were spoken by themselves or by their child.

Cauchi et al.³⁸ asked experienced child abuse investigators to take notes as they listened to transcripts of interviews that were read aloud at a normal speech rate. Only 61 percent of abuse-related details were recorded in the notes. Furthermore, the note takers clearly gave preference to documenting the answers compared to writing down the interviewers' questions. Questions were less likely to be recorded (or recorded accurately) than were the children's responses.

Such studies demonstrate that hearsay statements, whether from memory or from notes, are likely to obscure the extent of interviewer training. Leading and suggestive questions are under-reported. Consequently, reports that may have been contaminated by interviewer effects are likely to be presented as reliable. Not just lay witnesses, but trained professionals as well, are insensitive to the extent to which their own questions may contain

34 *R. v. Khan*, [1990] 2 S.C.R. 531.
35 Michael Lamb et al., "Accuracy of Investigators' Verbatim Notes of Their Forensic Interviews with Alleged Child Abuse Victims" (2000) 24 *Law and Human Behavior* 699.

36 Amye R. Warren & Cara E. Woodall, "The Reliability of Hearsay Testimony: How Well Do Interviewers Recall their Interviews with Children?" (1999) 5 *Psychology, Public Policy, and Law* 355.

37 Maggie Bruck, Stephen Ceci, & Emmett Francoeur, "The Accuracy of Mothers' Memories of Conversations with their Preschool Children" (1999) 5 *Journal of Experimental Psychology: Applied* 89.

38 Rita T. Cauchi, Martine B. Powell, & Carolyn H. Hughes-Scholes, "A Controlled Analysis of Professionals' Contemporaneous Notes of Interviews about Alleged Child Abuse" (2010) 34 *Child Abuse & Neglect* 318.

the information that is subsequently attributed to the child respondent. These data demonstrate unequivocally the importance of an electronic record of child interviews.

E. MEMORY DISTRUST

The Reid Technique³⁹ is an interrogation technique in widespread use in North America. The procedure is guilt presumptive. Its purpose is to elicit a confession from a suspect who is purportedly “known” or strongly suspected to be guilty. In the course of eliciting the desired confession, the interrogator may inform the suspect that there is ample proof of his guilt and that his culpability has been determined beyond the shadow of a doubt. These assertions are repeated often, with unwavering confidence on the part of the investigator. It may also be implied that failure to admit guilt will make the consequences of the inevitable conviction worse. In addition to the forceful accusations of guilt, the investigator often claims to have foolproof corroborative evidence by way of witnesses, DNA, or fingerprints. Although the popularity of the Reid Technique may be waning in Canada,⁴⁰ thousands of police officers have been trained to use it, thus Reid-induced confessions will not disappear overnight.

The effects of such false or exaggerated “evidence” can have the effect of shaking the witness’ confidence in their own memory. They may believe that the “incriminating evidence” is as irrefutable as the interviewers have made it out to be. The ensuing doubts can trigger cognitive dissonance accompanied by a reimagining of what might have happened. As a result of imagination inflation, over time the events that the interviewers have been advocating can take on an aura of subjective authenticity. In other words, the witness’ original memory can be altered, possibly permanently. Increasing concern has been expressed by legal scholars regarding the role of memory distrust in the development of false confessions.⁴¹ Re-

cently, Shaw and Porter⁴² attempted to implant false memories of criminal activity in a sample of university students, using suggestive memory-retrieval techniques. Participants were interviewed three times at weekly intervals for approximately forty minutes each time about one true and one false memory from their early teens. The researchers had enlisted the help of the participants’ parents or caretakers to establish the legitimacy of the true memory. The false memory events were invented, but the participants were informed that their parents had confirmed their validity. For both true and false memories, some contextual cues were supplied by the researchers (e.g., the city that the participant lived in, the participant’s age, the season when the crime took place). Of the criminal false memory group, 70 percent developed memories of having committed a serious crime. Accounts of true and false memories (criminal and non-criminal) were similarly complex, detailed, and multisensory. For example, one girl reported throwing a rock at another girl on the playground and knocking her unconscious because the latter had called her a slut. Another participant described the police coming to his house to investigate a complaint. He recalled that both officers were male, one Caucasian, the other Hispanic. In a third instance, a boy described being frightened by a large brown and black German shepherd dog when walking with his mother. The dog had been standing at the end of a driveway in which a boat had been parked. The dog had brown eyes and was wearing a collar. It had been a windy day. What is remarkable about these recollections is that none of them were true. Beyond informing the students of the nature of the to-be-remembered event (e.g., assault with a weapon, attacked by a dog), the researchers did not provide any details of the events.

