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## **Expert Analysis and Opinions Concerning the Sacramento Police Department Officer Involved Shooting of Stephon Clark**

**Case# 2018-82449**

David M. Blake, M.Sc.

February 5, 2019

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February 5, 2018

Sacramento District Attorney  
901 G Street,  
Sacramento, CA 95814

RE: Sacramento PD OIS 2018-082449

Based on the request from your office, I have reviewed the documents, audio and video recordings associated with the Sacramento Police Department officer-involved-shooting case #18-082449. Based on my review of these files, I have provided the three opinions summarized below:

1. *Based on the totality of the circumstances, a reasonable officer would have developed reasonable suspicion/probable cause to detain/arrest Clark. The subsequent foot pursuit of Clark into a backyard was in line with standard police practices and training.*
2. *Officers Robinet and Mercadal reasonably perceived and had probable cause to believe Clark was an immediate deadly threat causing them to fear death or serious bodily injury<sup>1</sup>. Their response in utilizing deadly force is reasonable and in line with contemporary police practices and training.*
3. *Several aspects of human capabilities and limitations as defined under the umbrella of Human Factors science apply. Ultimately, the application of scientific theory and associated empirical evidence to the number and duration of shots fired provides an understanding of those issues and to rounds entering Mr. Clark's side/back.*

I expand and support my opinions in the attached report. I reserve the right to add, change and delete any of my opinions based on any provision of additional information not reviewed at the time this report was completed. Respectfully,

*David M. Blake*

David M. Blake, M.Sc.

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<sup>1</sup> "A person has probable cause to believe that someone poses a threat of death or great bodily injury when facts known to the person would persuade someone of reasonable caution that the other person is going to cause death or great bodily injury to another". (CalCrim 507. Justifiable Homicide: By Public Officer).



1 **1. General Information**

2  
3 **1.1. Charts/Exhibits:** I have attached charts, exhibits, and photographs that  
4 are intended to support my opinions. Video or single image files listed in  
5 this report are placed in an associated work product folder sent with this  
6 report (Folder: Stephon Clark).  
7

8 **1.2. Materials Reviewed:** The following is a list of files, documents, digital  
9 recordings, photographs, video and other items I reviewed.

- Documents- Report & Summary
- Other items with No PR #
- Photos-No PR #
- PR# 988839-001 W-Jacqueline S [REDACTED]
- PR# 988840-001 David R [REDACTED] Interview
- PR# 988907-001 Scene video Backyard -7572 29th St
- PR# 988913-001 Scene video -29th St
- PR# 989127-001 BWC Det. Krutz
- PR# 989265-001 Video\_7561 29th St\_3-18-18
- PR# 989340-001 Traffic & PODS
- PR# 989927-001 OFC Robinet Interview
- PR# 989927-002 OFC Robinet Round Count
- PR# 989927-003 Phone records-[REDACTED]-Stephon Clark
- PR# 989927-005 042518 Canvas Interviews
- PR# 989927-006 Salena M [REDACTED] phone call
- PR# 989927-007 Shot Spotter Report
- PR# 989927-008 18-82448-cp-1-Clark's phone
- PR# 989927-009 DOJ Download Phone 2018\_0712
- PR# 989927-010 SPD Radio Traffic
- PR# 989927-011 8-21-18 Interviews
- PR# 989927-012 BWC videos 18-80545
- PR# 989927-013 18-80545 CSI photos. DV Report
- PR# 989927-014 DV I Report 18-63183
- PR# 989927-015 PDF's of websites and searches by Clark
- PR# 989927-016 Audio recordings of Clark's jail calls since 8-11-17
- PR# 989927-017 DOJ Interviews with T [REDACTED]
- PR# 989927-018 Audio-911 Call

