A Rebuttal to Johnsgaard and "Red Dots – Are We Training to Use Them Best?"

Evidence-based recommendations should be based on the evidence.

In 2024, an article titled, Red Dots – Are We Training to Use Them Best? was published on the International Association of Law Enforcement Firearms Instructors (IALEFI) website (Johnsgaard, 2024). We were sent this article by a third party and, after reviewing it, found that while the author offers a thought-provoking perspective on use-of-force training (particularly regarding the need for early action), several assertions within the article lack robust evidence and misinterpret key findings from the cited literature.

A closer examination of the cited sources revealed that several of these assertions are not just unsupported but are, in fact, directly contradicted by the very studies referenced. Additionally, we observed attempts to frame terminology in ways that could mislead readers and compromise the industry's understanding of both the science of human performance and of shooting techniques.

This rebuttal critically examines several of these issues. We seek to clarify potential misconceptions and offer a balanced evaluation grounded in current research and established standards of performance. Our goal is to foster a more rigorous and accurate understanding of the cited evidence regarding these topics and how it applies to the development and implementation of firearms and other use-of-force training.

We contacted the author to request clarification on specific points and offered to include any response in our rebuttal. The author (whom we know personally) acknowledged our contact. However, as of this writing, we have not received a response. We remain open to further dialogue and would welcome a public debate. In the absence of this clarification, we will rely solely on the article as presented and interpreted.

Here, we will not delve into every topic where we had concerns (our private response was nearly 50 pages in length); however, there are three specific areas that we feel merit a public rebuttal in the interests of both officer and public safety.

Area One: Shooting Technique

The first is the article's core recommendation regarding *shooting technique* (as opposed to tactics or training method). Summarizing our understanding of the article's recommendation, this is to train officers to visually focus on a small area of the intended target, ignore the sighting system of the pistol, and to both present the weapon and deliver a fusillade of rounds as quickly as possible.

The foundation of the article's claims and recommendations specific to the visual components of shooting technique is a Force Science study (Vickers & Lewinski, 2011). Several photographs taken from this research are shared within the article. Johnsgaard claims that both these pictures and the results of the study show that officers who exhibit higher levels of performance do not use the sighting system on their weapons.

He claims the study demonstrates that this application of technique (i.e., nonvisually aimed fire) produces both better use-of-force decisions and more accurate fire in real-world conditions. This assertion is then used to support his recommendations regarding shooting technique.

We have previously publicly advocated for basing firearms skill training around combat-relevant visually aimed fire techniques (Salomon, 2021). This recommendation is based on the underlying neurological functions involved in skills learning and how these contribute to performance in stressful conditions.

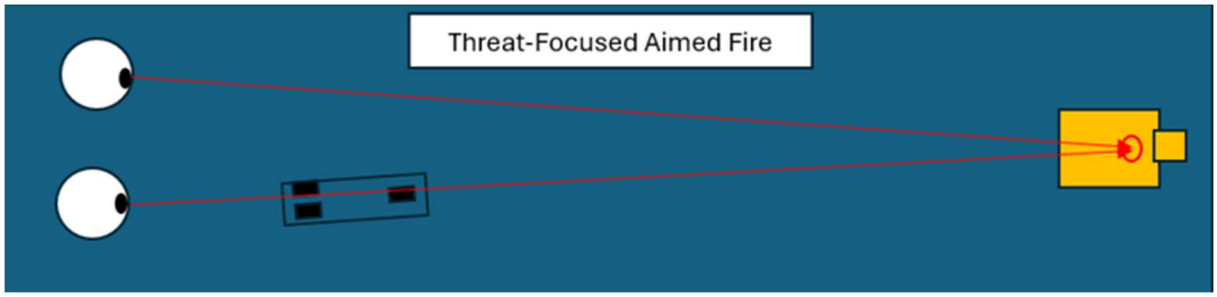
As a general practice, we do not endorse or comment on specific shooting techniques or tactics, as these areas are not our industry focus. In keeping with this policy, we will not do so here. What we believe does need to be addressed is the fact that Johnsgaard's core claims about the study he cites are refuted both by the study's data and by the pictures that he supplies as evidence.

Before moving on, it is important to note what eye tracking tools and software do. For our purposes here, that is to identify the point where the foveal vision of the two eyes have converged. The software does NOT provide insight into what visual information (including nonconvergent and peripheral visual input) is being processed and/or used by the participant.

For example, in the situation represented by the graphic below, the eye tracking software would show that the participant was looking at the high center of the

target. It would not show the use of the weapons sights by the user, even though they are clearly aligned with the shooter's eye and being used to aim the firearm.

