**Protective Vests in Law Enforcement: A Pilot Survey of Public Perceptions**

John O’Neill, Steven A. Swenson, Emily Stark, Dawn A. O’Neill, & William J. Lewinski (2017)

Journal of Police and Criminal Psychology

The primary purpose of this study was to begin an examination of the relationship between public perception and the number of attachments on external protective vests worn by law enforcement. A secondary purpose was to examine perceptual differences between non-law enforcement majors and law enforcement majors. Images of six vests that systematically varied in the amount of external attachments were rated across eight attributes: (1) approachability, (2) militarized appearance, (3) intimidation, (4) professional appearance, (5) organization, (6) confidence instilled in an officer, (7) confidence instilled in the public, and (8) recognizable as law enforcement. Vests with more external attachments were rated as more militarized and intimidating. However, participants also rated militarized appearance and intimidation as the least important attributes when considering external protective vests. Confidence instilled (by the images of vests) in an officer, and in the public, were the highest rated attributes, respectfully. These findings suggest that a militarized and intimidating appearance might not detract from the public’s overall acceptance of external protective vests in law enforcement. In addition, law enforcement majors and non-law enforcement majors differed significantly in their ratings of all eight attributes. This suggests that exposure to law enforcement education might affect public perceptions of external protective vests. It is possible that education of the public on the function (e.g., load distribution) of external protective vest attachments might offset negative perceptions.

[READ THE ARTICLE (Links to an external site.)Links to an external site.](http://www.forcescience.org/articles/vest.pdf)

[(Links to an external site.)Links to an external site.](http://www.forcescience.org/articles/vest.pdf)**Toward a Taxonomy of the Unintentional Discharge of Firearms in Law Enforcement**

John O’Neill, Dawn A. O’Neill, & William J. Lewinski (2017)

Applied Ergonomics

An unintentional discharge (UD) is an activation of the trigger mechanism that results in an unplanned discharge that is outside of the firearm’s prescribed use. UDs can result in injury or death, yet have been understudied in scientific literature. Pre-existing (1974 to 2015) UD reports (N = 137) from seven law enforcement agencies in the United States of America were analyzed by context, officer behavior, type of firearm, and injuries. Over 50% of UDs occurred in contexts with low threat potential while engaged in routine firearm tasks. The remaining UDs occurred in contexts with elevated to high threat potential during muscle co-activation, unfamiliar firearm tasks, contact with inanimate objects, and a medical condition. An antecedent-behavior- consequence (A-B-C) taxonomy as well as a standardized reporting form, based on the current findings and the existing literature, are offered as tools for identifying the conditions under which UDs may be likely to occur.

[READ THE ARTICLE (Links to an external site.)Links to an external site.](http://www.forcescience.org/articles/udf.pdf)

[(Links to an external site.)Links to an external site.](http://www.forcescience.org/pronesubject.html)

**Memory and the Operational Witness: Police Officer Recall of Firearms Encounters as a Function of Active Response Role**

Lorraine Hope, David Blocksidge, Fiona Gabbert, James D. Sauer, William J. Lewinski, Arta Mirashi, & Emel Atuk (2016)

Law and Human Behavior

Investigations following critical events often depend on accurate and detailed recall accounts from operational witnesses (e.g., law enforcement officers, military personnel, emergency responders). However, the challenging, and often stressful, nature of such events, together with the cognitive demands imposed on operational witnesses as a function of their active role, may impair subsequent recall. We compared the recall performance of operational active witnesses with that of non-operational observer witnesses for a challenging simulated scenario involving an armed perpetrator. Seventy-six police officers participated in pairs. In each pair, one officer (active witness) was armed and instructed to respond to the scenario as they would in an operational setting, while the other (observer witness) was instructed to simply observe the scenario. All officers then completed free reports and responded to closed questions. Active witnesses showed a pattern of heart rate activity consistent with an increased stress response during the event, and subsequently reported significantly fewer correct details about the critical phase of the scenario. The level of stress experienced during the scenario mediated the effect of officer role on memory performance. Across the sample, almost one-fifth of officers reported that the perpetrator had pointed a weapon at them although the weapon had remained in the waistband of the perpetrator’s trousers throughout the critical phase of the encounter. These findings highlight the need for investigator awareness of both the impact of operational involvement and stress-related effects on memory for ostensibly salient details, and reflect the importance of careful and ethical information elicitation techniques.