- PR# 989927-019 BWC video-Mercadal-Robinet-Tayler-Trujillo-Morris
- PR# 989927-020 Star Helicopter Video
- PR# 989927-021 3D Scan by Crime Lab
- PR# 989927-023 Sprint-Verizon Subscriber records -T [REDACTED] V [REDACTED]
- PR# 989927-023 Sprint-Verizon subscriber records-T [REDACTED] and V [REDACTED]
- PR# 989927-025 Shynice T [REDACTED] Interview
- PR# 989927-026 BWC shown together with helicopter video-work product by Mike Baker
- PR# 989927-027 Interview with Emilio V [REDACTED]
- PR# 989927-028 -BWC-Lundgren-Maclean-Griggs
- PR# 989927-029- Blue Ray disc-Enhanced BWC video from DOJ
- PR# 989927-031- Interview- Officer Tayler 10-10-18
- PR# 989927-032- Interview OFC Tatenko 10-15-18
- PR# 989927-033 -Interview -OFC Prah 10-15-18
- PR# 989927-034-Interview - OFC Trujillo 10-15-18
- PR# 989927-035 -Video-BWC Henderson.Tatenko.Prah
- PR# 990469-001 OFC Mercadal Interview
- PR# 990469-005 Officer Lundgren Interview
- PR# 990469-013 Interview Officer Howard
- PR# 990469-015 RT Video
- PR# 992928-002 Officer Hills BWC Footage
- PR# 992928-003 Officer Hills Follow Up Interview
- PR# 992928-004 Officer Pitts Video Admonishment
- PR# 992928-005 Officer Pitts BWC Footage
- PR# 992928-006 Officer Pitts Follow Up Interview
- PR# 1004681-001 Coroner's report
- PR# 990469-016 Clark Probation File.pdf
- Consultation Report Clark 120518.pdf
- California Department of Justice Investigation Report – Brass
- California Department of Justice Investigation Report – Dewar
- California Department of Justice Investigation Report – Cardwell

1

2 **1.3. Definitions and Guiding Principles:**

3 **California Penal Code 196** defines justifiable homicide by public officers as:

1 1. In obedience to any judgment of a competent Court; or,  
2 2. When necessarily committed in overcoming actual resistance to the  
3 execution of some legal process, or in the discharge of any other legal duty; or,  
4 3. When necessarily committed in retaking felons who have been rescued or  
5 have escaped, or when necessarily committed in arresting persons charged  
6 with felony, and who are fleeing from justice or resisting such arrest.  
7

8 **California Penal Code 243(f)(4)** defines serious bodily injury as: "a serious  
9 impairment of physical condition, including, but not limited to, the following: loss  
10 of consciousness, concussion, bone fracture, protracted loss or impairment of  
11 function of any bodily member or organ, a wound requiring extensive suturing  
12 and serious disfigurement".

13 **California Penal Code 835a** states in part, "A peace officer who makes or  
14 attempts to make an arrest need not retreat or desist from his efforts by reason  
15 of the resistance or threatened resistance of the person being arrested; nor shall  
16 such officer be deemed an aggressor or lose his right to self-defense by the use  
17 of reasonable force to effect the arrest or to prevent escape or to overcome  
18 resistance"

19 **California Penal Code 834a** states, "If a person has knowledge, or by the  
20 exercise of reasonable care, should have knowledge, that he is being arrested  
21 by a peace officer, it is the duty of such person to refrain from using force or any  
22 weapon to resist such arrest".

23 **Graham v. Connor 490 U.S. 386, 394 (1989)** defines objectively reasonable force  
24 in situations that are often tense, uncertain, and rapidly evolving. Factors for  
25 consideration include; (1) The severity of the crime, (2) The level of resistance,  
26 and (3) The threat (to officers/citizens) posed by the suspect's resistance. (also  
27 see; "Reasonable Force" and "totality of circumstances").

28 **Reasonable Force** is a standard term defining how much and what kind of force  
29 a peace officer may use in each circumstance. Judgment criteria must include:  
30 (1) the perspective of a reasonable officer, (2) applying only information known  
31 to the officer at the time force was applied, (3) based on the totality of facts  
32 and circumstances confronting the officer without regard to the officer's  
33 underlying intent or motivation, and (4) based on knowledge the officer acted  
34 properly under established law at the time.

35 **Totality of Circumstances** are the facts and circumstances known to the officer  
36 at the time force was used and may include: (1) number of officers vs. suspects,



(2) prior contacts, (3) age, size, and relative strength, (4) special knowledge/skills, (5) injury/exhaustion, (6) mental illness/intoxication, (7) environmental factors, and (8) proximity to potential weapons.

