



DRI Product Liability Conference

February 2-4, 2022

THE FALLIBILITY OF MEMORY RECALL IN THE CONTEXT OF LITIGATION

Presented by:

Rachel York Colangelo, Magna Legal Services, New York, NY

Dan Long, Quarles & Brady, LLP, Indianapolis, IN

Brian Mims, General Counsel and Compliance Officer, Tadano, Houston, TX

Rachel Colangelo is Magna Legal Services' Director of Jury Consulting. She has a Ph.D. in Legal Psychology, with concentrations in Cognitive and Social Psychology. Over the last 15 years, Rachel has provided strategic litigation consulting on cases running the gamut from personal injury to complex commercial litigation and intellectual property disputes, in various venues across the country.

Brian is a graduate from the University of Texas at Austin and from the University of Houston Law Center. He has practiced law in Texas for almost 30 years. Brian currently serves as General Counsel and Compliance Officer for Tadano America Corporation, the seventh largest crane manufacturer in the \$33B global crane industry. In this role, he is responsible for all legal matters in the Pan American Region. Before joining Tadano, he held in-house positions with Chicago Bridge & Iron Company (n/k/a McDermott), Westlake Chemical Corporation, and El Paso Corporation (n/k/a Kinder Morgan) responsible at various levels of responsibility for litigation management, compliance, and labor & employment. He regularly serves as a volunteer mediator to the Harris County Dispute Resolution Center since 2019. He was born and raised in Detroit, Michigan, and spends his free time reading, listening to music, and being an avid sports fan.

Dan Long is one of the founding partners of Quarles & Brady's Indianapolis office and currently serves as the office's summer program chair, law school recruiting chair, and, in an unofficial

capacity, as the office social chair. After two years clerking on the Indiana Court of Appeals, Dan has spent the last 23 years representing a wide variety of clients primarily in multi-party toxic tort product liability and premises litigation. Through that work, Dan has served as local and national coordinating counsel often at the same time. Dan has been actively involved in the DRI Product Liability Section serving as Chair of the Chemical & Toxic Tort SLG, Chair of the Ambassador program, and currently as an at large member.

I. THE ESTABLISHED SCIENCE DEMONSTRATING THE FALLIBILITY OF MEMORY RECALL

Assessing witness credibility is one of the key components of a jury's job, as they are reliant upon witness testimony to understand the facts of the case. So important is the jury's consideration of witness testimony that any given set of jury instructions includes a section offering guidance as to how the jurors should go about assessing witness credibility and the weight to give each witnesses' testimony. Almost as a rule, fact witnesses testify based on their memories of events, whether in the recent, or in the case of certain product liability litigation, often distant past. Thus, a jury's assessment of fact witness testimony should involve an evaluation of the accuracy, or perhaps the fallibility, of such memories. Despite the critical role that memory plays in witness testimony, however, research has consistently demonstrated that jurors have many misconceptions about the accuracy of human memory and generally fail to appreciate its fallibility and malleability. Litigants can benefit from providing jurors with a high-level education on these issues in order to encourage a more critical assessment of the likely accuracy of witness testimony that is reliant upon sometimes distant, perception-based memories.

Rather than thinking of memories as perfectly preserved snapshots of moments in time that are filed away in the brain and are retrieved intact, memory researchers such as Daniel Schacter, former chair of Harvard's Psychology Department, describe memory retrieval as more of a recreation. Our brains do not in fact file away images or videos of events exactly as they occurred, but rather store key elements of our experiences, and the process of memory retrieval involves a reconstruction of those experiences by piecing together the key elements. During that reconstruction process, however, our brains may ascribe feelings, beliefs, or knowledge to the

experience that did not exist at the time but were gained by the person after the fact.¹ Cognitive psychologists generally refer to this phenomenon as the “misinformation effect” – the idea that memories are often altered or biased by the receipt of post-event misinformation.² Dr. Schacter organizes memory’s malfunctions “into seven fundamental transgressions or ‘sins’...”³ which include:

