

Body-Worn Cameras: Legal Issues: The Good, The Bad, and Watching the Video in Use of Force Investigations: Relevant Memory Research¹

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INTRODUCTION

The debate surrounding the efficacy of allowing/requiring officers to review a body worn camera video (BWC) or doing a walk-through before writing a report or participating in an investigative interview during an Officer-Involved Shooting (OIS) investigation should be informed by the cognitive science of memory and how memories are encoded, stored and retrieved, and whether memory is enhanced or contaminated by post-event information (e.g., a walk-through or reviewing a BWC video). To date, there has been no research that has directly studied the question in a law enforcement context; on the other hand, there has been decades of memory research that informs the discussion. For example, the research on contextual reinstatement or cognitive cueing – that is, whether recall is enhanced by cues from the original context -- is not always consistent particularly for recently acquired information – but in much research, experiments show that environmental contextual stimuli that are similar to encoding contexts can provide strong retrieval cues at test. That is, memory research in which the retrieval of memory occurs in the environment in which it was encoded (or from a video that “captures” the original environment) enhances memory retrieval. (NOTE: There is consistent evidence that contextual reinstatement has a significant enhancing effect on long term recall [e.g., returning to a 25-year reunion and being flooded by memories]).

Even assuming contextual reinstatement enhances short term recall, there is substantial research that demonstrates memories will be altered by post-event information (e.g., scene walk-through, review of BWC video, conversations with union representative and attorneys). Memories encoded by most officers at the time of a quickly unfolding, brief duration OIS will be partially distorted so unrefreshed memory will often contain perceptual errors (e.g., obvious stimuli will not be seen [inattentional blindness], sounds may be muted, estimates of time, number of rounds shot and distance will be inaccurate) so unrefreshed memory of an OIS will frequently contain inaccuracies. These perceptual errors will often lead to discrepancies between an officer's unrefreshed memory and “objective” evidence captured by a body camera video or witness accounts. Moreover, memory research consistently demonstrates that because memory retrieval is a reconstructive process in which post-event information can substantially contaminate the original, unrefreshed memory, there is a fundamental risk that the Graham v. Connor construction of “‘reasonableness’ of a particular use of force must be judged from the perspective of a reasonable officer *on the scene*, rather than with the 20/20 vision of hindsight.) will be aborted by “refreshing” an officer's memory by a scene walkthrough or review of a BWC video before providing a statement. Such

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refreshed memories may provide more “accurate” information but will carry the risk of memory discrepancies that can be problematic to investigators, communities and triers of fact.

Ultimately, policy-related considerations cannot strictly be answered by cognitive psychology; the science of memory provides no clear answer to the question of the benefits versus the risks of reviewing BWC footage before making a statement. Until then, the current science, although not entirely consistent, is more supportive of interviewing an officer sooner rather than later, before any other new information, evidence or BWC footage or time has contaminated or decayed an officer’s memory and perception of the event.

RELEVANT RESEARCH (partial list):

1. MEMORY RETRIEVAL

- a. *Smith, S.M., Handy, J.D., Angello, G. & Manzano, I. (2014) Effects of similarity on environmental context cueing, Memory, 22:5, 493-508, DOI: 10.1080/09658211.2013.800553*

SUMMARY: *Many theories of memory rely on mechanisms based on context-dependence, the idea that memories of events are better when encoding contexts are reinstated. Overall, the evidence for strong effects of environmental context on human memory is inconsistent, with many weak findings, as well as failures to find effects of context reinstatement on memory.*

In the Smith et al. research, three experiments showed that environmental context stimuli that are similar to encoding contexts can provide strong retrieval cues at test. The cueing effects of similar contexts were found both for video-recorded scenes, especially for videos that were conceptually similar to the video contexts seen at encoding. These results are consistent both with predictions of the context reinstatement principle, which states that the more an encoding context is reinstated, the better memory is, and with the theory of encoding specificity, which states that memory depends on the match between the cognitive environments at encoding and retrieval. This is consistent with the notion that context reinstatement is an essential part of the cognitive interview, which is used to improve eyewitness memory (e.g., Fisher, & Geiselman, 1992; Geiselman, Fisher, MacKinnon, & Holland, 1985), in which the use of video environmental contexts similar to places where events were witnessed may be useful for enhancing eyewitness memory.