**Scott v. Harris 433 F. 3d 807 (2007)** provides further guidance toward judging reasonable force which focuses upon weighing the nature and quality of the intrusion on the individual's Fourth Amendment interests against the importance of the governmental interests alleged to justify the intrusion (e.g., public safety). The court "rejected respondent's argument that safety could have been assured if the police simply ceased their pursuit."

**Plumhoff v. Rickard, 571 U.S. \_\_\_\_ (2014)** Provides guidance on judging the number of rounds an officer fires: "It makes sense that, if officers are justified in firing at a suspect in order to end a severe threat to public safety, they need not stop shooting until the threat has ended".

## **2. Human Factors**

**2.1. Human Factors Defined** - Human Factors is a multi-disciplinary field grounded in the behavioral and engineering sciences. Human Factors/Ergonomics considers human physiology, psychology, and behavior in the design, maintenance, and use of a variety of products, equipment, facilities, jobs, tasks and overall organizations. In practice, its methods are applied to maximize human performance as well as determine the causes and means for the prevention of injuries, with emphasis placed on how people interact with their environments. Human Factors science has been established in several industries to include; aviation, transportation, medicine, and law enforcement.

### **2.2. Human Factors & Legal Application**

- In a peer reviewed journal article studying law enforcement use of force and applied human factors the author stated, *"The human factors component of the assessment criteria of objectively reasonable force underscores the officer's perception of the incident. To fully understand and apply the "objective reasonableness" standard to an officer's perspective and performance, one should understand the effects of stress and arousal resulting from a fear inducing stimulus. This understanding should then be taken in consideration with all other aspects inclusive under the Graham standard"* (Ross et al., 2012 p.1).

- The IACP Police Psychological Services Section (2013) states: "Officers and agencies, and all those involved in investigating and making official determinations about officer-involved shootings, should become educated about the science of human performance factors".

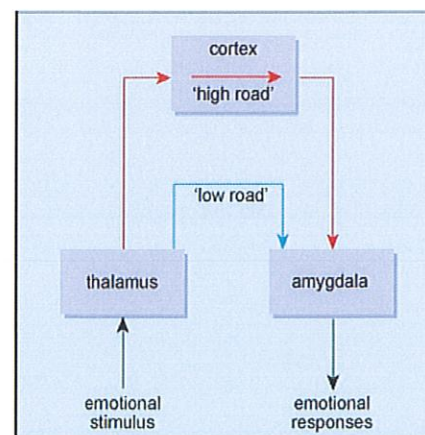
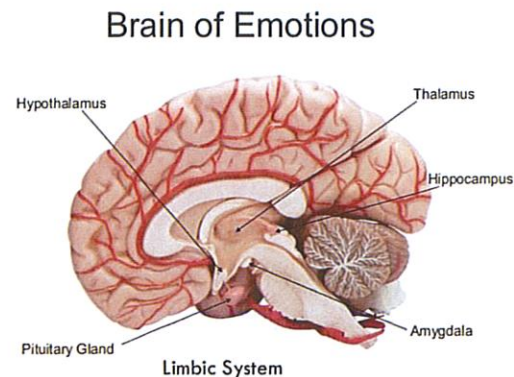
### 2.3. Fear and Physiological Arousal

"Anxiety is a psychological, physiological, and behavioral state induced in animals and humans by a threat to well-being or survival, either actual or potential. It is characterized by increased arousal, expectancy, autonomic and neuroendocrine activation, and specific behavior patterns."<sup>1</sup>

Amygdala: The Amygdala has been identified as the most influential structure within the brain for processing threatening stimuli. Below is a simple summary of the amygdala's influence on human physiology and behavior:

Sensory information received by the brain is bifurcated at the Thalamus; moving to other brain areas in ways often described as a fast and slow track. The fast track provides crude information (e.g., recognizing patterns) to the Amygdala which can produce a quick reactive response prior to higher order processing. The slow route sends the sensory information to the cortex where information can be consciously analyzed, and fear is realized.