1. **Transience:** “a weakening or loss of memory over time. “
2. **Absent-mindedness:** “a breakdown at the interface between attention and memory. Absent-minded memory errors- misplacing keys or eyeglasses, or forgetting a lunch appointment-typically occur because we are preoccupied with distracting issues or concerns[] and don’t focus attention on what we need to remember. The desired information isn’t lost over time; it is either never registered in memory to begin with, or not sought after at the moment it is needed, because attention is focused elsewhere.”
3. **Blocking:** “a thwarted search for information that we may be desperately trying to retrieve. We’ve all failed to produce a name to accompany a familiar face. This frustrating experience happens even though we are attending carefully to the task at hand, and even though the desired name has not faded from our minds-as we become acutely aware when we unexpectedly retrieve the blocked name hours or days later.”
4. **Misattribution:** “assigning a memory to the wrong source: mistaking fantasy for reality, or incorrectly remembering that a friend told you a bit of trivia that you actually read about in a newspaper. Misattribution is far more common than most people realize[] and has potentially profound implications in legal settings.”
5. **Suggestibility:** “memories that are implanted as a result of leading questions, comments, or suggestions when a person is trying to call up a past experience. Like misattribution, suggestibility is especially relevant to-and sometimes can wreak havoc within-the legal system.”

¹ Schacter, Daniel L (2001). The Seven Sins of Memory: How the Mind Forgets and Remembers.

² Wells, Gary L. & Elizabeth F. Loftus (2013). Eyewitness Memory for People and Events. Handbook of Psychology, Forensic Psychology 149.

³ Schacter, Daniel L (1999). The Seven Sins of Memory: Insights from Psychology and Cognitive Neuroscience. 54 American Psychology 182.

6. **Bias:** “powerful influences of our current knowledge and beliefs on how we remember our pasts. We often edit or entirely rewrite our previous experiences-unknowingly and unconsciously-in light of what we now know or believe. The result can be a skewed rendering of a specific incident, or even of an extended period in our lives, which says more about how we feel now than about what happened then.”
7. **Persistence:** “repeated recall of disturbing information or events that we would prefer to banish from our minds altogether: remembering what we cannot forget, even though we wish that we could.”

There is a hefty body of cognitive psychological research that consistently demonstrates most people have surprisingly poor recall of specific details of events they have experienced over their lifetimes. Research has also established that most people are quite inaccurate at recalling details such as time, speed, and distance. For example, in a 1974 study conducted by renowned memory researcher Elizabeth Loftus and John Palmer,⁴ participants observed a video of an accident and were asked to estimate how fast the vehicles were traveling. Estimates ranged from 10 to 50 miles per hour, when the vehicles were actually traveling 12 miles per hour. People’s estimates were also significantly affected by the language used by the interviewer when asking them about the vehicles’ speed. When the interviewer used the term “smashed” to describe the accident, participants’ estimates of speed were much higher than when the interviewer used the terms “hit, contacted, or collided.” People who had heard the word “smashed” to describe the accident were also significantly more likely to remember seeing broken glass in the video (there was not any broken glass) than those who had heard the less severe terms to describe the accident. This demonstrates the substantial impact of post-event (mis)information on the accuracy of people’s memories. Loftus and Palmer wrote, “Two kinds of information go into one’s memory for some complex occurrence. The first is information gleaned during the perception of the original event; the second is external information supplied after the fact. Over time, information from these two sources may be integrated in such a way that we are unable to tell from which source some specific detail is recalled. All we have is one ‘memory.’”

⁴ Loftus, Elizabeth F. & John C. Palmer (1974). Reconstruction of Automobile Destruction: An Example of the Interaction Between Language and Memory. *13 Verbal Learning & Verbal Behavior* 585.

Importantly, witnesses testifying in jury trials are just as susceptible to these “sins” of memory as anyone else. Without an understanding of the wealth of consistent psychological research on the fallibility of perception-based memory, though, jurors are not aware of pitfalls such as the misinformation effect that may have significantly altered and affected the accuracy of a given witness’s testimony. Therefore, it is incumbent upon litigants to provide the jury with the necessary understanding of the factors that hinder human, perception-based memory as well as an explicit explanation as to why such factors are relevant to their consideration of the specific witness testimony they will hear in a particular case. Ideally, this juror education will be presented by a cognitive psychologist who is an expert in the field of memory. This expert testimony should not only provide jurors with a broad overview of the fallibility and malleability of perception-based memory, but should also clearly connect the key factors that impact memory generally to the specific factors at play for the fact witnesses from whom the jury will be hearing in that trial.