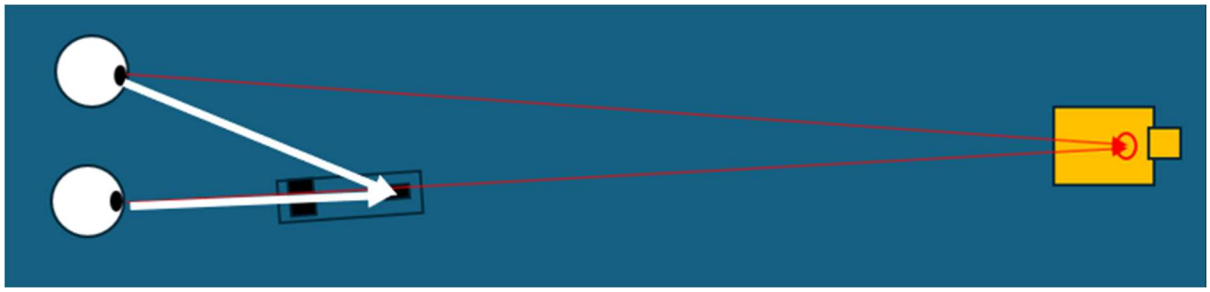
Figure 1



***Note*. Vision converged on the target does not preclude use of weapon sights.**

For eye tracking tools to show visual use of the weapon sighting system, the two eyes would need to be converged on the front sight (see white lines in Figure 2 below).

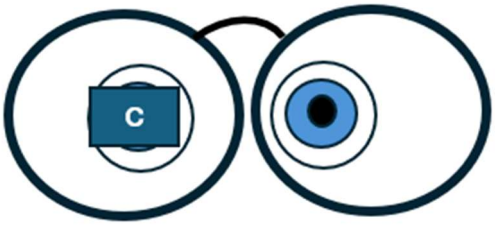
Figure 2



***Note*. Only eye convergence on the weapon would register with eye tracking software.**

It is also important to note that the camera showing the officer's "view" does not accurately represent *what the officer sees*, particularly at close range, as the camera is not placed directly in front of the eye. If it were, the officer's vision would be occluded, at least with the technology that was used at the time of the study.

Figure 3

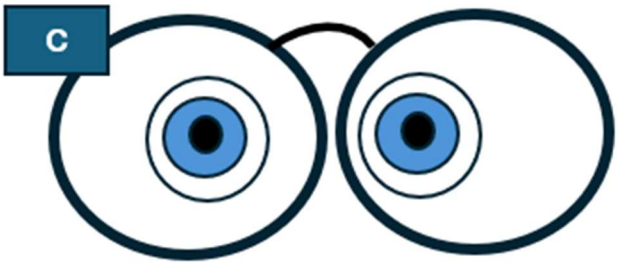


***Note*. A camera showing the same thing as the wearer's eye would occlude vision.**

The specific layout of the equipment used in the study is not provided in the article, nor in the study itself. Internet research also did not produce the specific configuration of the equipment used in this study, which was published in 2011.

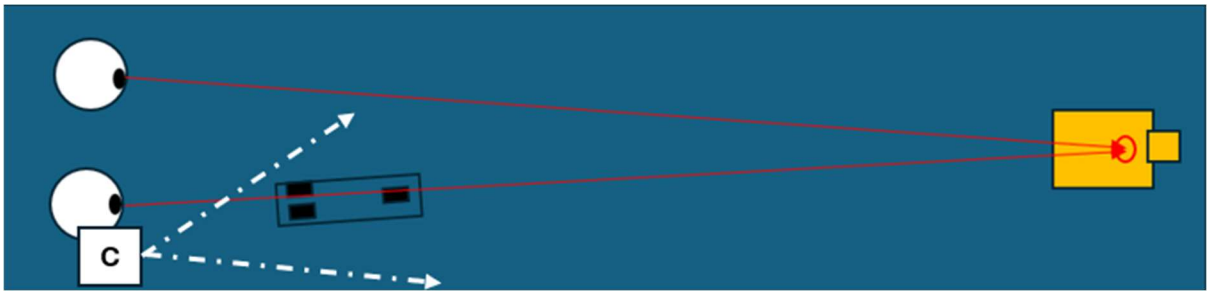
Newer eye tracking equipment places the camera in an eyeglasses frame between the two eyes and above the bridge of the nose. However, the equipment used in this study appears to have used vision-tracking devices configured in a manner very similar to the simple graphic below, where a camera was mounted at or near the top right of the eyewear frame.

Figure 4



***Note*. This is the approximate location of the "first-person" camera used in the study.**

Figure 5



***Note*. This is a different view of the approximate position of the "first-person" camera.**

Please do not take our word for this.

Using a verified unloaded weapon (weapons safety is priority here), blue gun, or other inert training device, use target-focused aiming techniques to focus both of your eyes on a point in the distance at 5 to 7 yards and simultaneously align the sights with your right eye and the same point in the distance.