- Visual examples of these two processes are provided online by the University of Texas, McGovern Medical School, Department of Neurobiology and Anatomy (Section 6.6; Figure 6.9 and 6.10) <sup>2</sup>.
- The two variant examples provide a visual construct for how the brain quickly interprets



<sup>1</sup> Steimer, T. (2002). The biology of fear and anxiety-related behaviors. *Dialogues in Clinical Neuroscience*, 4(3), 231-249.

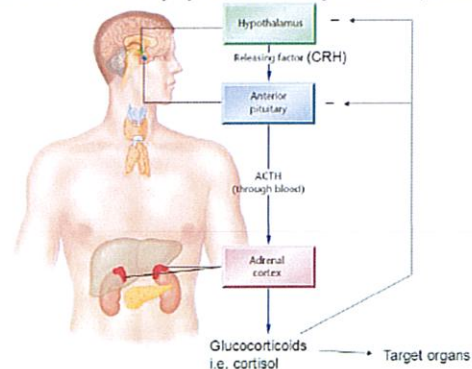
<sup>2</sup> Wright, A. (n.d.). Chapter 6: Limbic System: Amygdala. Retrieved from <https://nba.uth.tmc.edu/neuroscience/s4/chapter06.html>



information causing the body to respond to perceived threats in the same manner (initially) as a real-world threat.

Once the Amygdala processes a threat (real or perceived), the Hypothalamic- Pituitary-Adrenal (HPA) axis is activated. The HPA axis is commonly referred to as the Fight or Flight response. The Fight or Flight response is summarized by a change in arousal and focus of attention influenced by a myriad of stimulant hormones released in the body. Common physiological changes from

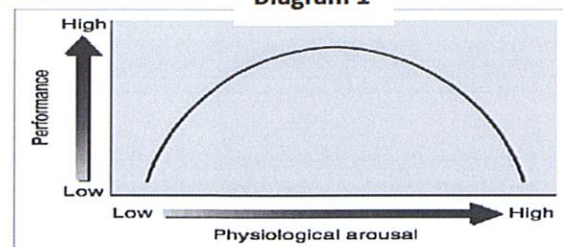
The HPA Axis – the key system controlling stress response



increased stimulant hormone production include: increased heart rate, rapid breathing, pupil dilation, sweating, and increased glucose production. The behavioral results of stimulant hormones on the body can be both positive and adverse as demonstrated in the Yerkes/Dodson inverted U Theory (see Diagram 1). As physiological arousal increases, performance increases, but only to a point. In acute cases, arousal may begin to cause performance deficits.<sup>1</sup>

**The "inverted-U"**<sup>2</sup> is a simplified visual construct often used to show how arousal will increase performance along a curve until the optimal performance point is passed and deficits begin. The point along the

Diagram 1 inverted-U



where performance degrades is variable for each individual and has multiple influencing factors. Some of those factors include; task difficulty, task novelty, expectedness, stress inoculation, training, and personality traits. The scientific literature directly related to a law enforcement officers' use of force demonstrates associated performance enhancement and degradation. Such studies exist both from real and simulated environments

<sup>1</sup> Schmidt, R. A., & Lee, T. D. (2014). *Motor learning and performance: From principles to application*. Champaign, IL: Human Kinetics.

<sup>2</sup> Staal, M.A. (2004) *Stress, Cognition, and Human Performance: A Literature Review and Conceptual Framework*. NASA/TM-2004-212824

showing stress-related performance changes primarily within the realm of visual attention, motor skills, cognition, and memory.

#### **2.4. Perception and Attention**

Perception<sup>1</sup> can be defined as the moment a person becomes aware of sense information, but it does not describe factual understanding or analytical judgement. The environment in which a human being functions is rich with complex and constantly flowing information and our ability to attend (e.g., see, hear, process, retain in memory) to all of it is not possible. For instance, Human visual attention requires momentary fixations (approximately 160 to 200ms) to perceive and process specific stimuli – ensuring efficient multitasking is a myth. While rapid shifting of attention between various stimuli may allow for a global perspective, it also limits the ability to perceive, process, react to, and remember specific items during the attentional shifts. The more environmental stimulus requiring attention, the more opportunity for error as attention moves and fixates between stimuli rapidly (divided attention). During these shifts of attention, items not attended to will also not be perceived, processed, or stored in memory.<sup>2</sup>

Perception leads to focused attention, but focused attention does not mean all information available is continually perceived or processed. Several scientific theories explain this statement.