[READ THE ARTICLE (Links to an external site.)Links to an external site.](http://www.forcescience.org/articles/opwt.pdf)

**The Real Risks During Deadly Police Shootouts: Accuracy of the Naive Shooter**

William J. Lewinski, Ron Avery, Jennifer L. Dysterheft, Nathan D. Dicks, & Jacob M. Bushey (2015)

International Journal of Police Science Management

This study aimed to examine the level of shooting accuracy demonstrated by law enforcement recruits upon completion of their law enforcement firearms training in comparison with novice shooters. One hundred and ninety-five male and 52 female law enforcement recruits volunteered. Participants were separated by firearms experience into the following groups: expert (completed law enforcement firearms course, n = 83), intermediate (recreational experience, n = 71) and novice (minimal/no experience, n = 93). All subjects were tested for accuracy at target locations from 3 to 75 ft. For all locations, no difference was found in accuracy between expert and intermediate groups (p > 0.30). Experts and intermediates had better results than novices on all locations (p < 0.05) except from 3 to 15 ft. Alarmingly, experts were only 10% more accurate than novices between 3 and IS ft. Finally, novices and intermediate shooters were more likely to hit head locations from 3 ft (57%), whereas experts mainly hit the body location (78%). The results of this study indicate that officers had no advantage over intermediate shooters and a small advantage over novices.

[READ THE ARTICLE (Links to an external site.)Links to an external site.](http://www.forcescience.org/articles/naiveshooter.pdf)

 [(Links to an external site.)Links to an external site.](http://www.forcescience.org/sprintingperformance.html)[(Links to an external site.)Links to an external site.](http://www.forcescience.org/ambushes.html)[(Links to an external site.)Links to an external site.](http://www.forcescience.org/reaction-time.html)

**The Influence of Start Position, Initial Step Type, and Usage of a Focal Point on Sprinting Performance**

William J. Lewinski, Jennifer L. Dysterheft, Dawn A. Seefeldt, & Robert W. Pettitt (2013)

International Journal of Exercise Science

For many athletes, sprinting acceleration is vital to sport performance. The purpose of this study was to observe the influences of starting position, type of initial step taken, and a focal point on sprinting velocity, stride length, and acceleration over a 9.1 m distance. Two trials of four conditions were video recorded in which subjects had no focal point (n = 10) or a lateral focal point (n = 9). The four conditions were: forwards (control), backwards, 90° left (90°L), and 90° right (90°R). Lower velocities (p > 0.05) were observed with focal point usage from the 90°R and 90°L starting positions. Four initial steps were observed during the forwards, 90°L, and 90°R conditions: backwards step, anterior tilt with forward step, pivot-crossover step, and lateral side step. The use of a backwards step resulted in an increased velocity (+0.80 m·s-1, p < 0.01) for the 90° turn trials and increased acceleration (+ 0.37 m·s-2, p < 0.01). Our results indicate that looking at a target can cause a decline in sprint velocity and acceleration over a short distance. Moreover, utilizing a backwards step to initiate a 90° turn may generate more power and force, increasing their velocity for short sprints. We recommend training athletes with a target or focal points to help combat the reduced speed and initiate movement with initial backwards step.

[READ THE ARTICLE (Links to an external site.)Links to an external site.](http://www.forcescience.org/spimperial.pdf)

**The Influence of Officer Positioning on Movement during a Threatening Traffic Stop Scenario**

William J. Lewinski, Jennifer L. Dysterheft, Dawn A. Seefeldt, & Robert W. Pettitt (2013)

Law Enforcement Executive Forum

Conducting traffic stops is a routine patrol duty of police officers. The most frequent and visible interactions between police officers and the public take place in motor vehicles, most commonly at roadside traffic stops (Eith & Durose, 2011; Harris, 1989; Pinizzotto, Davis, & Miller, 2008). Officers successfully complete the majority of “routine” traffic stops without facing the threat of injury; however, traffic stops can place officers at risk of injury or death either by intended or unintended actions by an assailant or others (Payton, 1964). According to the California Commission on Peace Offi- cer Standards and Training (2005), traffic stops “can be one of the most dangerous duties a patrol officer can perform” (p. 1-3). In a study investigating officer attacks while performing routine traffic stops, one officer reported that as he approached the back door of the vehicle and informed the driver he was stopped for speeding, the driver’s only response was “two shots in the chest from a handgun . . . into my vest” (Pinizzotto et al., 2008). From 2001 to 2010, approximately 60 of 541 officers who were feloniously murdered in the line of duty were killed during a traffic stop, and 55,000 were injured during a traffic stop or pursuit (Federal Bureau of Investigation [FBI], 2010; U.S. Department of Justice, 2011