While you do this, have a friend (or using your other hand) put a phone's camera directly above and to the right of your right eye and snap a picture. Then compare this image to the images shown both in the original article and below.

With this background, let's look at the information presented (both in the article and in the cited studies) and compare it to Johnsgaard's claim that the elite level officers in the study are not visually aiming their weapons.

The basis of Johnsgaard's claim is the assertion that the picture presented below shows that the elite officer did not use the weapon sights and was instead looking at the subject's chest. Indeed, the eye tracking software shows that the officer's eyes converged on the subject's center of mass, not on the weapon sight.

All photographs are property of the Force Science Institute and are reused here with permission.

Figure 6

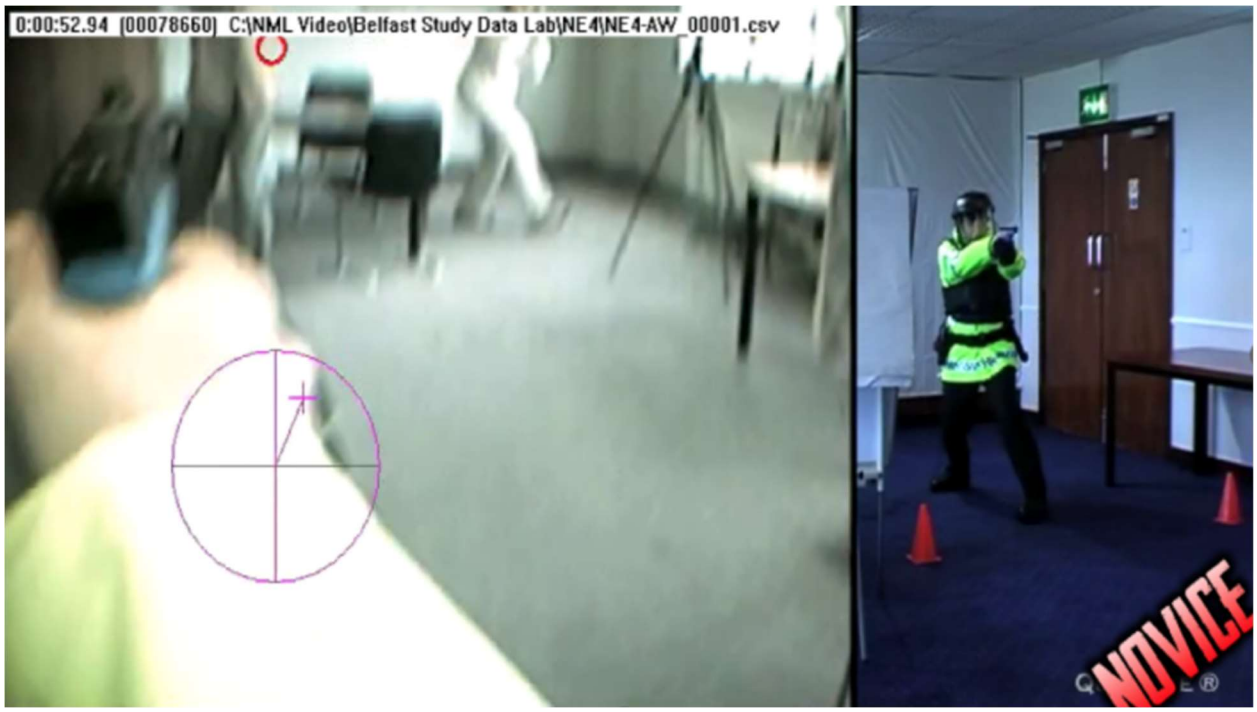
***Note*. Elite officer performance measured by eye tracking software (red circle indicates the conversion of foveal vision.)**

Johnsgaard contrasts this to the performance of the rookie, who first converges both eyes on the weapon as it rises during presentation, then shifts his gaze back toward the subject, though not directly in the center of the subject's chest in this snapshot (see pictures below).

Figure 7

***Note*. Non-Elite Officer looks at the pistol during presentation.**

Figure 8



***Note*. Non-Elite officer looks back toward the subject during engagement.**

Johnsgaard supplies these pictures as evidence for his claim that the elite officer was **not** using the weapon sights, while the rookie officer was *attempting* to use the weapon sights. He then uses this assertion to support his training recommendation for nonvisually aimed fire, as the elite officers in the study made better decisions and fired more accurately than the rookie officers.

It is worthwhile to point out that still pictures provide only a brief snapshot of performance. Therefore, they are of limited use for analyzing visual focus throughout the duration of an event.

Nevertheless, both the pictures and other data contained in the cited study conclusively debunk his claims. First, let us look closer at the picture taken from the front of the elite officer during the engagement.

