

Volume 12 2022 Dedition 2





ILEETA

International Law Enforcement Educators and Trainers Association

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Improving Performance and Decision Making: Gaze Training for Law Enforcement

by Jeff Johnsgaard

Part 1 of 2

his article is third in a series discussing visual training for police officers. Our initial article, "Taking Aim with the Quiet Eye" (ILEETA Journal Vol. 11, Ed. 2) was an introduction for law enforcement instructors who were unfamiliar with the principle of the "Quiet Eye". Our second article, "Quiet Eye Specifics & Gaze-Action Coupling" (ILEETA Journal Vol. 11, Ed. 3) addressed a few specific questions arising from the first article and gave a training progression for leveraging advantage onto the side of officers when utilizing their firearms by practicing a weapon presentation that benefits both a threat or sight focus.

This third article will be printed in two parts and will address the questions we received on the concept of "gaze training".

How to train an officer where to look in a situation to set them up for optimal observations / perceptions to drive better decisions and actions?

To clarify, this question is not the coupling of vision and action as was addressed in our second article. An example of coupling vision and action is target identification and shot placement, which is vitally important but, is only a sliver in time for the overall encounter.

Real life situations have multiple demands for our attention and visual focus and often the added stress of time compression. Suspects are typically the ones initiating actions that police officers need to interpret and react to. Therefore, it is beneficial to immediately perceive a threat cue. Even more optimal is to understand when a situation is unfolding toward a possible threat in order to act and hopefully negate or diminish it.

The Quiet Eye technique is one part of a method for gaze training, especially in aiming tasks. It has been found effective in both increasing performance and in arousal control to increase performance under pressure (Vickers, 20007).

This article will look at the research on gaze training for an entire situation and not just the act of aiming and

firing.

We would like to discuss the following two questions;

- Is there a more optimal place for an officer to look when in a situation?
- 2. If yes, what are best practices for training implementation?

Is there an optimal place for an officer to look in a situation?

Research from Liu et al. (2021) found that novice laparoscopic surgeons could be trained to match the behavioral characteristics of expert surgeons but their gaze patterns during the length of the surgery were not as optimal. This was the case even when the novice's physical movements were improved to the level of the experts.

Even when performing at expert levels for the procedure, the novices had fewer fixations on objects they were manipulating or targeting. The authors identified this as the novices lacking critical information for hazard detection, which the experts had. Meaning novices could be trained to perform in a manner indistinguishable from experts but their gaze behavior was still less optimal. Gaze did not improve proportionally.

This example from outside of the Law Enforcement community strongly suggests training to an advanced skill level does not always mean that gaze behavior is also optimal. So, how do experts get to this expert gaze level? Was it just experience or can it be done on purpose in less time?

First;

What about Law Enforcement relevant tasks?

In, Visual Attention and the Transition from Novice to Advanced Driver, Underwood (2007) was able to identify expert police drivers as those able to increase the number



Performance...con't

of horizontal fixations on the roadway when encountering increasingly demanding driving environments. Underwood also identified the ability of expert drivers to refocus elsewhere after having fixated on something and are less vulnerable to attentional capture. Third, experts were more likely to seek out and monitor potential hazard locations during increased road complexity then novices were.

Underwood concludes that novice drivers scan the roadway less than officers with more advanced driver training and experience. Novices tend to focus their fixations on the roadway directly in front of them while more highly trained drivers scan more, especially to the sides (horizontally). Novices also are more prone to having their vision and attention captured for longer by visually novel things even if these things are not relevant to their safe driving.

Is there a specific training protocol for LE driver training?

Underwood discussed training done in a laboratory with video for novice drivers which had very positive effect. The novices gaze behaviour (scanning of the roadway) improved with as little as one training session though far greater benefits emerged with multiple sessions. The scanning behavior and hazard anticipation all increases. More importantly, there was transfer of these skills to real life driving out of the laboratory. This video training was inexpensive and fairly brief.

Strong evidence suggests that when driving there are optimal places for an officer to look to perform safer. Also, there is a straightforward method for passing on this learning and the technique for scanning or gaze behaviour that has shown transmissible results in as few as one or a couple training sessions.

What about LE skills other than driving?

In, Performing Under Pressure: Gaze Control, Decision Making and Shooting Performance of Elite and Rookie Police Officers, Vickers & Lewinski (2012) identified expert officers as having many more fixations on successful attempts 86% vs rookies at 34% on the suspects weapon/cell phone prior to the decision to fire/not fire. Interestingly the experts did not move to shoot/no shoot faster than the rookies, but the experts did move an average of 2.5 seconds earlier to that pivotal decision point. This is a substantial finding as moving 2.5 seconds sooner to fire in a close range gunfight can be argued as a substantial advantage, especially when the elite made far fewer errors, experts 18.5% error vs novices 61.5%.

The expert officers in the Vickers & Lewinski study can be argued to have better gaze behaviour. You could think of these experts as understanding better how an event like a sudden pistol/cell phone grab, aggressive turn and presentation was likely to unfold. They then shifted their eyes and arguably their attention to a specific spot to look for a specific cue in order to make a correct decision on their action or inaction.

Many experts in this study fixated on the elbow movement of the suspect. That movement was consistent with a weapon grab from the waistband. The suspect then started to turn toward them and they reacted by moving their eyes to where the hand (pistol/cell phone) was likely to be. This faster onset and longer duration of fixation could be what allowed them to form an accurate perception and make less errors.

What about officer's gaze patterns over an entire incident not just for a few seconds of decision-making?

In, Gaze Control in Law Enforcement: Comparing a Tactical Police Unit to Patrol Officers, (Heusler & Sutter, 2020) this exact question was addressed. The experiment took three groups of officers, 1 = Tactical Unit Trained, 2 = Patrol with same years of service/gender/age as the Tactical Unit Trained and 3 = Patrol with less years of service than the other officers in the study. In brief, all were shown four video scenarios while wearing eye tracking glasses and being armed with a pistol arcade gun.

Results showed the tactically trained officers fixated

Performance...con't

significantly longer on the hands and hip region of suspects in the video situations than the Patrol officers of the same years of service and even more than the Patrol of less years of service.

The authors conclude the locations of hands and beltline/hips to be more "tactically crucial". Though Patrol officers of the same years of service had more fixations than the junior Patrol officers, it suggests that some type of training tactical officers received and not simply years of service are responsible for a greater difference in gaze behavior. This is an important finding as it can drive an evaluation of the expert performers to help identify what helped them to gain more optimal gaze behavior.

We have now answered the first question posed in this article; Are there more optimal places for an officer to look when in a situation to set them up for accurate and faster better decision-making? We have presented only a very small part of the wealth of scientific evidence dealing with physical performance and gaze behavior. We have cited specific Law Enforcement studies for officers engaged in driving at high speeds and for dealing with suspects in person.

Part two of this article will go on to answer the second question posed; What are the best practices for teaching an officer this optimal gaze bahevior?

Citations

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