[READ THE ARTICLE (Links to an external site.)Links to an external site.](http://www.iletsbeiforumjournal.com/images/Issues/FreeIssues/LEEF__ADA_13.1_Critical_Issues_in_Police_Discipline.pdf)  (Please note: The article begins on page 98 of the issue)

**Witnesses in Action: The Effect of Physical Exertion on Recall and Recognition**

Lorraine Hope, William J. Lewinski, Justin Dixon, David Blocksidge, & Fiona Gabbert (2012)

Psychological Science

Understanding memory performance under different operational conditions is critical in many occupational settings. To examine the effect of physical exertion on memory for a witnessed event, we placed two groups of law-enforcement officers in a live, occupationally relevant scenario. One group had previously completed a high-intensity physical-assault exercise, and the other had not. Participants who completed the assault exercise showed impaired recall and recognition performance compared with the control group. Specifically, they provided significantly less accurate information concerning target critical and incidental target individuals encountered during the scenario, recalled less briefing information, and provided fewer briefing updates than control participants did. Exertion was also associated with reduced accuracy in identifying the critical target from a lineup. These results support arousal-based competition accounts proposing differential allocation of resources under physiological arousal. These novel findings relating to eyewitness memory performance have important implications for victims; ordinary citizens who become witnesses; and witnesses in policing, military, and related operational contexts.

[READ THE ARTICLE (Links to an external site.)Links to an external site.](http://www.forcescience.org/articles/witness.pdf)

**Performing Under Pressure: Gaze Control, Decision Making, and Shooting Performance of Elite and Rookie Police Officers**

Joan N. Vickers & William J. Lewinski (2012)

Human Movement Science

Gaze of elite (E) and rookie (R) officers were analyzed as they faced a potentially lethal encounter that required use of a handgun, or inhi- bition of the shot when a cell phone was drawn. The E shot more accurately than the R (E 74.60%; R 53.80%) and made fewer decisions errors in the cell condition when 18.50% of E and 61.50% of R fired at the assailant. E and R did not differ in duration of the draw/aim/fire phases, but the R’s motor onsets were later, during the final second compared to the E’s final 2.5 s. Across the final six fixations the E increased the percent of fixations on the assailant’s weapon/cell to 71% and to 86% on hits, compared to a high of 34% for the R. Before firing, the R made a rapid saccade to their own weapon on 84% of tri- als leading to a failure to fixate the assailant on 50% of trials as they fired. Compared to the R, the E had a longer quiet eye duration on the assailant’s weapon/cell prior to firing. The results provide new insights into officer weapon focus, firearms training and the role of optimal gaze control when under extreme pressure.

[READ THE ARTICLE (Links to an external site.)Links to an external site.](http://www.forcescience.org/articles/gaze.pdf)

**New Developments in Understanding the Behavioral Science Factors in the ‘Stop Shooting’ Response**

William J. Lewinski & Christa Redmann (2009)

Law Enforcement Executive Forum

A law enforcement officer can use deadly force with a firearm in a variety of circumstances. However, once that officer has used deadly force, the microscope of the investigators, his or her department, the courts, and society will focus on the circumstances of the shooting and the officer’s response(s) to those circumstances. Inherent within this investigation will be a close scrutiny on two phases of the shooting. First, the officer’s decision and/or reaction to start shooting and then the officer’s decision and/or reaction to stop shooting. For understandable reasons, in lethal force encounters, the officer’s primary focus is usually on surviving threats to his or her life, and most of the officer’s preparation and training has focused on the officer’s responses that would most likely guarantee that survival. Very little attention if any is focused on immediately stopping shooting when the lethal threat changes—even if stopping immediately was humanly possible.