Figure 9

***Note*. Zooming in on the elite officer's shooting position with head tilt (arrow added) in the above photograph**

With a closer look, one can see that this officer's head is cocked down and to the right. This is a movement normally used to align the shooter's dominant eye with the sight axis of the pistol. This is consistent with (though not determinative of) body mechanics that are used when applying visually sighted fire with a handgun.

Figure 10

Note. The picture from the article showing the "elite" officer's engagement (red arrows added)

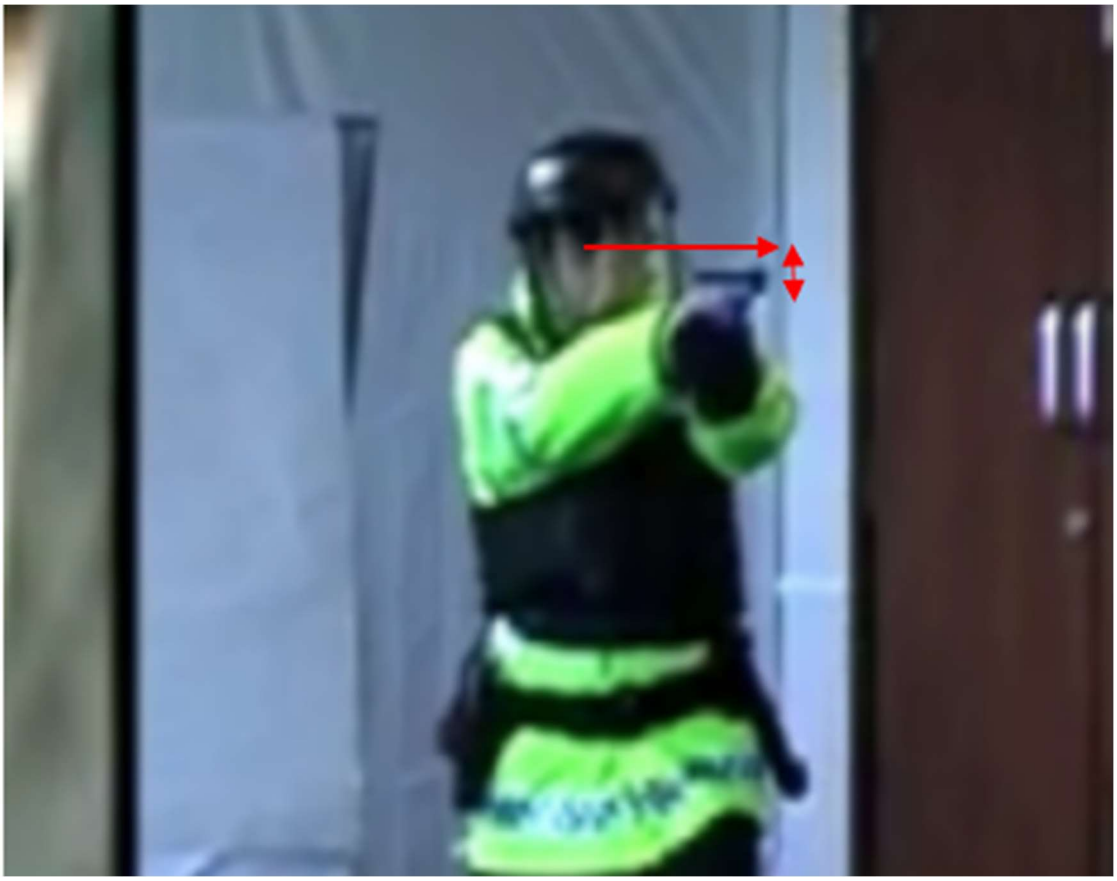
Further analysis of both the provided pictures in Figure 10 shows the level of the weapon sights to be aligned directly with the level of the officer's vision. The "first-person" view picture is consistent with the view from a camera mounted on the upper corner of the eyewear frame showing visually aimed fire using the sights for a center of mass engagement (reference this against your own photograph as recommended above).

The pictures indicate that it is, in fact, the rookie officer who is not using the sighting system of the pistol to shoot. The sights of the weapon are significantly below the rookie officer's vision in the picture provided. Therefore, using the weapon sights in alignment with the intended target would not be possible. (See Figures 11 and 12 below).

Figure 11

***Note*. A picture from the article showing the rookie's engagement (red arrows added)**

Figure 12



***Note*. A picture from the article showing the rookie's engagement (red arrows added)**

Contrary to Johnsgaard's claim, the images he provides indicate that the elite officer shown in these photographs is almost certainly using visually sighted fire, while the rookie officer, ironically, appears to be attempting to use a shooting technique that is very similar to the one Johnsgaard promotes.

It is not only the pictures that fail to support Johnsgaard's claim about the study's results regarding the elite officers' use of weapons sights. Other information provided in the same study (Lewinski & Vickers, 2011) conclusively debunks it.