Selective Attention<sup>3</sup> - A method of understanding selective visual attention is to compare it to a flashlight beam. The flashlight beam provides a clear central focal point in which items may be viewed very clearly, but its effects are limited. As the flashlight beam dims towards the periphery, the ability to perceive peripheral information diminishes. Information outside the lit area of the flashlight beam are not available for perception (not seen). Selective attention aims the "flashlight beam" toward what is important in the visual field. Extreme cases of selective attention are essentially "tunnel vision".

---

<sup>1</sup> Vickers, J.N. (2007) *Perception, Cognition, And Decision Training: The Quiet Eye In Action*. Champaign, IL: Human Kinetics.; Goldstein, E.B., (2011). *Cognitive Psychology*, 3<sup>rd</sup> edition. Wadsworth, CA.

<sup>2</sup> Kanki, B. G. (2018). Cognitive functions and human error. *Space Safety and Human Performance*, 17–52. doi:10.1016/b978-0-08-101869-9.00002-9

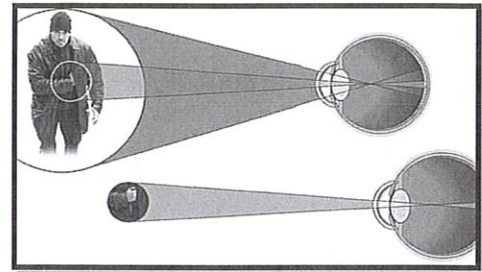
<sup>3</sup> Blake, D. (2015) Body Worn Cameras; Comparing Human and Device to Ensure Unbiased Investigations. *Law Enforcement Executive Forum* 15(4).



1 Inattention Blindness<sup>1</sup> is the term in human factors scientific literature defining  
2 the human inability to see unexpected items within our field of view while  
3 attending to something else. The concept has been widely studied and is  
4 easily demonstrated. Inattention blindness can be demonstrated as seen in this  
5 [video](#)<sup>2</sup>.

6 Change Blindness<sup>3</sup> is the term in human factors scientific literature defining the  
7 human inability to see a change in a visual stimulus within their field of view.  
8 The change of visual stimulus is usually predicated by a disruption (eye  
9 movement, eye blinks). Changes in small and surprisingly large visual stimulus  
10 have been shown to go unnoticed. This concept has also been widely studied  
11 and is easily demonstrated. Change blindness can be demonstrated as seen  
12 in this [video](#).<sup>4</sup>

13 Tunnel Vision or peripheral narrowing<sup>5,6</sup> may be  
14 experienced in life-threatening/dangerous  
15 situations, where vision has been shown to be  
16 increasingly narrowed toward the threat while  
17 blurring or blocking peripheral information (See  
18 diagram).



19 Perceptual distortions<sup>7,8</sup> have been reported  
20 from real-world events and laboratory study's associated with critical stress  
21 both within and outside of law enforcement. Distortions include tunnel hearing,  
22 peripheral narrowing, time speeding up or slowing down, and memory loss for  
23 the event.

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<sup>1</sup> Chabris, Christopher F, Adam Weinberger, Matthew Fontaine, and Daniel J Simons. (2011). "You Do Not Talk About Fight Club If You Do Not Notice Fight Club: Inattentional Blindness for a Simulated Real-world Assault." *i-Perception*, 2(2): 150–153. doi:10.1068/i0436.

<sup>2</sup> <https://www.youtube.com/watch?v=x9EdlBxZAyE>

<sup>3</sup> Simons, D.J. & Levin, D.T. (1998). Failure to detect changes to people during a real-world interaction. *Psychonomic Bulletin & Review*. 5(4) 644-649.