[READ THE ARTICLE (Links to an external site.)Links to an external site.](http://www.forcescience.org/articles/NewDevelopmentsInUnderstandingTheBehavorial.pdf)

**A Survey of the Research on Human Factors Related to Lethal Force Encounters: Implications for Law Enforcement Training, Tactics, and Testimony**

Audrey Honig & William J. Lewinski (2008)

Law Enforcement Executive Forum

To effectively train and fairly evaluate the performance of an officer in a tactical environment, we must first fully understand how the brain perceives and processes information. This article will begin with an exploration of how the brain/mind processes routine information, followed by a discussion of the research on the effects of stress on perception. The brain refers to the actual organ contained in the skull that coordinates sensation and intellect, while the mind refers to consciousness/thought or intellect/memory. For our purposes, however, the terms will be used interchangeably. Common perceptual distortions and mistakes of fact will be identified, and their effect on reaction time will be discussed, taking into consideration the scientific and practical limitations governing human performance. Training recommendations designed to reduce both the rate and range of perceptual and processing errors while decreasing response lag time, or the time it takes to initiate a response, will also be proposed. Finally, improved methods for mining memory will be offered with the goal of increasing the accuracy of incident recall. The information will be presented as objectively as possible. It will be up to the reader to weigh the research, including potential organizational and/or political ramifications, and the pros and cons of any proposed changes to policies or practices.

[READ THE ARTICLE (Links to an external site.)Links to an external site.](http://www.forcescience.org/articles/Honig129-152.pdf)

**An Examination of Police Officer Mental Chronometry**

Jeffrey Bumgarner, William J. Lewinski, William Hudson, & Craig Stapp (2006)

Journal of The Association for Crime Scene Reconstruction

Every year, dozens of suspicious deadly force encounters involving police officers who have shot suspects pit the reputation of well-regarded and highly trained officers against physical evidence which suggests the officers acted maliciously. In particular, suspects are sometimes found to have been shot in the side or back despite the protestations from the firing officers that they had perceived frontal threats from the suspects. While officer malice is one possible (and sometimes probable) explanation for such shooting incidents, other explanations may also exist. This article reports the findings of a 4-experiment study involving 102 police officers in a major police department in the Southwestern United States. The results of the study demonstrate that many variables go into an officer’s ability to react to stimuli in a timely man- ner and that even in laboratory conditions, there is ample time for the threat picture to change before an officer can either turn on, or turn off, a decision to react by firing a weapon.

[READ THE ARTICLE (Links to an external site.)Links to an external site.](http://www.forcescience.org/articles/mentalchronometry.pdf)

From the article you selected from the approved list above, answer the following questions: For each question below, you must **provide a one paragraph summary for question (make sure to include in-text citation and a reference listing).**

* **Question 8**An **overall summary** of what the main point or “big picture” is.
* **Question 9**. Suggest reasons as to the **need of the specific research** that was conducted. Essentially, you will need to give specific examples of incidents that this area of the force continuum was used either correctly or inadequately in a criminal justice component.
* **Question 10 Sample/Population: Where did he conduct the research? Describe how he got the research sample (i.e.: only officers from one police department or was it a random sample of all police officers?).....**What are the research limitations of this sample?
* **Question 11**What methods are employed to test these? How did he "test" his theory or ideas?
* **Question 12**What evidence of research was presented?
* **Question 13**Discuss any flaws with the article: HINT: Read the artice: The New York Times published an article entitled, "[Training Officers to Shoot First, and He Will Answer Questions Later (Links to an external site.)Links to an external site.](https://www.nytimes.com/2015/08/02/us/training-officers-to-shoot-first-and-he-will-answer-questions-later.html)" which criticized Dr. Bill Lewinski in that his expert opinions in court are always in favor of law enforcement . As such, as a neutral criminal justice research professional, you must take all research articles into consideration of being published with bias. Does the article you selected have bias or what issues do you see?
* **Question 14**. How does the work fit into the wider literature? Write about other research articles that confirm the research findings or articles that contradict the research findings.
* **Question 15**: Desribe your viewpoint about police use of force BEFORE completing this assignment and your current view on police use of force. Essentially, point out what you've learned. NOTE: This answer alone should be at least one paragraph.

References

Apuzzo, M. (2015, August 1). *raining Officers to Shoot First, and He Will Answer Questions Later*. (The New

 York Times Company) Retrieved 2015, from The New York Times: [https://www.nytimes.com/2015/08/02/us/training- (Links to an external site.)Links to an external site.](https://www.nytimes.com/2015/08/02/us/training-)

      officers-to-shoot-first-and-he-will-answer-questions-later.html

Force Science Institute. (2013, February 11). *Force Science*. Retrieved

from Articles: [http://www.forcescience.org/index.html (Links to an external site.)Links to an external site.](http://www.forcescience.org/index.html)

Force Science Institute. (2013, February 11). *Force Science*. Retrieved from Who We

Are: [http://www.forcescience.org/whoweare.html (Links to an external site.)Links to an external site.](http://www.forcescience.org/whoweare.html)

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