When people are encouraged to recall an inaccessible memory, they may try to retrieve it by forming a mental image of the event. Repeatedly imagining a non-experienced event can cause imagination to be confused with reality and, as Shaw & Porter pointed out, “. . . what something *could* have been like can turn into elements of what it *would* have been like, which can become elements of what it *was* like.”⁴³ The memory retrieval techniques used in their study are commonplace in some police interrogation

39 Fred E. Inbau et al., *Criminal Interrogation and Confessions*, 5th ed. (Burlington, MA: Jones & Bartlett Learning, 2013).

40 Sigrid Forberg, “Conversations over Confessions: Investigative Interviews Focus on Information” (2015) 77 *RCMP Gazette* 26.

41 Miriam S. Gohara, “A Lie for a Lie: False Confessions and the Case for Reconsidering the Legality of Deceptive Interrogation Techniques” (2005) 33 *Portland Urban Law Journal* 100; Gisti H. Gudjonsson et al., “The Role of Memory Distrust in Cases of Internalised False Confession” (2014) 28 *Applied Cognitive Psychology* 336; see also Richard Ofshe, “Coerced Confessions: The Logic of Seemingly Irrational Action” (1989) 6 *Cultic Studies Journal* 1.

42 Julia Shaw & Stephen Porter, “Constructing Rich False Memories of Committing Crime” (2015) 26 *Psychological Science* 291.

43 Quin M. Chrobak & Maria S. Zaragoza, “When Forced Fabrications Become Truth: Causal Explanations and False Memory Development” (2013) 142 *Journal of Experimental Psychology: General* 827; Shaw & Porter, above note 42, at 298.

procedures.⁴⁴ These research findings support the worries of critics who are concerned about the risks of false confessions that can arise from aggressive, deceptive, and confrontational interrogation tactics.

F. MEMORIES FROM THE DISTANT PAST

The 1990s saw an outbreak of sexual abuse allegations made by adults who recalled having been abused years earlier. Because there is no statute of limitations for indictable offences in Canada, charges can be brought against an alleged abuser years (sometimes decades) after the abuse is said to have occurred. In some instances, recovered memories are the only evidence against the accused. Some therapists believe that a patient's distress may be symptomatic of earlier abuse, the memories for which have been "repressed" in response to the trauma. They might ask patients complaining of mood disorders, eating disorders, or interpersonal problems, for example, if they can recall ever having been abused. These therapists might use what we now know to be highly suggestive techniques to help patients "recover" memories of earlier sexual abuse. These techniques can include hypnosis, guided-imagery (where patients shut their eyes and imagine scenarios suggested by the therapist), "journaling" about the abuse and reading it aloud, or interpreting dreams and body memories (interpreting physical symptoms like rashes or gagging as reflections of earlier abuse).⁴⁵ Therapists may also recommend group therapy where patients share their abuse histories and offer support to one another.

Some therapists used popular books that lacked scientific rigour as recommended reading for their patients. *Uncovering the Mystery of MPD*⁴⁶ is one such example. MPD (Multiple Personality Disorder) diagnoses increased dramatically in the 1990s. In his book, Friesen states that "97% of MPD patients have suffered serious abuse at an early age. Most of them

have been abused sexually."⁴⁷ However, there are no references to indicate the sources of these statistics. *The Courage to Heal: A Guide for Women Survivors of Child Sexual Abuse* was another popular book used as recommended reading by some therapists in the 1990s. It suggested that:

If you are unable to remember any specific instances . . . but still have a feeling that something abusive happened to you, it probably did . . . If you think you were abused and your life shows the symptoms, then you were . . . Writing gives you the opportunity to define your own reality. . . . You [the therapist] must believe your client was sexually abused even if she sometimes doubts it.⁴⁸

Again, no research was cited to support the authors' claims. These types of suggestions pose the risk of encouraging people to recall instances of abuse that may not have occurred. While it is possible that such interventions are useful for people who have been abused, the problem lies in their potential to create vivid, salient, richly detailed, but false memories in people with no history of abuse. Repeatedly imagining a non-experienced event can inflate confidence that the event occurred.⁴⁹ Memory researchers were skeptical that people could completely forget traumatic experiences.⁵⁰ The evidence suggests that when a person has been traumatized, they are likely to struggle with intrusive, uncontrollable remembering, not forgetting.⁵¹ Thus, a controversy arose. Based on case studies of their patients, many therapists believed that traumatic memories could be repressed, sometimes for years or decades, and recovered

⁴⁷ *Ibid.* at 42.

