Flashbulb Memories

Most people carry a handful of memories that feel uniquely vivid and permanent — where they were and what they were doing when they learned of a shocking public event, such as the September 11 attacks or, for an earlier generation, the assassination of a president. These are called flashbulb memories, after the old camera flashbulb, on the theory that a sufficiently surprising and emotional moment imprints itself like a photograph. The flashbulb metaphor is appealing and, it turns out, misleading. Decades of research show that these memories are not photographs at all: they fade and distort over time at much the same rate as ordinary memories, even as the person remains supremely confident in their accuracy. Flashbulb memory is, for this reason, one of the clearest illustrations of a principle at the heart of evaluating testimony — that the vividness and confidence with which a memory is held are not measures of whether it is correct. This paper explains what flashbulb memories are, what the research has found, and why that finding matters in court. It assumes no background in psychology, and the science here favors no party.

What a Flashbulb Memory Is

The term was introduced by Brown and Kulik (1977) to describe the vivid, detailed, and seemingly permanent recollections people form of the moment they received surprising and emotionally significant news. The memory is not of the event itself — most people did not witness the assassination or the attacks directly — but of the circumstances of reception: where they were, what they were doing, who told them, how they felt. These memories are reported with a striking sense of detail and immediacy, as though the scene had been captured whole and could be replayed at will. Brown and Kulik proposed that a special biological mechanism, triggered by surprise and emotional importance, "printed" such moments into memory with unusual completeness.

Not Actually Photographic

The photographic metaphor did not survive empirical testing. When researchers obtained a person's account of a flashbulb event soon after it happened and compared it with the same person's account months or years later, the later memories frequently turned out to be wrong in significant ways — while being recalled with full confidence. In the most famous study, people's confident, detailed memories of how they learned of the Challenger explosion were substantially mistaken when checked against what they had written the morning after the disaster, with some witnesses unable to believe their own earlier records (Neisser & Harsch, 1992). Far from being immune to distortion, flashbulb memories are reconstructed and revised like other autobiographical memories; what is unusual is not their accuracy but the certainty with which they are held.

The Central Finding: Confidence Without Accuracy

The defining feature of flashbulb memory is a dissociation between how a memory feels and how accurate it is. The clearest demonstration compared people's memories of learning about the September 11 attacks with their memories of an ordinary event from around the same time, tested again after intervals of up to several months (Talarico & Rubin, 2003). The consistency of the two kinds of memory declined at the same rate — flashbulb memories were no more durable or accurate than everyday ones. What differed was the felt quality: for the flashbulb memories, ratings of vividness, the sense of reliving the moment, and belief in the memory's accuracy stayed high even as actual consistency fell, whereas for everyday memories those feelings faded along with accuracy. As the authors put it, flashbulb memories are not special in their accuracy, only in their perceived accuracy. Other studies reach the same conclusion: confidence remains high across long delays despite declining accuracy (Weaver, 1993), and large, decade-long follow-ups of memory for September 11 find that inconsistencies, once they appear, often persist uncorrected while confidence stays elevated (Hirst et al., 2015).

A Normal Memory Held With Abnormal Confidence

Brain research points in the same direction. Flashbulb memories engage the same neural systems as ordinary episodic memories rather than any special "flashbulb" mechanism, with the emotional

intensity of the moment contributing through the amygdala. In a brain-imaging study of memories of September 11, participants who had been physically closer to the World Trade Center, and who reported more vivid and emotional recollections, showed greater amygdala engagement during retrieval — yet their memories were no more accurate for that (Sharot, Martorella, Delgado, & Phelps, 2007). The convergent picture from behavior and neuroscience is that a flashbulb memory is best understood as a normal episodic memory — subject to the usual forgetting and distortion — that happens to be accompanied by an unusually strong feeling of vividness and an unusually high degree of confidence (Slotnick, 2017).