<sup>4</sup> <https://www.youtube.com/watch?v=ubNF9QNEQLA>

<sup>5</sup> Harada, Y., Hakoda, Y, Kuroki, D, Mitsudo, H. (2015). The Presence of a Weapon Shrinks the Functional Field of View. *Applied Cognitive Psychology*. doi: 10.1002/acp.3143

<sup>6</sup> Godnig, E.C. (2003) Tunnel Vision; It's Causes and Treatment Strategies. *Journal of Behavioral Optometry* (14)95-99

<sup>7</sup> Ross et al. (2013). Analyzing Perceptions and Misperceptions of Police Officers in Lethal Force Virtual Simulator Scenarios. *Law Enforcement Executive Forum*. Retrieved from: [http://www.aele.org/Ross\\_Forum\\_2013-2.pdf](http://www.aele.org/Ross_Forum_2013-2.pdf)

<sup>8</sup> Pinizzotto, A.J., Davis, E.F., Miller III, C. (2006) *Violent Encounters; A study of felonious assaults on our nation's law enforcement officers*.

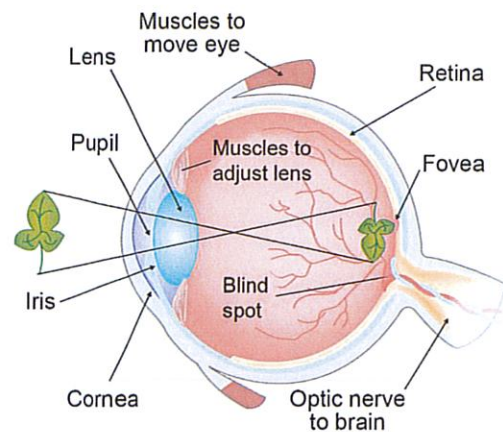
- Ross, Murphy, & Hazlett (2012) exposed police officer participants to three simulations with increasing stress manipulations. Participants completed a memory questionnaire 30 minutes and 48 hours after the experiment. They also provided salivary samples to test for stress biomarkers (e.g., cortisol). In the most stressful setting, participants experienced a myriad of perceptual distortions and memory deficits correlated with increased presence of stimulant hormones.<sup>1</sup>
- Klinger & Brunson (2009)<sup>2</sup> conducted questionnaire and live interviews of police officers (n = 74) involved in shootings. The chart below provides results regarding the officer's perceptual distortions (see Table 1).

**Table 1. Perceptual distortions at two different times during 113 shooting incidents**

Distortion	Prior to Firing		When Firing	
	Number	Percent	Number	Percent
<b>Visual Distortions</b>				
Tunnel vision	35	31%	31	27%
Heightened visual detail	42	37%	39	35%
Both visual distortions	11	10%	12	11%
<b>Auditory Distortions</b>				
Auditory blunting	47	42%	79	70%
Auditory acuity	11	10%	6	5%
Both aural distortions	0	0%	9	8%
<b>Time Distortions</b>				
Slow motion	49	43%	45	40%
Fast motion	14	12%	19	17%
Both time distortions	0	0%	2	2%

## 2.5 Low Light Vision & Mistake of Fact Shootings

Human vision is a complicated process involving the eyes and the brain. The process is most easily described as light reflecting off an object, entering the eye and being displayed (inverted) upon the retina (back of the eye). The retina contains several types of photoreceptor cells that process visual stimuli. The most common types discussed are Rods and Cones.

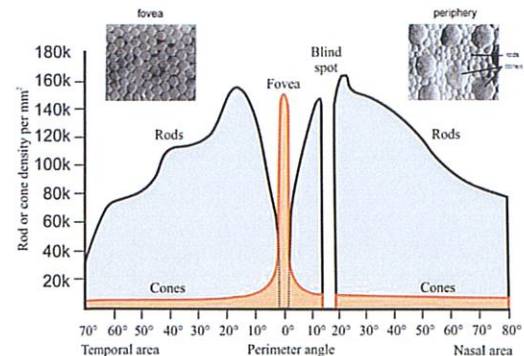


<sup>1</sup> Ross, D. L., Murphy, R. L., & Hazlett, M. H. (2012). Analyzing perceptions and misperceptions of police officers in lethal force virtual simulator scenarios. *Law Enforcement Executive Forum*, 12(3), 53-73.