⁴⁸ Ellen Bass & Laura Davis, *The Courage to Heal: A Guide for Women Survivors of Child Sexual Abuse* (New York: Perennial Library, 1988).

⁴⁹ Lyn M. Goff & Henry L. Roediger, "Imagination Inflation for Action Events: Repeated Imaginings Lead to Illusory Recollections" (1998) 26 *Memory & Cognition* 20-33.

⁵⁰ David S. Holmes, "The Evidence for Repression: An Examination of Sixty Years of Research" in Jerome L. Singer, ed., *Repression and Dissociation: Implications for Personality Theory, Psychopathology, and Health* (Chicago: University of Chicago Press, 1995) 85; J.D. Read, "The Recovered/False Memory Debate: Three Steps Forward, Two Steps Back?" (1999) 7 *Expert Evidence* 1.

⁵¹ Deborah Davis & Elizabeth F. Loftus, "Expectancies, Emotion and Memory Reports for Visual Events" in James R. Brockmole, ed., *The Visual World in Memory* (New York: Psychology Press, 2009) 178; Elke Geraerts, "Cognitive Underpinnings of Recovered Memories of Childhood Abuse" in Robert F. Belli, ed., *True and False Recovered Memories: Toward a Reconciliation of the Debate* (New York: Springer, 2012) 175; Mark L. Howe & Lauren M. Knott, "The Fallibility of Memory in Judicial Processes: Lessons from the Past and Their Modern Consequences" (2015) 23 *Memory* 653; Richard J. McNally, "Debunking Myths About Trauma and Memory" (2005) 30 *Canadian Journal of Psychiatry* 817.

⁴⁴ Steven Drizin & Richard Leo, "The Problem of False Confessions in the Post-DNA World" (2004) 82 *North Carolina Law Review* 891; Saul M. Kassir et al., "Police-Induced Confessions: Risk Factors and Recommendations" (2010) 34 *Law and Human Behavior* 49.

⁴⁵ Deborah Davis & Elizabeth F. Loftus, "The Scientific Status of 'Repressed' and 'Recovered' Memories of Sexual Abuse" in Jennifer L. Skeem, Kevin S. Douglas, & Scott O. Lilienfeld, eds., *Psychological Science in the Courtroom: Consensus and Controversy* (New York: Guilford Press, 2009) 55; D. Stephen Lindsay & J. Don Read, "Psychotherapy and Memories of Childhood Sexual Abuse: A Cognitive Perspective" (1994) 8 *Applied Cognitive Psychology* 281.

⁴⁶ James G. Friesen, *Uncovering the Mystery of MPD* (Eugene, OR: Wipf and Stock, 1997).

through therapeutic intervention.⁵⁵ Social scientists, however, wondered if some recovered memories were false memories that had been inadvertently implanted in therapy.⁵⁵ Social scientists conducted laboratory investigations to explore the topic further and found that memories could be implanted quite easily, with some people being especially suggestible.⁵⁴ Researchers could not ethically set out to implant memories of abuse in their participants, but they designed studies to determine whether more benign historical memories could be cultivated. In 1995, Loftus and Pickrell⁵⁵ sought to implant a memory of being lost in the mall around the age of five, crying, being rescued by an elderly person, and being reunited with parents. Twenty-four people between the ages of eighteen and fifty-three were asked to try to remember four childhood memories (three of which were true, as reported by a parent or close relative of each participant). Two interviews about the four events were conducted over a period of weeks and 25 percent of participants came to recall most or all of the lost in the mall event as true.⁵⁶

Other studies have demonstrated that illusory memories can be induced for having spilled a bowl of punch on the bride's parents at a wedding,⁵⁷ being attacked by a vicious dog,⁵⁸ and being hospitalized overnight for an ear infection.⁵⁹ Such studies typically find that false memories can be implanted in a quarter to a third of participants.⁶⁰ Lindsay and colleagues introduced photographs into their study of implanted memories, based on the practice of some therapists who have encouraged their patients to

look at old photographs to assist them in recovering "repressed" memories of childhood sexual abuse.⁶¹ They had participants try to remember three childhood incidents: two true incidents and one false event ("slimming" the teacher's desk in grade one or two). Half were given class photos from the year the events were said to have occurred. Among participants in the non-photo group, almost 50 percent developed partial or complete memories for the false event after the second interview, while the rate was 78 percent for the photo group. The authors speculated that the photograph may have enhanced the credibility of the suggested false event.