IMPLICATION: Research supports the conclusion that memory of events is likely to be improved following a walk-through or a BWC video review. However, psychologists have documented for years the difficulty people have in remembering the source of information in their memory (see 3.D. – research indicates significant misattribution errors; that is, the officer may confuse the source of their memory, resulting in an inability to distinguish whether it was unrefreshed or refreshed from the walk-through or watching the BWC video).

2. MEMORY ENCODING ERRORS

- a. Simons, D.J. Failures of Awareness: The Case of Inattentive Blindness. <http://nobaproject.com/modules/failures-of-awareness-the-case-of-inattentive-blindness#reference-8>

SUMMARY: The phenomenon now known as inattentive blindness is the surprising failure to notice an unexpected object or event when attention is focused on something else.

- b. Simons, D.J. & Chabris, C.F. Gorillas in our midst: Sustained inattentive blindness for dynamic events. - *Perception*, 1999

SUMMARY: You can even miss unexpected visual objects when you devote your limited cognitive resources to a memory task. Inattentive blindness.

- c. Artwohl, A. (2002). Perceptual and Memory Distortion During Officer Involved Shootings. *FBI Law Enforcement Bulletin*, 71(10), 18-24.

SUMMARY: Dr. Artwohl's research documents many common perceptual and memory disturbances during an OIS

IMPLICATIONS: An officer's unrefreshed recall of a shooting will most commonly include perceptual and memory errors. Because of selective inattention and perceptual/memory errors, it is likely that there will be discrepancies between the officer's unrefreshed memory for an event with what is captured on a BWC video.

3. MEMORY RETRIEVAL ERRORS

- a. Loftus, E.F. and Palmer, J.C. (1974) Reconstruction of Automobile Destruction: An Example of the Interaction Between Language and Memory. *Journal of Verbal Learning and Verbal Behavior* 13(5):585-589.

SUMMARY: Two experiments are reported in which subjects viewed films of automobile accidents and then answered questions about events occurring in the films. The question, "About how fast were the cars going when they smashed into each other?" elicited higher estimates of speed than questions which used the verbs collided, bumped, contacted, or hit in place of smashed. On a retest one week later, those subjects who received the verb smashed were more likely to say "yes" to the question, "Did you see any broken glass?", even though broken glass was not present in the film. These results are consistent with the view that questions asked subsequent to an event (i.e., post event information) can cause an inaccurate reconstruction in one's memory of that event.

- b. Loftus, E. F. (1979). The malleability of human memory: Information introduced after we view an incident can transform memory. *American Scientist*, 67, 312-320.

SUMMARY: Participants who witnessed an auto-pedestrian accident involving a stop sign were subsequently asked "Did another car pass the red Datsun when it was stopped at the yield sign?" In a later test of their memory for the witnessed events, participants were given a forced choice between the slide depicting the stop sign and a nearly identical slide depicting a yield sign. The finding was that 75% of the control participants (who had not been misled) correctly chose the slide they had seen depicting the stop sign, whereas only 41% of the misled participants did so — a 34% difference in accuracy. Additional studies showed that when participants who selected the misinformation were later asked to give a second guess (e.g., "Was it a stop sign or a no parking sign?"), their likelihood of selecting the original item was not greater than chance. On the basis of these findings, Loftus claimed that misleading post event information could not only supplement eyewitness memories, it could also transform them. The "misinformation effect" documented by Loftus is one of the best-known and most influential findings in psychology.

- c. McCloskey, M. & Zaragoza, M. (1985). Misleading post event information and memory for events: Arguments and evidence against memory impairment hypotheses. *Journal of Experimental Psychology: General*, 114, 1-16.

SUMMARY: People tend to incorporate misleading postevent suggestions into their eyewitness reports. Whether or not misinformation impairs memory for originally seen details, the fact remains that people can be easily led to report misinformation that has only been suggested to them. Hence, a critically important issue of both theoretical and practical concern is understanding the nature and extent of this misleading influence. Does misleading questioning simply influence what participants say, or might such questioning lead to the development of false beliefs about the witnessed event? Alternatively, is it possible that exposure to misinformation might lead people to create genuine false memories of having witnessed the suggested events?