Flashbulb Memories and the Law

Flashbulb memory is, in effect, a natural experiment that isolates the very intuition courts must guard against: that a memory recounted with vivid detail, emotional force, and unshakable confidence must be accurate. Here is a category of memory that maximizes all three of those qualities and is nonetheless no more accurate than mundane memory — and whose confidence stays high precisely as accuracy erodes. The lesson generalizes directly to testimony about crimes, which are themselves surprising, emotional events. A witness's certainty that they will "never forget" a traumatic scene, and the richness with which they describe it, are products of the event's emotional significance; they are not assurances that the memory is correct, and they do not protect the memory from the ordinary decay and reshaping that the passage of time and intervening influences produce.

These considerations reinforce the established caution about treating a witness's confidence as a measure of accuracy — a factor that traditional reliability doctrine invites courts to weigh (Neil v. Biggers, 1972; Manson v. Brathwaite, 1977), and that several courts have re-examined in light of the science (State v. Henderson, 2011; Perry v. New Hampshire, 2012). Whether an expert may explain flashbulb-memory research to a jury is governed by the general standards for expert evidence — Daubert v. Merrell Dow Pharmaceuticals (1993), as extended by Kumho Tire Co. v. Carmichael (1999), or the Frye general-acceptance test still followed in some jurisdictions (Frye v. United States, 1923) — and a witness may testify only from personal knowledge (Fed. R. Evid. 602). Such testimony informs the trier of fact that vividness and confidence do not track accuracy; it does not establish that any particular memory is mistaken.

Special Issues in Legal Practice

The principles described above apply with equal force to every party in a legal proceeding. Memory operates the same way regardless of who is asking the questions, and the science summarized here favors no side. What differs between the parties is not the science but the vantage point — the particular places where memory issues tend to surface, and the particular errors each party is best positioned to guard against. The two summaries below identify those recurring issues. They are offered for orientation, not as litigation strategy; in every case the controlling question is what the evidence in that case will, and will not, support, and the expert's role is to inform the trier of fact rather than to advocate for either side.

Special Issues for Prosecutors

For the State, the flashbulb-memory research bears on how the vividness and confidence of an emotional account are characterized. The issue most likely to surface is the natural assumption — by the State or the jury — that a witness's certainty and rich detail about a dramatic event guarantee accuracy. The error best guarded against is resting the case on those felt qualities, when the research shows that even the most vivid, confident memories of shocking events are no more accurate than ordinary ones and decay in the same way. This does not mean such testimony is worthless: the central, well-rehearsed gist of an experience may be reliably retained, and a witness's account can be entirely truthful. The constructive course is to anchor the case in the documented early account and in corroboration rather than in the emotional intensity or confidence of the telling, and to recognize that a witness's sense that they could "never forget" is sincere but not self-validating.

Understood this way, the science guards the State against a misjudgment that can mislead a jury in either direction, and supports presenting confident emotional testimony for what it reliably shows rather than for more than it can bear.

Special Issues for Defense

For the defense, the recurring task is to separate the felt certainty of an emotional memory from its accuracy. The issue most likely to surface is reliance on a witness's vivid, confident account of a surprising or traumatic event as though that vividness and confidence established its correctness. The flashbulb-memory research provides a clear, broadly accepted basis for the point that they do not: confident, detailed memories of momentous events are routinely wrong in specifics and grow no more accurate for being strongly felt, while confidence persists even as accuracy declines. The error best guarded against is overclaiming — treating the flashbulb findings as proof that a particular memory is false, when they show a general dissociation between confidence and accuracy rather than a verdict about any individual account. Examining how the account has changed across retellings, and what the witness was exposed to over time, is the sounder course.

The corresponding safeguard is to ensure the trier of fact understands the science: that vividness, emotional force, and confidence are properties of how a memory feels, not measures of its accuracy; that memories of even the most shocking events distort like ordinary memories; and that high confidence can coexist with substantial error. Where admissible, expert explanation of flashbulb-memory research can help the factfinder weigh a confident, emotionally charged account without equating its intensity with its truth.

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