New! Force Science Study Casts Fresh Light on Police Memory Errors

forcescience.com/2017/10/new-force-science-study-casts-fresh-light-on-police-memory-errors

By Chuck Remsberg October 25, 2017

A favored tactic of plaintiffs' attorneys in civil suits is to cast doubt on an officer's credibility by emphasizing errors in the officer's recall of details about the critical incident at issue.

Now a major new study by a Force Science research team provides unequivocal scientific support for the fact that erroneous memories of life-threatening events are, in fact, perfectly normal among officers trying to be truthful in their accounts. And the study offers guidance on how best to minimize such mistaken recollections in the first place.

Among other things, the findings and their implications establish that:

- Even in a relatively simplistic encounter—a single suspect firing in a well-lit environment with few distractions—a significant portion of involved officers have difficulty accurately recalling even critical details about the encounter;
- Investigators who push officers to remember information that is peripheral to their core focus may unwittingly contribute to officers' credibility problems later on;
- Officers who get involved too intensely in verbal exchanges in a confrontation are likely to miss a suspect's important physical actions, resulting in significant problems of personal safety immediately and of memory eventually;
- Reviewing video of an event soon after it occurs may not only help officers to preserve memory but to actually improve it with the passage of time.

Says the Force Science Institute's executive director Dr. Bill Lewinski, a member of the research team:

"Much remains to be learned about the formation and retrieval of memories of high-stress circumstances, but this study broadens our understanding in ways that are important to officers themselves and to investigators, police attorneys, administrators, force reviewers, and other professionals who are responsible for assessing officers' behavior and statements in controversial confrontations."

In addition to Lewinski, the study team included Drs. Dawn O'Neill and John O'Neill, behavioral scientists with the Force Science Research Division, and Mark Hartman, a doctoral student in the Dept. of Kinesiology at Iowa State U.

SHOTS FIRED

Testing involved a realistically simulated traffic stop and was done with a pool of 74 male and 12 female officer volunteers of varying ranks from a variety of law enforcement agencies in Oregon and Washington. They ranged from 27 to 56 years old and had been on the job for an average of 12 years. Individually, they reported making as many as 80 traffic stops per week on duty, though the average was about 14 per week.

In a role-playing scenario inside a large, open warehouse at a police training site in Oregon, the officers interacted one at a time with the driver of a Ford Taurus who had been "stopped" for speeding. Beyond a stock advisory that the stop "may or may not escalate," the officers were given no hint of what might happen.

On the initial approach, each discovered that the driver was a "sovereign citizen" who vocally and abusively protested the officer's authority to interfere with his travel and refused to hand over requested documents. Paperwork and radio traffic required a return to the officer's squad and two more approaches to the violator vehicle.

During the third contact at the driver's door, the angry suspect suddenly pulled a handgun from between his seat and the console and opened fire on the officer with Simunition rounds.

The scenario was "as close to a real street encounter as you can get in a study," Lewinski told Force Science News. That the officers experienced a high level of physiological stress arousal was confirmed by heart-rate monitors each wore during the exercise.

FREE RECALL

Collectively, the scenarios, which extended across several days, have provided a treasure-trove of data that is still undergoing analysis. Earlier, we reported on findings about how the officers reacted physically when suddenly attacked (see FSN #202, 4/17/2012. Click here to go to the FS News archives).

The current study focuses on their mental processing, specifically what they could remember about what they'd been through.

When the scenario ended, the officers were sent to a quiet room and asked to write down "everything you can remember about your final approach [to the suspect vehicle], including what happened before, during, and after the assault, as fully and in as much detail as possible," taking as much time as necessary. This "free-recall essay" was intended to roughly approximate the open-ended questioning used in "cognitive interviewing" to encourage the unrestricted probing of memory.

After that, the officers were given an opportunity to review video footage of their final approach which had climaxed in the surprise shooting. Some chose to watch, some didn't.

One to two months after the testing, the officers were contacted by the research team via email and asked once again to “describe everything” they could about the last approach and sudden attack, “fully and in as much detail as you can remember.” Then the researchers began the challenging chore of coding, analyzing, and interpreting the data they’d amassed.

FACT CHECKING

First, they minutely dissected the officers’ essays, often word by word, sorting the memories that were recorded into 10 different categories. These included descriptions of objects, people, locations, behaviors, verbal dialogue, and so on. Each officer’s statements in each category were totaled and then cross-checked individually with video recordings of the scenarios for accuracy.

For most categories, an officer’s report had to “exactly match video footage in order to be coded as accurate,” the researchers explain. Verbal details, however, “were given more leniency.” For example, if an officer wrote that the driver said, “I’ve got to get out of here” but video established that the driver actually said, “I need to leave,” the detail was recorded as correct, so long as what the officer remembered “conveyed the same meaning.”