- d. Schacter, D. L. & Dodson, C.S. (2001). Misattribution, false recognition, and the sins of memory. *Philosophical Transactions of the Royal Society (B)*, 356, 1385-1393.

SUMMARY: Among other findings, the error of misattribution involves attributing a recollection or idea to the wrong source; suggestibility refers to memories that are implanted at the time of retrieval; and bias involves retrospective distortions and unconscious influences that are related to current knowledge and beliefs. That is, an officer may be unable to remember the source of his/her memory once it is refreshed.

- e. Meade, M. L., & Roediger, H. L. (2002). Explorations in the social contagion of memory. *Memory & Cognition*, 30, 995-1009.

SUMMARY: Studies of the social-contagion effect have shown that when two people witness the same event, a person's memory for the witnessed information can be contaminated by false information provided by the cowitness. In these studies, two participants (one of whom is a confederate) view a series of scenes

and then engage in a collaborative-recall task where they each recall several items from each scene. However, some of the items "recalled" by the confederate are false in that they suggested objects that had not actually appeared in the scene (and thus serve as misinformation). The finding of interest is that when participants are later tested individually they recall these suggested items even when told to recall only those items they remembered from the scenes. Moreover, neither warning participants that others' responses might influence their recall, nor giving them a source-monitoring test (which oriented them to discriminate between items they saw and those the confederate reported) eliminates the social-contagion effect. These findings extend research on the misinformation effect by showing that even information provided by an unfamiliar peer can affect participants' memories for events they have witnessed.

- f. Loftus, Elizabeth F.; Hoffman, Hunter G. Misinformation and memory: The creation of new memories. *Journal of Experimental Psychology: General*, Vol 118(1), Mar 1989, 100-104.

SUMMARY: *Misleading information presented after an event can lead people to make erroneous reports of that misinformation. The misinformation effect is a prime example of retroactive interference, which occurs when information presented later interferes with the ability to retain previously encoded information. Reconstructive theories of memory also claim that people rely on information obtained after the event to reconstruct their past. Information obtained after an event is known as postevent information. For instance, if one were to witness a bank robbery and then later saw a news report about the robbery, details from the news report may become incorporated into one's memory for the event.*

- g. Grady, R. H, Butler, B. J. and Loftus, E.F. (in press). What should happen after an officer-involved shooting? Memory concerns in police reporting procedures. *Journal of Applied Research in Memory and Cognition* (to be published Sept. 2016 issue at <http://www.sciencedirect.com/science/journal/22113681>)

SUMMARY: *Procedures around interviewing a police officer after a shooting have recently come under increased scrutiny. Some argue the officers should be allowed to view available video footage from body cameras and wait two to three days to de-stress before being interviewed. While viewing the video first may increase accuracy for details present in the footage, it may also cause forgetting or distortion for other parts of the situation not captured on camera, including the officer's perception and construal of the situation. Grady, et al. (2016) argue that retrieval-induced forgetting (RIF)² is particularly relevant to the situation of allowing officers to view BWC footage before making their report because the camera can never capture the entire situation. It will be crucially missing, among other things, the internal perception of the officer. If officers view the footage before making a report or participating in an investigative interview, and use BWC*

² Anderson, M. C., Bjork, R. A., & Bjork, E. L. (1994). Remembering can cause forgetting retrieval dynamics in long-term memory. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 20, 1063-1087. doi:10.1037/0278-7393.20.5.1063 SUMMARY: Retrieval-induced forgetting (RIF) shows that retrieving parts of a memory can reduce access to other parts of related memory which were not retrieved.

footage as “practice” in thinking of what they will report, they may be less likely to recall those other aspects that did not get the extra retrieval that happened by watching what the BWC caught. If they had made their report first, they would likely have better accuracy for the relevant peripheral details of a scene.

Additionally, memory is likely to decay over any delay from a waiting period, with little support for the claim that a long de-stressing period will improve accuracy compared to an immediate report. Though this is a complex policy matter with many considerations, these procedures may do more harm than good when it comes to preserving the most accurate and helpful memory from the police officer.

IMPLICATIONS: Memory research demonstrates that refreshed memory will alter the original memory. Memory will decay with any delay in retrieval. Retrieval-induced forgetting from a walk-through or watching a BWC video may cause less memory of peripheral details.