The Paul Ingram case in the United States provides a dramatic illustration of how false memories can be created.⁶² After repeated, aggressive, suggestive police questioning, as well as hypnosis, Ingram came to believe he had sexually abused his children. The accusations included ritualistic, satanic abuse, and murders (although no bodies were ever found). Richard Ofshe, a prominent researcher in false confessions literature, set out to demonstrate that these memories could have been implanted. He told Ingram about an incident of abuse that was not included in the allegations against him. After thinking and praying over the course of a day, Ingram not only agreed that he had committed the fictitious crime, he provided a richly detailed account of the event.⁶³

Trying to evaluate the veracity and accuracy of memories of childhood sexual abuse is a contentious task. We do not want to deny the existence of sexual abuse that did occur, but we do not want to wrongly convict innocent people accused of abuse.⁶⁴ Richard McNally and colleagues sought to determine if true and false traumatic memories might be distinguished by the physiological arousal experienced by the people recounting them. To this end, they interviewed a sample of people who reported having been abducted by aliens—a highly improbable traumatic experience. They found that the physiological reactions and emotional self-reports of participants recounting alien abductions were indistinguishable from those accompanying reports of other traumatic experiences (e.g., military combat).⁶⁵

52 J.L. Alpert et al., "Final Conclusions of the American Psychological Association Working Group on Investigation of Memories of Childhood Abuse" (1998) 4 *Psychology, Public Policy, and Law* 933; Richard J. McNally, *Remembering Trauma* (Cambridge: Belnap Press/Harvard University Press, 2003).

53 Howe & Knorr, above note 51; Elizabeth F. Loftus, "The Myth of Repressed Memory and the Realities of Science" (1996) 3 *Clinical Psychology: Science and Practice* 356.

54 Read, above note 50.

55 Elizabeth F. Loftus & Jacqueline E. Pickrell, "The Formation of False Memories" (1995) 25 *Psychiatric Annals* 720.

56 *Ibid.*

57 Ira E. Hyman, Troy H. Husband, & F. James Billings, "False Memories of Childhood Experiences" (1995) 9 *Applied Cognitive Psychology* 181.

58 Stephen Porter, John C. Yule, & Darin R. Lehman, "The Nature of Real, Implanted, and Fabricated Memories for Emotional Childhood Events: Implications for the Recovered Memory Debate" (1999) 23 *Law and Human Behavior* 517.

59 James Ost, Alan Costall, & Ray Bull, "A Perfect Symmetry? A Study of Retractors' Experiences of Making and then Repudiating Claims of Early Sexual Abuse" (2002) 8 *Psychology, Crime & Law* 155.

60 Davis & Loftus, above note 51.

61 D. Stephen Lindsay et al., "True Photographs and False Memories" (2004) 15 *Psychological Science* 149.

62 Lawrence Wright, *Remembering Satan* (New York: Knopf, 1994).

63 Richard Ofshe & Ethan Watters, *Making Monsters: False Memories, Psychotherapy, and Sexual Hysteria* (Berkeley: University of California Press, 1994).

64 Alan D. Gold, *Expert Evidence in Criminal Law: The Scientific Approach*, 2d ed. (Toronto: Irwin Law, 2009).

65 Richard J. McNally et al., "Psychophysiological Responding During Script-Driven Imagery in People Reporting Abduction by Space Aliens" (2004) 15 *Psychological Science* 493.

The weight of the scientific evidence clearly indicates that corroboration is vital in cases of recovered memories of sexual abuse. Both the Canadian Psychological Association⁶⁶ and the Canadian Psychiatric Association⁶⁷ have policy statements warning of the dangers of convicting someone based solely on memories recovered in therapy.