First, the study *explicitly* indicates in its text that the elite officers used sighted fire. "Elite shooters who fixated the target first and never let their gaze deviate from the

target as they raised their pistol and aligned the sights …" (Lewinski & Vickers, 2011, p. 102).

The study also references documentation that the rookie officers were specifically trained to look at their weapons sights before, *but not during* shooting—when they were taught to look back at the target (Lewinski & Vickers, 2011, p. 102; Hendrick, Paradis, & Hornick, 2008; Morrison & Vila, 1998).

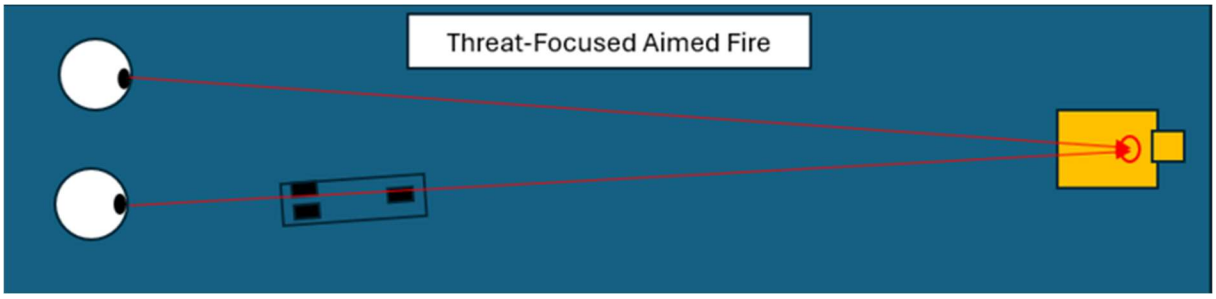
This somewhat odd shooting method (at least as compared against the Cooper-centric or Applegate-centric firearms training models that are prevalent in the US. The study was done in Belfast, Ireland.) seems to be confirmed by the pictures. They show the rookie looking down at the weapon during presentation but not even bringing it fully up to eye level while shooting.

The study's data, collected by eye tracking software, also plainly shows that *both* the elite officers and the rookie officers shifted eye convergence to their own weapons during the presentation and engagement process (Lewinski & Vickers, 2011, Figure 8).

The study further documents that the elite officers (who exhibited significantly better accuracy) spent ***more*** time aiming than the rookie officers did (Lewinski & Vickers, 2011, Table 2).

Rookie officers did spend more time in the final phase of engagement *with their eyes converged on their own weapons* (approximately 0.25 s for rookies vs 0.125 s for elites (Lewinski & Vickers, 2011, Figure 8)). However, as we point out above, eye convergence on the weapon is **completely irrelevant** as to whether or not visually sighted fire is applied.

Figure 13



Note. Visual convergence on the weapon is irrelevant to use of a sighting system for close-range engagements.

Indeed, the use of training techniques that ensure visually sighted fire rather than those which inadvertently promote nonvisually aimed fire is an explicit recommendation made by the study's authors (Lewinski & Vickers, 2011, p. 114).

Regardless of any opinions with respect to optimal shooting and training techniques, both Johnsgaard's interpretation of the photographs and his representation of the contents of this study are incorrect. The study shows the opposite of what he claims and in no way supports his recommendations regarding shooting technique.

Area Two: Counter-Ambush Technique

While there are some technical differences, we agree with both Johnsgaard's promotion of early action and decision-making as an important focus of training (Salomon, 2016). We further both support and advocate for dryfire as well as both decision-making and weapons-handling training that incorporates the use of human-based visual stimulus (Salomon, 2016).

With that said, the second area we wish to address is his recommendation that firearms training should *prioritize* speed of presentation and rapid rate of fire *at close ranges*. This recommendation is made, along with the implication that this can help address the problem of officers being killed or injured (often without mounting an effective response) during ambush attacks.

