The Memory Conundrum: How Social Conditions and Misinformation Effect Eyewitness Memory-- Part One

By Debra L. Reilly and Julia N. Reilly

As new findings on the malleability of memory continue to develop, it is vital to reevaluate societal and legal systems deemed to be sufficient. Much attention has been paid to how the pitfalls of memory affect the criminal justice system. However, this article seeks to understand how the social conditions of memory affect a different area of law: impartial workplace investigations. This study is important to the legal field because, similar to criminal law, employment-related decisions can have detrimental consequences for individuals, such as a permanently damaged reputation and loss of wages.

Impartial workplace investigations are not immune to the social conditions that contaminate memory. In fact, a witness’ memory can be altered by various means, and even the neutral investigator can be a key source of contamination. Therefore, certain aspects of workplace investigations need to be revisited to account for new findings on memory, such as the pre-investigation process, reliance on credibility assessments, and a research-based approach to interviewing. This article is part one of a two-part article regarding the social conditions of memory and its effect on workplace investigations. Part Two will appear in the next issue of the AWI Journal.

Introduction

“I know it was him! I remember,” may be more complicated than originally thought, due to recent research on the sociability and malleability of memory. While memory is commonly thought of as a “mental video recorder,” Elizabeth Loftus, a cognitive psychologist and a leading expert on human memory, has reported on a “growing body of research” that “memory more closely resembles a synthesis of experiences than a replay of a videotape.”

Several influences allow memories to change, such as: imagination, leading questions, media, and listening to misinformation from others. Memories are vulnerable to “post-event information” (such as details, ideas, and suggestions) which can end up being integrated into a person’s “original” memory and shift the way a person believes an event occurred. This fault in memory can have severe consequences in our legal system (including in workplace investigations), such as, false accusations and wrongful convictions, which often are based on eyewitness testimony. This article will explore the effects of the social conditions of memory on “neutral” and “unbiased” workplace investigations.

Role of Workplace Investigators

Workplace investigations play a crucial role in identifying, understanding, and addressing allegations of workplace conflict, discrimination, harassment, and other misconduct. A workplace investigation occurs when an employer, either internally or through an outside investigator, engages in fact-finding to determine whether allegations of misconduct have occurred. Fairness and neutrality are keys to the effectiveness and success of workplace investigations. Workplace investigators are tasked with reaching factual findings, which could have a lasting impact on an employer’s and/or employee’s reputation and career. Therefore, the nature of workplace investigations is built on the foundation that workplace investigators are able to make impartial and unbiased findings of fact. However, as

2 Ibid.
5 Ibid.
will be demonstrated, ample opportunity exists for implicit bias and misinformation to seep into the investigative process.

One role of the workplace investigator is to be the “fact-finder.” An investigator is similar to a jury as the fact-finder in a jury trial wherein assessing the credibility of witnesses and evaluating the weight of evidence is imperative to reach a correct final conclusion. Similarly, credibility assessments are an important function of a workplace investigator. The investigator must make credibility determinations regarding the witnesses and the evidence, and ultimately, decide whether “more likely than not” reasonable grounds exist to believe a witness and the facts discovered. (Part Two of this article will discuss credibility assessments in more detail.)

Effective and thorough workplace investigations are vital to protecting an employer against liability. The U.S. Supreme Court ruled that in sexual harassment litigation, employers may escape liability for the improprieties of their employees by responding promptly to complaints of misconduct with a workplace investigation, and must follow the investigation with “swift” corrective action. According to the Equal Employment Opportunity Commission (EEOC), an effective investigative process is “prompt, thorough, and impartial,” and protects confidentiality. Courts recognize that employers, who have taken an adverse action against an employee found to have engaged in misconduct, can be protected against a discrimination claim by that employee. The court or jury will review the adequacy of the investigation process, so a well-documented investigation containing a credibility assessment and findings of fact is a way in which an employer can demonstrate to the jury that it engaged in an effective and impartial investigation, thus eliminating the employer’s liability. However, many factors could contaminate an “impartial” workplace investigation.