II. HOW THE CONTRAST BETWEEN PERCEPTION-BASED MEMORY AND CORPORATE MEMORY CAN BE USED TO DEMONSTRATE CORPORATE MEMORY IS MORE RELIABLE

The contrast between the perception-based memory of eyewitnesses and the records/data based memory of a corporation provides an unique opportunity to demonstrate the inherent problems with perception based memory while making corporate knowledge appear more objective and reliable. Many of the factors that impact human memory do not exist in corporate memory and, in fact, the processes designed to create corporate memory are often purposefully designed to take out the potential for human error. In the product liability context, much, if not all, of the information our corporate witnesses are asked to “remember” comes from documentation that is created based upon objective information. Even when cases involve pre-computer information, corporate memory consists almost entirely of documentation designed to record information in an objective way. There are simply many fewer areas of potential corruption of information in the corporate memory process than exist in the encoding, storage, and retrieval of an eyewitness’ memory. The juxtaposition of objective, document and data driven corporate memory and the purely subjective memory of a witness can provide a powerful tool to convince a jury that your client’s memory is more reliable and deserving of greater

weight. That is, if you can (a) overcome potential anti-corporate bias and the suspicion that records have been changed, and (b) your corporate client has followed some logic and institutional discipline in creating and retaining those records.

We will address the three phases of memory, encoding, storage, and retrieval to discuss ways to use your client's memory to your advantage and to demonstrate the unreliability of plaintiff's perception-based witnesses. We believe that in the right case and with the right judge using an expert on the science of memory can provide a great advantage for your case. And to provide a disclaimer, we will not address the admissibility of expert testimony in this discussion. That would be an entirely different presentation.

A. ENCODING

The encoding phase of memory provides perhaps the sharpest contrast between the two types of memory because of the great difference in how "memory" is created in witnesses and corporations. An eyewitness' ability to encode a memory is affected by far more environmental and internal factors than exist in the creation of the corporate memory. Corporate memory is based upon data the client has gone to great lengths to insure is as reliable and accurate as possible. One difficulty in demonstrating this contrast to a jury is that it requires asking plaintiff's witnesses questions we would generally try to avoid like how scared they were, how upset they were by viewing the accident or injury, or how chaotic the scene was. While it is understandable to be concerned about the impact that testimony can have on a jury, plaintiff's counsel is going to elicit it and it is those factors that can most negatively impact a witness' ability to accurately perceive and record the memory.

1. Environmental Factors

Environmental factors are anything that affects the way an event is perceived by a witness as the event happens. Weather conditions, distance, lighting, angle of view, speed, distractions, and obstructions are just a few environmental factors that can impact a witness' ability to create the memory in the first place. There are a wide variety of factors that will depend on the facts of your case that can negatively impact the encoding process for eyewitnesses. One factor that is not always understood involves accidents or injuries that occur

during the performance of a routine task. One of the strongest forms of memory in humans is what most people consider “muscle memory” or the memory of routines. In many instances a person will perform a routine task without creating any specific memory of that specific instance because it simply is not needed. It is important to make sure to establish the difference between how the witness always performs the task and whether they have a specific memory of that specific instance. For example, a parent can put a cooperative child into a car seat with her/his eyes shut, but generally does not create a memory of each specific instance because the routine is already known. Another example: ever get to the office and experience that eyebrow-raising feeling that you may not have closed your garage door...because you don't have a specific recollection of closing it? The key here is to spend time discussing all those factors with the eyewitness knowing that during the defense case you can then discuss how those factors do not exist for corporate memory.

In contrast, most forms of corporate memory do not suffer from the same environmental factors because the corporation has designed the encoding process to ensure accuracy. In fact, corporations often do all they can to take the human element out of the fact gathering process which eliminates the factors discussed above. For product liability litigation, much of the corporate knowledge will involve testing data, production data, and other forms of technical information that the corporation has often gone to great lengths to record accurately. It is important to make sure to discuss not only what the data says about the product, but also discuss how a great deal of thought and effort was put into making sure this data was as accurate as possible at the time it was created. Explaining how the data was recorded by a computer at the time of the event and then not changed will be important. The more we can take the human element out of the corporate memory process, the greater the contrast we can draw between the inherently unreliable nature of human memory and objectively accurate computer-generated data. Setting up the theme of this contrast should be something that is carefully incorporated into every aspect of a trial. When examining your client's witnesses, we recommend demonstrating how each of the environmental factors you established affected the eyewitness' ability to encode the memory did not exist in the creation of the corporate memory.