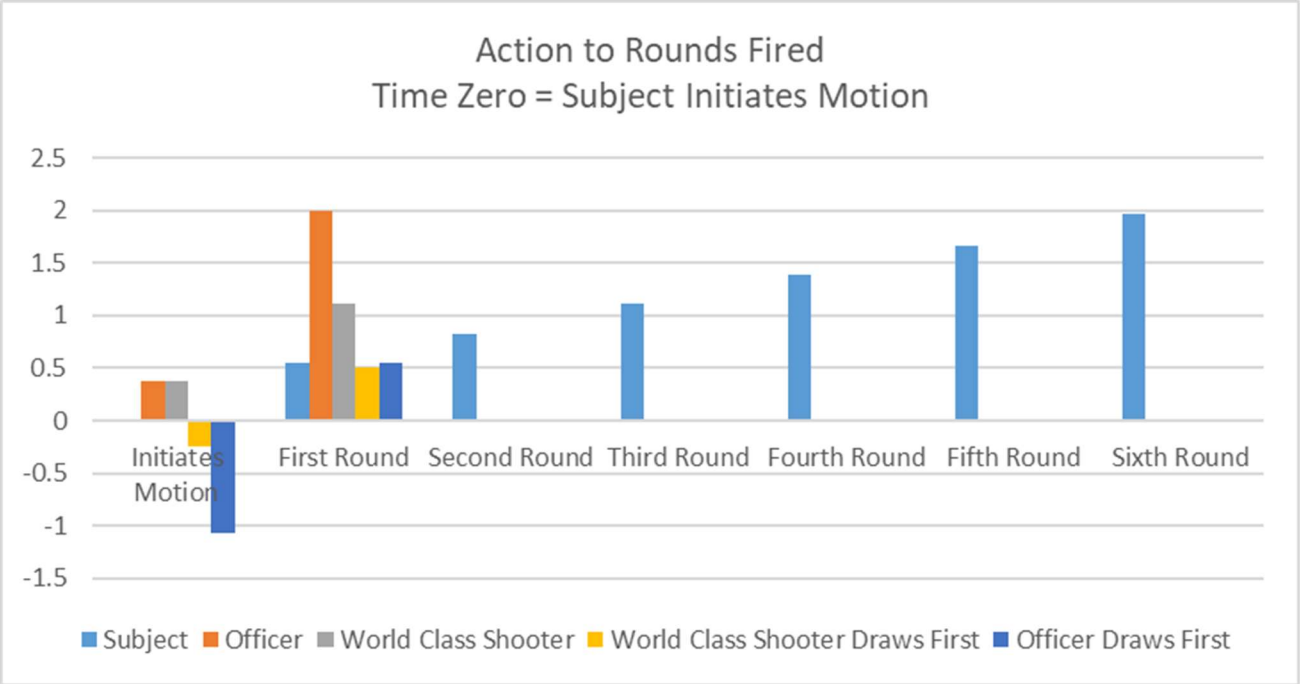
In support of this recommendation, Johnsgaard presents data from several sources highlighting the speed of close-range assaults. He also presents metrics showing consistent failure of officers to respond effectively during these encounters, with many officers failing to even fire a single round (Johnsgaard, 2024).

What goes unmentioned is that data collected in the Force Science study on positioning during a traffic stop that he frequently cites (Dysterheft et. al., 2013) showed that officers who did NOT employ defensive tactics (as opposed to

employing firearms skills, mobility, or a combination) in response to the ambush were "often shot multiple times."

Indeed, analysis of that same study's data shows that during a close-quarters ambush, the average police officer would need to begin the process of drawing and firing at least one full second prior to a subject even starting to move to fire *at the same time* as the attacker. Even a world-class shooter drawing from competition gear would need to initiate the draw first to fire simultaneously with the attacker.

Figure 14



Note. Graph created with data from (Dysterheft et.al, 2013; Lewinski et. al., 2015) (Time vertical [*y*-axis] in seconds)

Johnsgaard also further misrepresents the content of the study he cites, comparing rookie to elite performance (Lewinski & Vickers, 2011). He correctly notes that this study shows elite officers moving sooner, not faster than rookie officers. However, he neglects to include that while the elite officers consistently fired before the rookies did within the scripted scenario, they also on average presented and fired **more than twice as slowly** (Lewinski & Vickers, 2011, p. 113).

Rookie officers in that study averaged approximately one second to fire from the holster. In contrast, elite officers' draw-to-fire time averaged approximately two and half seconds (Lewinski & Vickers, 2011, Figure 3; p. 113) even though the elite officers, who according to the study were members of an Emergency Response Team, may reasonably be presumed to have been trained to a significantly higher standard than the rookies.

Note that these times are referenced from the moment of first movement of the officer as measured by video camera, ***not*** *from a stimulus like a buzzer, such as is common in range training. To reasonably compare this data to range performance with a shot timer, add between 0.25 to 0.5 seconds.*

The reason for this apparent discrepancy (the shooter with the slower draw-to-fire time fires before the shooter with the faster draw-to-fire time) is that the elite officers in the study began drawing their weapons not just before the rookies did, but *before the subject presented a weapon*—or even turned.

In contrast, the rookies appear to have waited to attempt to definitively identify a threat before initiating the draw. These effects can be seen in action by looking back at the pictures shown above.

We want to make clear that we do not disagree with teaching fast and efficient gun handling. In fact, we actively promote it. We also do not disagree with (and also promote) training police officers (or anyone learning combative shooting) to shoot effectively at speed.

However, Johnsgaard's implication that rapid drawing and shooting at close ranges is a valid solution to close-quarters ambush attacks and therefore should be the priority in training is at odds with the content of the studies he cites.