Misinformation Effect

Memory is malleable and susceptible to contamination from social conditions. Uruguayan novelist, Eduardo Galeano, described memory as “born every day, springing from the past, and set against it.” Memory can be scrambled unintentionally, often occurring when a person is in the process of trying to retrieve a memory, retell a story, or listen to another person recall his or her account of the event. The process of a witness hearing misinformation, incorporating those details into his or her own memory, and resulting in a change of perception of the event, is known as the “misinformation effect.”

Loftus conducted a study of memory as a “constant restructuring process,” and examined the effects of exposure to misinformation on memory accuracy. In the study, participants watched a video of a mock crime and were asked to read one of three versions of a misleading article, containing differing degrees of misinformation—20 percent, 50 percent, and 80 percent, respectively. The participants then completed a memory test, rated the credibility of the misinformation source, and estimated their own memory performance. Loftus and her fellow researchers examined five effects of exposure to misinformation: (1) whether increasing the amount of misinformation to true information negatively impacts memory accuracy; (2) how sensitively participants monitor the accuracy of the misinformation

---

7 Ibid.
15 Ibid.
source; (3) whether the perceived credibility of the misinformation source attempts to balance the relations between misinformation exposure and memory accuracy; (4) whether perceived source credibility leads to improvement of future source monitoring; and (5) the accuracy of the participants’ self-assessment of their own memory performance. Studying these five factors allowed the researchers to gather further support of the negative impact of misinformation on the accuracy of memory and investigate factors that could contribute to resistance to misinformation.

When misinformation is recalled instead of the details that actually occurred, due to the source of misinformation being regarded as original memory details, it is referred to as a “source misattribution error.” The study on the effects of exposure to misinformation on memory accuracy revealed that participants who received an article with 80 percent misinformation provided a smaller proportion of correct responses, and a higher proportion of misled responses to misinformation than participants in the 20 percent condition. The researchers suggest that the high rates of misinformation may have disturbed participants’ cognitive ability by challenging them to sort through high rates of misinformation, and the “cognitive load may have made them more vulnerable to the misinformation.” On the other hand, participants who received a high amount of misinformation were more skeptical of the credibility of the source, which led to an increase in source monitoring and resulted in a significant decrease of the misinformation effect. Exposure to misinformation can contaminate and alter an individual’s recounting of an event, which can lead to devastating consequences resulting in incorrect eyewitness testimonies. The effects of perceived credibility of a source and source monitoring in the context of a workplace investigation will be discussed later in this article.

Although the misinformation effect is widely established in the social psychology community, debate still exists about the “fate” of the original memory representation following exposure to misinformation. Over several decades of research and studies, Loftus concludes that when misinformation is recalled in the recounting of an event, substitution has occurred. In other words, misleading information permanently replaces original information. However, some researchers argue that misinformation does not impair retrieval of original memories; but rather, it influences the account of a witness who did not encode original detail, or simply forgot the detail over time. No consensus exists on misinformation’s role in memory impairment. Whether misinformation exposure permanently impairs the original memory, it is evident that witnesses can report misinformation that is suggested to them.

Zaragoza and Lane conducted a study to answer the question: Do subjects come to believe that they actually remember seeing the suggested details they report? The researchers found that subjects exposed to misleading suggestions came to believe that they actually remembered seeing the suggested information. Zaragoza and Lane concluded that access to “familiarity information” is automatic and unintentional, whereas recalling source information and source monitoring requires controlled processing. Although debate continues on the condition of the original memory after misinformation, Zaragoza, Lane, and Loftus all agree that misinformation can be recalled in the recount of an event.

16 Ibid.
19 Ibid, pp. 344.
20 Ibid.
23 Ibid.
24 Ibid.
26 Ibid.
27 Ibid.
28 Ibid.
due to witnesses believing that they truly recall the suggested information. Therefore, witnesses may be confident in recalling their memory because they believe that they actually witnessed the suggested information. Misinformation can be supplied to a witness via “social contagions” in several ways, for example, recounts of an event by other witnesses, biased social media, and even the investigator.29

Social Contagion: Misinformation from Other Witnesses

When an unusual event occurs, it generates conversation among witnesses and bystanders. Post-event information has the ability to distort a witness' original memory, and, unfortunately, listening to the recount of an event from others can be filled with new observations and information. Speakers can mislead listeners about the past, and change existing memories of listeners, a process referred to as “social contagion” or “memory conformity.” Bennett reports on witness memory conformity studies that establish “that discussions between co-witnesses have great potential to influence the testimony of all witnesses, with far reaching consequences.”30 Koppel and Hirst conducted a study to determine the effect of listening to others “remember” on subsequent memory; the experiment consisted of a speaker and listener.31 The speaker selectively remembered a previously studied narrative story as the other participant listened. In one condition, the speaker was an “expert” on the story, and in the other condition, the speaker’s familiarity to the story was equivalent to the listener’s familiarity with the story.