1) Recommendations

In 1998, several prominent memory researchers collaborated to form the American Psychological Association Working Group on Investigation of Memories of Childhood Abuse. Their conclusions are as follows:⁶⁸

- 1) Controversies regarding adult recollections should not be allowed to obscure the fact that child sexual abuse is a complex and pervasive problem in America that has historically gone unacknowledged.
- 2) Most people who were sexually abused as children remember all or part of what happened to them.
- 3) It is possible for memories of abuse that have been forgotten for a long time to be remembered.
- 4) It is also possible to construct convincing pseudo-memories for events that never occurred.
- 5) There are gaps in our knowledge about the processes that lead to accurate and inaccurate recollections of childhood abuse.

Lindsay and Read⁶⁹ outlined the factors to be considered when trying to determine the accuracy of recovered-memory reports:

- the presence/absence of converging evidence
- how the memories came about (the less evidence of suggestive memory-recovery work, the greater the confidence)

66 Canadian Psychological Association, "Policy Statement: Convictions Based Solely on Recovered Memories" (1998), online: www.cpa.ca/aboutcpa/policystatements/#convictions.

67 Stella Blackshaw et al., "Position Statement of the Canadian Psychiatric Association: Adult Recovered Memories of Childhood Sexual Abuse" (1996) 41 *Canadian Journal of Psychiatry* 305.

68 Alpert et al., above note 52.

69 D. Stephen Lindsay & J. Don Read, "The Recovered Memories Controversy: Where Do We Go from Here?" in Graham Davies & Tim Dalgleish, eds., *Recovered Memories: Seeking the Middle Ground* (New York: Wiley, 2001) 71.

- the nature and clarity of the memories (with more credence given to detailed, integrated recollections than to vague feelings)
- the likelihood of the alleged events being forgotten if they had actually occurred (e.g., when and how often the abuse is said to have occurred, the probability that the person would have encountered reminders, the overall memorability of the alleged events)
- the plausibility of having memories to recover (e.g., less credence given to reports of events said to have occurred before two years of age)
- the base rate of the alleged type of abuse

Claims of recovered memories became much less common after the 1990s. Some people who brought charges against an alleged abuser later retracted their claims.⁷⁰ Some people who had been accused of abuse based on memories recovered in therapy brought successful lawsuits against the therapists.⁷¹ Despite great advances in our understanding of recovered memories in recent years, it appears there may still be a split between social scientists and therapeutic practitioners. Recent surveys have revealed that the majority of practitioners: (1) believe that memories are often repressed, and (2) believe that repressed memories can be accurately retrieved through therapeutic intervention.⁷² Social scientists would likely consider these claims contentious in view of the findings of memory research conducted over the past thirty years.

G. CONCLUSION

As we mentioned at the outset, our brains are not repositories of the video stream of life. Despite popular beliefs, we do not store our experienced life events as intact replications that can be accessed and replayed on demand. Decades of psychological research on human memory have demonstrated that remembering is very much a reconstructive process. Subjectively, it may seem like we are watching a movie, but the picture that we observe is a creation of our own making. Notwithstanding the scientific evidence, the "memory as video" belief is widespread. In recent

70 Ost, Costall, & Bull, above note 59.

71 Jeffrey A. Mullins, "Has Time Rewritten Every Line? Recovered-Memory Therapy and the Potential Expansion of Psychotherapist Liability" (1996) 53 *Washington and Lee Law Review* 763.

72 Howe & Knorr, above note 51.

surveys, half (50 percent) of the respondents agreed that "human memory works like a video camera, accurately recording the events we see and hear so that we can review and inspect them later."⁷³ Commenting on the impact of suggestion on the creation of false memories, Wells and Loftus⁷⁴ cautioned that the extant research "should give pause to investigators and others who think that they are extracting recalcitrant, accurate memories from witnesses and suspects by using techniques that resemble the ones that psychologists have studied."

- 73 Daniel J. Simons & Christopher F. Chabris, "What People Believe About How Memory Works: A Representative Survey of the U.S. Population" (2001) 6 *PLoS One* e22757; Daniel J. Simons & Christopher F. Chabris, "Common (Mis)Beliefs About Memory: A Replication and Comparison of Telephone and Mechanical Turk Survey Methods" (2012) 7 *PLoS One* e51876.
- 74 Gary L. Wells & Elizabeth F. Loftus, "Eyewitness Memory for People and Events" in Randy K. Otto & Irving B. Weiner, eds., *Handbook of Psychology*, Vol. 11: *Forensic Psychology*, 2d ed. (Hoboken: Wiley, 2013) 617 at 624.