The data within these sources is clear. Even the fastest shooters in the world would need to draw to fire **before the subject even started to move** to fire *simultaneously* with the attacker in a close-quarters ambush.

Pre-emptive action, occurring before the attack is ever initiated, is likely the only systemically reliable solution to the close-quarters ambush.

Any *reactive* action (starting after the attack has begun) should (at least initially) prioritize first not getting shot and then controlling the subject's capability to continue to carry out a deadly attack against the officer. The time necessary to employ a holstered handgun and achieve these results with the terminal ballistic effects of handgun rounds is simply too long to have a systemically meaningful chance of preventing officers from being shot in these attacks. The time would be too long even for world-class competitive shooters wearing competition gear.

Since the officer's actions should ideally begin before an ambush attack *starts*, the initial actions taken would necessarily be based on factors other than a deadly assault. These factors most likely would not justify deadly force and may not justify the use of any force at all, at least at the outset.

Unless pre-emptive use of deadly force is a valid moral, legal, and tactical course of action, there are no evidence- or human-factors basis for any assertion that rapid drawing and engaging with a firearm is, by itself, a systemically valid solution for either countering or surviving a close-quarters ambush.

In fact, recommending that agencies focus limited training hours on rapid drawing and firing at close range may set officers up for failure by providing them a "solution" that has no evidentiary basis for working and much evidence (such as that presented by Johnsgaard) of foreseeable catastrophic failure.

This training approach may have a further negative impact of biasing officers towards *deciding* to remain in tactically disadvantaged positions (i.e., near-contact distances) when alternatives are available.

These decisions would not be because such positioning is necessary or desirable tactically. Rather, the decisions would be subconsciously based on the situational context matching the context presented during training and/or the environmentally formed limits of the officer's combat-relevant firearms skills. If the officer's combat shooting skills stop working effectively inside 5 yards, then the officer may subconsciously be contextually limited to distances inside 5 yards during encounters where deadly force is perceived to be a possible outcome.

These secondary contextual impacts—and the possible resulting association of drawing to fire as being the primary solution to these types of attacks—may also

inhibit officers from taking other (and much earlier) actions that could have better potential to produce a successful outcome.

Area Three: Firearms Training Process

There is one additional element that we will address here. This is perhaps the most critical, because there is a potential interpretation of Johnsgaard's training and technique recommendations that could be tremendously harmful if adopted by any individual, trainer, or agency.

He is not clear about the specific details of his recommended firearms employment technique or training method. As noted above, he also did not respond to our inquiry. However, the article could easily be interpreted as suggesting that the skill sequence of engaging with a firearm at close range should be *initiated* by shifting visual focus to a small part of the target's (subject's) upper torso or other intended impact area.

Johnsgaard attempts to label his recommended engagement technique as "gaze-action coupling." This term refers to the outcome from neurologically wiring visuomotor skills and specific elements of visual processing together into more complex skill sequences. These sequences involve both specific visual techniques and physical movement. In other words, a specific visual skill (gaze) is neurologically wired (coupled) to a specific physical action.

Johnsgaard's use of this term is exactly like calling your preferred method of drawing a handgun "hand-arm motor skill" and then attempting to coin the phrase as your own personal brand of shooting technique. "Instructors should stop teaching either the four-step or three-step draw stroke. Instead, *hand-arm motor skilling* should be the technique that is taught for presentation of the handgun." It is an absurd, confusing, and detrimental use of terminology.

We point this out neither as a personal attack, nor to be petty. Techniques for firearms employment for professionals are important issues—life and death stuff. To advance the science and practice of application of force, it is critical that both researchers and practitioners from all areas of the industry be able to discuss and debate these issues clearly and with minimal confusion. Mislabeling and erroneously hijacking important terminology makes this much more difficult and confusing than it needs to be and should be avoided.

More importantly, and in yet another dose of irony, the training process Johnsgaard appears to be recommending indicates that he may not understand either the mechanisms or outcomes involved with gaze-action coupling.

The development of any habituated skill sequence is accomplished through the construction of neural circuitry. Physical connections are made between areas of the brain through training activity. As these connections are used repeatedly, they become strengthened and insulated. Signals sent through these connections become faster and more efficient.

Well-practiced (unconsciously competent) skills and actions can be performed effectively under stress because the brain has created efficient pathways (circuits) between the relevant processing areas involved in the action.

Efficient neural circuitry can be useful; however, it is not **always** useful. Everyone who is familiar with, has experienced, or has witnessed training scars manifest either in training or on the street can attest that unconscious competence and performance of a well-practiced habit is efficient. It is not, however, necessarily beneficial.

If the interpretation above (initiating firearms engagement with the commonly applied multi-use visual skill of shifting visual focus to a small part of the target or subject) in fact matches Johnsgaard's intent, then his recommendation should be ignored with prejudice.