As the researchers predicted, perceived expertise of the speaker heightened the level of social contagion. The mean proportion of social contagion events recalled by listeners of the so-called “experts” on the story was .28, compared to only .08 of listeners of “non-experts” retelling the story, which demonstrates that listeners are more susceptible to their memories being altered if the listener perceived the speaker as an expert.32 The researchers then sought to test whether social contagion varied based on the listener’s trust in the speaker’s memory. They tested this effect by observing a conversation between two participants; one was assigned the baseline story to study, and the second was given a variant. Half of the participants were assigned as “warned” participants, and the other half were “non-warned” participants—meaning that before the participants were instructed to meet with their partner to discuss the story, the “warned” participants were given the following warning: “The story you have read before watching the film may have been slightly different from your partner’s version.” The film was given as a distractor task in between reading the story and discussing it with a partner. The researchers found that social contagion decreased as the trust in the speaker’s memory decreased. Koppel and Hirst’s (2014) findings demonstrate that the social relationship between the speaker and listener is one factor in influencing social contagion.33

Discussions between witnesses may not only contaminate a memory, but it may also significantly boost a witness’ confidence in his or her memory representation because it has been “confirmed” by another witness.34 Expertise and trust, as analyzed in Koppel and Hirst’s study, are relevant to the workplace investigator because two employees recounting an event are less likely to believe that their co-worker’s memory of an event is faulty or untrue; therefore, one factor that typically decreases social contagion is not present. When viewing their co-worker or co-witness as an “expert” or as trustworthy, the listeners are more open to having their memory influenced by the other witness.

Social Contagion: Social Media

29 Ibid, pp. 940.
33 Ibid, 148–180
Another source of misinformation is social media, such as Facebook and Twitter. Social media platforms allow anyone to share his or her opinion, and because no “fact-checking” occurs on Facebook posts, the spread of misinformation is unavoidable. Further, social media allows for an abundance of “echo chambers,” wherein opinions are amplified because people are typically within a closed circle of similar-minded individuals. When people connect with others on social media, they tend to “friend” people who share similar beliefs and values. Therefore, people’s choice of “friends” influences what information they see. Additionally, information acquired from social media is not only influenced by “friends,” but social media platforms often use algorithms to determine what users see. Facebook and Twitter employ personalization technology, which selects the most relevant content for each user. For example, if a Facebook user usually clicks on news articles from a specific source, Facebook will tend to show more of that source’s content, which leads to the creation of a “filter bubble.” This author contends that a “filter bubble” leads social media users to only listen to one side or one voice, and news outlets are rarely neutral.

All of these elements of social media combined create a difficult-to-avoid source of misinformation. Social media plays an increasing role in the misinformation effect, especially in civil and criminal litigation. “Big name” or “high-profile” cases draw large amounts of media coverage, which Bennett described as “perhaps the most common source of misinformation in witness memory.” Although Koppel and Hirst’s study on the perceived expertise of the speaker and its effect on social contagion did not expressly identify “expert speakers” from the media, the authors of this article believe it is probable that persons, viewing various news anchors and media sources as “experts,” can increase the amount of social contagion. A witness may absorb misinformation from media if he or she reads an article containing inaccurate information written by someone he or she deems to be an authority or expert. For example, if a user is continually shown articles from a very liberal news source, either the result of an “echo chamber” or due to personalization technology, the user has likely grown trust in that particular news source, compared to if the user was to read an article by a very conservative news source. Workplace investigators face an even more unique challenge when handling high-profile cases because of the increased opportunity for witness’ memory representations to become altered by the witness engaging in social media and reading other news sources.