2. Internal Factors

Internal factors are all the factors unique to the individual or corporation that could bias, alter, or hamper the recording of the event. For eyewitnesses this includes the witness' subjective fear, anxiety, surprise, and stress of the event. Other internal factors are those specific to the witness such as eyesight, hearing, depth perception, any impairing factors like drugs or alcohol or sleepiness, and even such things like what the witness was doing at the time of the event that could have impacted the ability to witness the event. And, again, we understand why it feels counter-intuitive to openly discuss these factors with the witness in front of a jury, but these factors have been scientifically proven to have an immense impact on both the encoding and retrieval phases. When framed properly, a jury will understand how significantly those factors could have altered the witness' ability to accurately perceive the event in the first place. You do not have to walk far in any U.S. city to see a prime example of this in pedestrians or drivers distracted by their phones. The more factors that can alter or impair a witness' ability to initially observe the event that you can establish the greater the argument for why the witness' testimony is unreliable and the greater that testimony will generally contrast with your corporate client's memory.

Internal factors for corporations tend to occur less frequently and, once again, are the types of factors that corporations tend to try to address so that they do not hamper the collection of the data that becomes corporate memory. In addition, the corporation and its employees are almost never involved in the accident or injury, further distancing the client from the possibility that these types of factors could have impacted the creation of the memory. The main type of internal factor that exists for corporations are subjective analysis discussions and memos. There is often a paper trail related to decisions about safety factors, warnings, materials and the costs associated with each. Again, the more that it can be explained how those discussions and decisions were based upon objective data, the better. It's also important to point out that many of the subjective decisions that plaintiffs like to show juries are not acted upon and often quickly corrected based upon sound application of the objective factors. The common theme running through all discussions of corporate knowledge is the importance of removing the opportunity for human error and the unreliability of human memory by the client.

B. STORAGE

Storage refers to the time period between when the memory is created and recalled. One thing to remember is that each time a memory is accessed it is changed often without the individual recognizing it has been changed. Factors that can affect an individual's ability to store memories without altering them include the witness' health, the amount of time that has passed since the memory was created, medication, head trauma, age, and, perhaps most importantly, the introduction of post-event information. Exploring all the physiological reasons that could impact storage can be important because they are more common than you might expect. Age, health, medication, injuries, and the passage of time can all impact the witness' ability to accurately store the memory. These factors can be particularly persuasive when explaining to a judge why she/he should allow your memory expert to testify because they will feel more like areas of expert testimony than the other areas of memory might. Perhaps the most significant storage factor in litigation is the introduction of post-event information that quite literally changes the memory. Witnesses in litigation are repeatedly asked to recall the same memory, put through often a great deal of preparation, and often provided information about the event that the witness did not previously possess. Even the most ethically performed deposition or trial testimony preparation can significantly alter the memory. One way to judge whether this has occurred is to compare the witness' testimony in depositions to that at trial to see if some of the mistakes made initially have been corrected and, in particular, if any sequencing errors have been fixed. You do not need to know what plaintiff's counsel discussed when preparing the witness, but it does help to know how often the witness had recounted the memory, what he/she was shown in the preparation, and whether the witness has seen/heard the testimony of any of the other witnesses. If plaintiff's have used accident reconstruction demonstrations, you will want to know if the witness saw that before testifying because that could have a great impact on the memory. The more factors that could alter the memory that you can establish with the witness, the easier it will be to argue to the jury that the witness' memory is no longer reliable.

Blending the post-event information of storage with the routine tasks aspect of environmental factors, lawyers should carefully but fully probe the witness to determine whether the testimony artificially establishes strict compliance with the steps and warnings in a manual as "memory," or whether the task that led to the incident was so routine that steps may have been skipped, minimized, done out of sequence, etc. and *not* in conformance with the manual or warnings.

