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PERSPECTIVE

When testimony and the limits of memory collide

By Fred M. Blum

Many lawsuits involve events that occurred in the distant past and witnesses who remember details that directly implicate your clients. Due to the lack of other information, when a witness recalls with shocking clarity a product name, conduct that resulted in exposure to a hazardous substance, or other events, the veracity of this testimony becomes a defining factor. While it is possible the witness is lying to help his friend or to get even with a former employer, the issue is often much more complicated. New developments in the science of memory suggest that while witnesses may not be lying, their testimony could still be incorrect.

Scientists who study memory are mapping out the process by which memories are encoded, stored and retrieved. Combined with other disciplines, such as evolutionary biology, we are getting a clearer picture of how memory works. What we have learned is contrary to what most jurors or judges take for conventional wisdom. Our memory does not work like a recording device, where the events we experience are transcribed to be played back at the appropriate time. Nor is certainty of recall correlated with accuracy of the recollection.

Experiences are encoded into human memory selectively, depending on several factors. Whether we were paying attention to the event, what else was happening during the event, and the state of our health are all factors that influence what and how completely events are encoded.

Take the classic story of a wife talking to her husband about the grocery list while he is watching a football game. The husband heard his wife discuss the grocery list, but the odds of him remembering the list or even the conversation are slim. The information was not encoded due to the distraction of the football game and therefore never entered his

long-term memory. If the wife threw a pillow at her husband during the discussion, the odds of encoding rise exponentially.

The same analysis is true when a witness is asked to remember the brand name of a product he or she saw years earlier: Was any reason for the witness to remember the name? What else was the witness doing at the time? Was he or she responsible for ordering the part or was the name of the product immaterial to the individual's work? The answers to these questions affect whether the name of the product could have been encoded in long-term memory — or not.

Once encoded and stored in long-term memory, the witness or the football watcher still must retrieve the memory. How people retrieve memory is influenced by our evolutionary biology. We often forget that the “civilized” state we live in is a recent development in human history. For tens of thousands of years, humans lived as hunter-gathers who needed much different survival skills than we do. During a hunt, there was always the risk that the hunter might become the hunted.

The human brain developed a memory process to meet these challenges. One such development is called an “associational bias.” The human brain is compelled to associate events in a way that ensures survival. When the hunter saw movement in the grass, it was preferable to assume a lion was present. It may have been a warthog or just the wind. But waiting around to see if it was the lion was not the prudent course.

Associational bias still affects how we retrieve our encoded memories because the modern human brain still works in relatively the same way. The witness who knows his friend has mesothelioma (a disease caused by exposure to asbestos) will be pre-programmed to recall events that can be associated with asbestos exposure.

There are other aspects of the mechanics of memory that affect recall. When the football watcher is at the



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grocery store and trying to remember what was on the list, his brain can't reference a literal recording of the discussion. Memory isn't stored that way. Instead, the football watcher's brain scans all of the information at its disposal: What foods must be replaced? What are the usual purchases? How long ago was the last visit to the grocery store? What foods sound familiar?

This process is called reconstructive memory. Reconstructive memory also has an evolutionary component. Why the hunter knows the lion is dangerous is irrelevant. There simply was no advantage to distinguishing between knowledge gained through personal experience and information learned from the experience of others. In terms of survival, what mattered was the knowledge itself.

In the courtroom setting it is important to know the basis for the memory. Whether the testimony is rooted in events the witness personally experienced is of critical importance. The bottom line is: When recalling a grocery list, the dangerous nature of a lion, or what happened to a co-worker, we are using the full panoply of the information at our disposal, not just the facts associated with the event in question. This could include what we remember seeing, photographs of the event or what people told us about the event.

Confirmation bias is another factor that can cloud how people recall events. Whether the witness is sure that what she saw is accurate may

have no correlation to its accuracy. Once something is believed, whether it is that the lion is dangerous or that butter was on the shopping list, most humans will then interpret future events in a way that confirms the original belief.

Again, this is due in part to evolutionary biology. The hunter who unequivocally believed the lion was lethal had a better chance for survival. In a recent study on memory, participants were told a story about a martial artist attempting to break boards with his hands. When later asked to recall the story, most of the subjects recalled the martial artist actually breaking the boards.

Complicating matters further, the more intelligent a person, the more susceptible she will be to confirmation bias. In a jury trial, this can be very problematic because the outcome depends on the jury's perceptions of witness testimony, which may be believable without being accurate.

Witnesses can be certain of their memories and believed to be reliable, yet their testimony can be terribly wrong as evidenced by the number of people convicted based on eye witness testimony and exonerated based on DNA evidence. The law, and especially civil law, has been slow to catch up with the science and at times been antagonistic to the inherent limitations of human memory. Courts and juries must be educated about these limitations. But before that can happen, lawyers must know and understand memory science.



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