Leading Questions

The “act of remembering” occurs in social settings, and surprisingly, misinformation may come from the interview process itself. False memories can be constructed unintentionally by the suggestion of others due to wording or phrasing. This leads to a key source of misinformation: leading questions. Loftus argues that the wording of a leading question can contaminate and alter the memory. To demonstrate how one word can influence a witness report, Loftus had subjects view a short video of a multiple-car accident and fill out a questionnaire immediately thereafter. Half of the students received a questionnaire with six critical question stems beginning with, “Did you see the...” and the second half received the question stem, “Did you see a...” as in, “Did you see a broken headlight?” The only difference in the questions was one word, “the” or “a.” The participants were asked to report what they saw by selecting “yes,” “no,” or “I don’t know,” and the six critical questions pertained to items not present in the video.

Loftus found that participants who received the “a” question were over twice as likely to respond, “I don’t know,” to the critical questions. Participants with the “a” question responded “yes” 7 percent of the time, and participants with


37 Ibid, Bias in the Brain.


41 Ibid.
the “the” question responded “yes” 15 percent of the time.\textsuperscript{42} Thus, the participants who were questioned with a definite article (“the”) reported a false “yes” over twice as often.\textsuperscript{43} It follows then that when an investigator asks, “Did you see the broken headlight?” it implies to the listener that there actually \textit{was} a broken headlight. “The” question can be translated into, “There was a broken headlight. Did you see it?”\textsuperscript{44} Using “the” question automatically eliminates the need to ask the question, “Was there a broken headlight?” Not only did the study demonstrate that people with “the” question were more likely to answer “yes” or “no,” rather than “I don’t know,” but it also demonstrated that questions containing a definite article (“the”) resulted in a greater number of false recognitions. These findings suggest that an investigator or interviewer has the ability to influence a witness’ report.\textsuperscript{45} The results of this study are tremendously relative to internal workplace investigations. Different forms of the same question, even a change as small as one word, can be consciously used to provoke desired answers from a witness. One word can imply that something existed or occurred, when perhaps it did not, and the form of a question has the ability to “lead” a witness to a certain response.\textsuperscript{46}

Including a presupposition into a question can influence the answer to the question about the presupposition because witnesses can conform their memory to include the newly supplied information.\textsuperscript{47} Loftus conducted a study to determine whether supplying information in a question can strengthen or make memory representations more available. The participants viewed a one-minute film of a car collision. After the video, half of the participants received a test with the question, “How fast was Car A going when it ran the stop sign?” The second half of the participants received the question, “How fast was Car A going when it turned right?” Then both groups were asked the question, “Did you see a stop sign for Car A?” The results showed that 53 percent of the subjects who were asked the first “stop sign” question responded “yes” compared to only 35 percent of the subjects with the “turned right” question.\textsuperscript{48}

Loftus proposes two explanations for the results of this study. The first explanation is, “When a subject answers the initial stop sign question, he somehow reviews, or strengthens, or in some sense makes more available certain memory representations corresponding to the stop sign,” and when he is asked, “Did you see a stop sign?” he responds based on the strengthened memory representation.\textsuperscript{49} The second explanation is called the “construction hypothesis,” wherein the subject may visualize or reconstruct the portion of the event that is needed to answer the question.\textsuperscript{50} Therefore, according to Loftus, if a subject accepts the presupposition (a stop sign was present), the subject introduces that new information into his own “visualization” of the event, and when he is interviewed later about the incident, the subject reports based on his supplementation to the “actual” incident. Loftus argues that the subject now “sees” the stop sign that has been reconstructed in his memory by the leading question, but this will not tend to happen if the initial question only refers to the right turn.

Including presupposed information into an interviewer’s question (whether intentional or not) is not the only way to influence a witness’ memory and event recount. In fact, synonyms and word choice can also contaminate a witness’ memory.\textsuperscript{51} Loftus showed participants a video of a car accident and followed it with several questions about the event that occurred in the video. One group of subjects was asked, “About how fast were the cars going when they \textit{smashed} into each other?”, and the second group was asked, “About how fast were the cars going when they \textit{hit} each other?” However, Loftus’ critical question was not asked of the participants until one week later. A week later, participants were asked if they saw broken glass in the scene, and the results demonstrated that subjects who received the “smashed” question were more likely than those who received the “hit” question to state that they saw broken glass on the video, even though glass was not present in the video. Although “hit” and “smashed” both carry the same meaning, “smashed” implies a greater level of severity.\textsuperscript{52} Even when the interviewer believes he is not giving