Some internal corporate factors that can affect storage include document retention policies/document destruction, changes in technology that make it more difficult or impossible to review the data (e.g. computer tapes, floppy disks, outmoded databases), employee changeover in key roles, and the ability for employees to access and alter data. The same type of testimony about how the data collection systems were designed to be as objectively accurate as possible for environmental factors are important for the storage phase too. In addition, discussing document retention policies and, where possible, the rationale behind deciding what documents can be destroyed will help explain to the jury that any document destruction was not an effort to hide bad facts for any given case. When faced with outdated systems that make access to the information difficult or impossible, or the loss of employees with extensive institutional knowledge, explaining the great lengths the client went to in order to attempt to access that data is important. And in an era where there is much suspicion of corporate motives, explaining all that was done to initially prevent employees from altering data and, where possible, how you can prove that did not occur will also be important. After hearing you ask the plaintiff's witnesses about all the deposition preparation they underwent, you need to address deposition preparation with the client's witnesses. You should emphasize that the preparation focused on making sure to accurately discuss the objective data without any alteration and the efforts that went into making sure the witness relied upon the documentary memory correctly. And, where feasible, actually using the documentary evidence in the testimony can help prove that the corporate representative is simply discussing the objective data. Ultimately, establishing that the type of post-event information that can so radically change a witness' memory simply does not exist for the client's corporate memory will be important.

C. RETRIEVAL

Retrieval is simply the act of recalling the memory and is another stage where there are a host of factors that can alter the accuracy of the memory, many if not most of which are inherent in the litigation process. Factors that affect eyewitness retrieval are leading/biased questions, imagination, logical inferencing, knowing the outcome of the event, and, like in the storage phase, the introduction of post-event information. One key scientific fact to recall is that every time a memory is retrieved it is altered usually without the witness recognizing that this had happened. Eyewitness testimony related to the incident at issue is also highly impacted by the

witness' emotional response to the event. Contrary to popular belief, traumatic events do not create indelibly imprinted memories, but instead are often some of the most inaccurate memories. One type of retrieval error that is very common is the inability to accurately recall the chronological sequencing events. It is also important to understand that a witness' confidence in a memory often bears no correlation to the accuracy of that memory and, in fact, studies have shown that in many instances the more confident a witness is in a memory the more inaccurate that memory is. A final factor to consider is the phenomenon of "pandemic time." The dislocation and isolation caused by the pandemic and quarantining has made it more difficult for people to recall the time or sequence of events during the pandemic.

The key to addressing all of the errors that can occur when a witness testifies about a memory is to draw out each one in a way that allows your memory expert to be able to identify them. Establishing how many times the witness has been asked to recount the memory and, where possible, demonstrating how the story has changed with each retelling is important. One of the first things to establish with the witness is how much deposition and trial preparation they have participated in and, when possible, discussing all the outside sources of information they have been provided by their counsel and from other witnesses or their own research online. One added benefit to this area of examination is that it allows you to address the problems with the witness' testimony without having to attack their credibility. You are simply establishing the factors that allows your expert to explain why despite the witness' good intentions the memory is simply not accurate.

At the risk of sounding repetitive, again, the goal when your client's witness testifies is to establish all the ways that the types of errors inherent in perception-based memory do not exist for corporate memory. The more testimony there is about how your corporate witness is dependent on documentation you have produced, the easier it is to establish that the corporation's memory is not susceptible to alteration each time it is recalled like perception based memory. This applies to any deposition preparation your corporate representative will go through because it will be about what to expect in the deposition and what the documentary memory of the corporation states. Corporation's generally do not have to address the distortion that the emotional impact of the event has on the witnesses because the client usually was not present during the event and the memory being recalled pre-dated the actual accident/injury.

Because you will have already established how the records upon which the testimony was created and maintained, you can easily demonstrate that the chronological sequence errors that are common with eyewitnesses did not occur for the client. It is also much easier to justify your witness' confidence in the testimony when you have documentation created with the intent of being as accurate as possible at the time of the event. Although the employees of the client may be experiencing the "pandemic time" phenomenon, the documents that are a corporation's memory will have objective indicia of when they were created to address this concern. Again, the more you can demonstrate that all the errors associated with perception-based memory do not exist in corporate memory, the greater the contrast you can draw between plaintiff's witnesses and your own.

III. CONCLUSION

There is a large body of peer reviewed, reliable, long-standing scientific evidence demonstrating that perception-based memory can be extraordinarily unreliable. In the proper case, a memory expert can help you provide a science-based explanation about why a jury should not accept the testimony of what are often extremely sympathetic witnesses. Memory experts can also help you explain how corporate memory is much more reliable because many, if not all, the factors that hamper perception-based memory do not exist in corporate memory. This theme of contrasting the forms of memory and how reliable each is should be incorporated into every phase of your case to create a unified message demonstrating why the jury, in its role assessing the credibility/reliability of the witnesses, should give your client's evidence greater weight. The science is there if you are willing to use it effectively.