This interpretation would have officers practice *initiating* drawing and launching a barrage of nonvisually aimed—when matched with his other technique recommendation—fire by using a visuomotor shift that 1) is also used to see fine details on the subject (among other tactically relevant purposes) and 2) necessarily produces tunnel vision, reducing the officer's situational awareness and responsiveness.

Whether or not this recommendation is Johnsgaard's intent, we want to make it crystal clear that this specific visuomotor and motor skill sequence should **never** be trained or practiced by anyone. Ever.

Tactics and shooting techniques are not where we focus at Building Shooters. Training methodology is. Through that lens, training this way would border on gross professional negligence at best.

Imagine the following conversation occurring in court:

> Q: "Why did you shoot my client, officer?"
>
> A: "Because I looked closely at him."
>
> Q: "Because you looked closely at him?"
>
> A: "I was trained to look closely as the initiation for drawing and firing. I've done it thousands of times, mostly off the range, usually looking at a real person. I didn't mean to shoot him. I just looked closely to see what was on his phone and next thing I knew, I was shooting."
>
> Q: "Did you see his hands go up in the air?"
>
> A: "No, all I could see was the button on his shirt. That's what I was focusing on. I've done it so many times that my eyes naturally shifted there after the phone disappeared from view.
>
> "Everything else was just happening automatically. The action of drawing and shooting was neuroplastically coupled to my gaze-shifting into focused vision at the center of his chest, so what's what I did.
>
> "Shooting him **because** I looked at him is what I was trained to do."

Hopefully this imaginary and abstract example makes the point. If you don't want your officers/guards/soldiers to be at risk of drawing and dumping a mag under stress simply because they shifted their gaze to look for details somewhere, then don't train them to start shooting as fast as they can by using a multi-purpose visual skill that produces tunnel vision as the initiator of the skill sequence.

Developing this specific skill sequence as a habituated neurological coupling of gaze and action would be both dangerous and highly irresponsible.

Final Thoughts

Through the efforts of Dr. Bill Lewinski, the Force Science Institute, and now many others, the application of scientific research and the use of evidence over mere opinion to shape use-of-force training, techniques, tactics, and policy for armed professionals is now front and center. This is long overdue and very welcome.

This change is for the better. It also means that all of us who work in this field (very specifically including those of us with Building Shooters) must remember what evidence and science are. Evidence is simply what the data shows us—no more, no less.

Science is not a brand. Science is challenging ideas. Science *must* involve robust debate. Fundamentally, science *is* debate. Indeed, attacking concepts and ideas is ultimately what makes them strong.

Science is actively looking for errors. Science is a process for asking questions that produces repeatable, measurable, verifiable answers.

Evidence and data are only as good as the questions that were asked, the assumptions that were made, and the limitations of the measurements, tools, and processes involved. Simply adding citations does not make something science, does not make it based on evidence, and certainly does not make it true.

Evidence-based recommendations need to be based on the evidence.

Dustin Salomon is a former naval officer and close protection security operative. He is active as an instructor, speaker, and consultant in the field of firearms and tactical training design, is the author of *Building Shooters: Applying Neuroscience Research to Tactical Training System Design and Training Delivery*, founder of Building Shooters Technology LLC, and inventor of the NURO® Shooting System (Patent Pending).

References

Dysterheft Robb, J., Lewinski, W., Pettitt, R., & O'Neill, D. (2013). The influence of officer positioning on movement during a threatening traffic stop scenario. *Law Enforcement Executive Forum, 13*, 98–109.

Hendrick, H. W., Paradis, P., & Hornick, R. J. (2008). *Human factors issues in handgun safety and forensics*. CRC Press/Taylor Francis.

Johnsgaard, J. (2024). Red Dots – Are We Training to Use Them Best? https://www.ialefi.com/red-dots-are-we-training-to-use-them-best/

Lewinski, W., Dysterheft Robb, J., Bushey, J., & Dicks, N. (2015). Ambushes leading cause of officer fatalities - when every second counts: Analysis of officer movement from trained ready tactical positions. *Law Enforcement Executive Forum*, *15*. https://forcescience.docsend.com/view/ij8nubr8cgmar783

Morrison, G., & Vila, B. (1998). Police handgun qualification: Practical measure or aimless activity? *Policing: An International Journal of Police Strategies and Management* 21, 510–533.

Salomon, D. P. (2016). *Building shooters : applying neuroscience research to tactical training system design and training delivery*. Innovative Services and Solutions LLC.

Salomon, D.P. (2021). *Hitting in combat : the brain science of training to win gunfights.* Innovative Services and Solutions LLC.

Vickers, J., & Lewinski, W. (2011). Performing under pressure: Gaze control, decision making and shooting performance of elite and rookie police officers. *Human Movement Science*, *31*, 101–117. https://doi.org/10.1016/j.humov.2011.04.004