\textsuperscript{42} Ibid, pp. 87.
\textsuperscript{43} Ibid.
\textsuperscript{44} Ibid.
\textsuperscript{45} Ibid.
\textsuperscript{46} Ibid.
\textsuperscript{47} Ibid, pp. 87.
\textsuperscript{48} Ibid, pp. 564.
\textsuperscript{49} Ibid.
\textsuperscript{50} Ibid.
\textsuperscript{51} Ibid.
\textsuperscript{52} Ibid.
presupposed information, “smashed” had the ability of reconstructing a memory into a more severe accident, which led participants to believe (falsey) that it was likely that broken glass was present in the video. This study demonstrates the importance of word choice and the consequences of unintentionally giving the witness suggestive information.

Numbers and measurements also have the capability of shaping responses. In workplace investigations, investigators seek to understand how frequently the alleged harassment or discrimination occurred. An investigator might ask a question similar to, “How many times did your boss touch you inappropriately? A couple times? More than ten?” Loftus conducted a study to determine the accuracy of witness estimations by including suggested numbers in questions. Loftus interviewed 40 participants about their headaches and various headache products. The participants were under the impression that they were participating in market research on headache products. Two crucial questions were in the experiment, and both questions were asked with slightly different wording or estimations:

1(a) In terms of the total number of products, how many other products have you tried? 1? 2? 3?
1(b) In terms of the total number of products, how many other products have you tried? 1? 5? 10?
2(a) Do you get headaches frequently, and if so, how often?
2(b) Do you get headaches occasionally, and if so, how often?

The results showed that the participants with the “1, 2, 3” question said they tried an average of 3.3 headache products, whereas the “1, 5, 10” subjects reported having tried an average of 5.2 headache products. Although including numbers in a question may seem harmless, the witness may presuppose that his or her answer should fall within the suggested range. Loftus also found that subjects given the “frequently” question reported having an average of 2.2 headaches per week, and the “occasionally” group reported having an average of only 0.7 headaches per week. Without explicitly supplying subjects with a range of numbers, a question using the word “frequently” implies a more numerous occurrence than using the word “occasionally.” Loftus contends that if a question contains true or false presuppositions, a witness’ original memory or original representation can be altered. Post-event information can be supplied to a witness by the investigator inadvertently, and when it occurs, the witness may remember the event based on the newly introduced information.

Implications of the Aforementioned Contagions

The Association of Workplace Investigators (AWI) established Guiding Principles for Conducting Workplace Investigations, which provides, in part:

An impartial investigation is generally conducted so that an employer can determine what occurred when there are contested allegations affecting the workplace that involve a potential violation of the employer’s policies, standards, ethics, or the law. The point of an impartial investigation is to provide a fair and impartial process for the complainant and respondent and to reach reasoned conclusions based on the information gathered.

Unfortunately, no one is immune to the sociability of memory. Therefore, bias and misinformation not only have the capability of contaminating a witness’ memory during the pre-investigation, but it can also occur during the investigative interviews with the witnesses, during mid-interview private discussions between an attorney and his or her client being interviewed, and from outside influences, such as, the media, gossip, or rumor mill in the workplace, or circulation of the reporting party’s written complaint (especially if already a lawsuit) within the workplace.

---

53 Ibid.
54 Ibid, pp. 561.
55 Ibid.
56 Ibid.
In part two, the implications of social contagions on credibility assessments will be discussed. Confirmation bias's effect on leading questions will be addressed, and tools an investigator can use to avoid biases and maintain neutrality will be provided.

Debra L. Reilly, Esq., SPHR, is the founder of Reilly Workplace Investigations in Encinitas, California. She has been an employment law attorney for 30 years, having conducted over 900 investigations throughout California and other states. She provides expert witness testimony regarding standard practice for conducting workplace investigations and other human resources-related issues. She can be reached at debra@wpinvestigations.com.

Julia Reilly, also a workplace investigator at Reilly Workplace Investigations, recently graduated from the University of California, Santa Barbara, with high honors, majoring in sociology of law. She will be attending law school in the fall 2019. Ms. Reilly can be reached at julia@wpinvestigations.com.