Where discrepancies were found, the researchers then checked the officer’s account against video of the first and second vehicle approaches to see if perhaps a match could be found in one of the earlier driver contacts.
Ultimately, the officers were sorted into four groups on a continuum, ranging from those with the lowest rate of recall accuracy to the highest.
“With this degree of fact-checking and collating,” says Lewinski, “there’s no doubt as to the precision of the results.”

HIGHLIGHTS

The official findings—expressed in a dense jungle of computer-generated statistics and entwined with arcane terminology like “one-way multivariate analysis of variance” and “Bonferroni post-hoc tests”—have been accepted for publication in the peer-reviewed journal Law Enforcement Executive Forum.

But for practical purposes, expressed in laymen’s language, here are some of the highlights and their significance.

Flawed memories

Overall, the officers’ recall accuracy was “high” but by no means perfect. As a group, the officers achieved 88% accuracy across all types of information they reported on.

“This demonstrates that even when only one subject is firing a weapon in a well-lit area with few other distractions, officers may still have difficulty recalling details about the encounter,” says researcher Dr. Dawn O’Neill. “We would expect memory to further degrade as the

encounter and environment become more complex and dynamic."

As Lewinski puts it, "Even with the best, well-intentioned effort to remember everything accurately, human memory is not going to be perfect. Officers' memory is simply not infallible under even the best of circumstances."

Critical omission

Nearly half the officers failed to recall that the suspect's right hand had disappeared from sight shortly before it surfaced with the gun and blasted multiple rounds in their direction. "Either they missed seeing this when it happened or they forgot it when they wrote their essay," O'Neill says, either way a critical omission.

Those who did report the hand movement tended to more accurately remember a greater number of other details about the driver and his behavior. Conversely, they reported many fewer details about themselves and their words and actions than did those who failed to mention the hand movement.

"This tells us where the officers' focus was during the encounter," Lewinski explains. "If they missed or forgot the furtive movement, it's likely they were focused more on the driver arguing with them than on what he was physically doing that might be dangerous to them."

Surplus details

The more details officers reported the less accurate those memories tended to be. Lewinski sees this as a cautionary finding.

"Of course, in reports and statements officers should be as thorough and comprehensive as possible. But keeping in mind what's realistically possible is the key," he says. "Officers and interviewers alike need to understand the well-documented psychological tendency to want to fill in gaps in a narrative and supply details that are really best guesses or 'logical' assumptions rather than true memories."

In the study, for example, officers often chose to estimate the number of shots fired by the driver. These estimates on average were inaccurate by a factor of 2, meaning for example if 4 shots were fired, the officers reported they had fired 2 or if 6 shots were fired, they would report that 3 were fired. Likewise, elaborating in detail on dialogue proved to be a trap for many of the participants. The majority of memory errors that officers reported about themselves, for instance, involved verbal details.

"In mining memory," Lewinski advises, "the concentration should be on discovering and developing what the involved officer's primary focus was during the encounter, not on trying to add a surplus of peripheral information that the officer may not even have been aware of at the time of the confrontation, even though it may prove to be important later.

Generally in our studies, the farther officers strayed from their central point of attention, the less they could remember."

Blending

Over half of the officers—especially those in the lower-accuracy groups—"blended" one or more details from their first two approaches to the suspect vehicle into their description of the final approach on which they were attacked. Specifically, they tended to blend verbal details, including portions of conversations. "Sometimes," O'Neill says, "they 'recalled' conversation that never occurred during any of the three approaches."

The possibility for blending, particularly of verbal details, "might be an important consideration during the interview process for incidents that involve multiple verbal interactions," the study notes.

Video impact

Perhaps the most intriguing finding, in Lewinski's opinion, relates to the video review that some officers opted for after completing their initial account of what happened.

When officers were asked a second time to recount their memories of the shooting, the researchers discovered that those who had participated in the video review one to two months earlier now scored "higher overall accuracy in their memories than those who had not reviewed their footage," O'Neill says.

Indeed, accuracy increased by 11% for those who reviewed footage, and decreased by 11% for officers who didn't experience a video review.

"The positive benefit of reviewing video at the time of the event appears to help memory even much later," Lewinski says. If this finding can be replicated with larger-sample groups in future research, he says, "it should have a profound effect on investigations of officer-involved shootings and other major uses of force."

What do this finding and others add up to? The research team offers this bottom-line conclusion:

Officers in the study had "no reason to intentionally obscured their reports or provide inaccurate information." So the findings support the premise that "errors in police officer reporting do not necessarily reflect a deliberate attempt to deceive or deflect blame."

At this writing, the study titled "Law Enforcement Memory of Stressful Events: Recall Accuracy as a Function of Detail Type," has not yet been scheduled for publication byLaw Enforcement Executive Forum.

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