<sup>2</sup> Klinger, D. A., & Brunson, R. K. (2009). Police officers' perceptual distortions during lethal force situations: Informing the reasonableness standard. *Criminology & Public Policy*, 8(1), 117-140. doi:10.1111/j.1745-9133.2009.00537.x



Cones are primarily distributed within the Macula and most densely in the Fovea. Cones cells are the primary source of high visual acuity and color vision. Cone cells are most active in higher light levels (photopic vision). Rod cells are most densely located to either side of the Fovea and provide monochromatic, low acuity vision in dark environments (scotopic vision). In low light (not dark) conditions, both Rod and Cone cells are active (Mesopic vision).



Visual stimuli processed by photoreceptors on the Retina are converted to electrical impulses, travel the optic nerve to the occipital lobe (brain) where vision is "constructed".<sup>1,2</sup>

Of import is the ability of the eye to adapt to changing light levels and the ability to see contrast to accurately identify an object. Visual adaptation involves transitions from light to dark or dark to light. Both adaptations consist of a slow and a transient phase. Slow adaptation requires 45 minutes, but transient adaption may occur in a few seconds.<sup>3</sup> According to Green (2013) transient adaptation has "major implications in many situations".

*"Any sudden transition of lighting conditions will greatly impair vision. For example, light flashes, such as from a gun or strobe or headlamp glare, will have two effects. They will adapt the viewer to a higher level of illumination, requiring the gradual slow-phase reacquisition of dark adaptation over several minutes. But they will cause a strong short-term adaptation effect that lasts a second or two".<sup>4</sup>*

#### Variations in Contrast & Visual Acuity<sup>5</sup>



van Hateren et al. (1999) Proc R Soc Lond

<sup>1</sup> Purves, D., & Williams, S. M. (2001). *Neuroscience*. 2nd edition. Sinauer Associates.

<sup>2</sup> Green, M. (2018). *Roadway human factors: From science to application*. Tucson, AZ: Lawyers & Judges Publishing Company.

<sup>3</sup> Blake, D. (n.d.) What we don't know can hurt us: training for low-light encounters. *Police Chief*. Retrieved from <http://www.policchiefmagazine.org/what-we-dont-know-can-hurt-us-training-for-low-light-encounters/?ref=3e73c6192a69747dedfc18adcb9ba5d5>

<sup>4</sup> Green, M. (2013). Night Vision. Retrieved from <http://www.visualexpert.com/Resources/nightvision.html>

<sup>5</sup> University of Rochester (2009). Retrieved from <http://www.rochester.edu/news/show.php?id=3342>



1 There is a paucity of empirical research regarding low light associated human  
2 error in police shootings. A portion of the applicable research is listed below:

- 3  
4 • Based on a review of several credible source documents, Aveni (n.d.) found  
5 mistake of fact shootings are most often associated with: 1.) misidentification  
6 of threat level due to impaired visual contrast sensitivity in low levels of  
7 ambient light, 2.) precipitating suspect behavior, and 3.) context-based  
8 expectations relative to the nature of the assignment or call. One example  
9 provided is the officer-involved-shooting of Marquis Hudspeth by Shreveport  
10 (LA) police. After a pursuit, Hudspeth pointed a silver metallic object (cell  
11 phone) at officers using a two-handed shooting stance.<sup>1</sup> Officers perceived  
12 Hudspeth's behaviors as threatening and utilized deadly force.  
13
- 14 • CA-POST provides a compilation of five studies to support pre-hire vision  
15 requirements. The document states (citing Johnson et al., 1992) that 20/20  
16 vision is degraded to 20/60 under typical night lighting conditions (i.e., sodium  
17 vapor streetlights). The five studies reviewed "highlight the challenge of  
18 identifying a weapon at night, even for officers with 20/20 vision". The author  
19 states, "In general, performance is significantly worse in night conditions at a  
20 7-yard viewing distance when acuity falls below 20/40, due in large part to a  
21 reduction in the ability to resolve detail in low light levels".<sup>2</sup> These studies did  
22 not involve the use of flashlights.  
23
- 24 • A review of Philadelphia Police departments OIS incidents between 2007 and  
25 2013 found the majority of mistake of fact shootings ( $n = 29$ ) were caused  
26 due to the misidentification of a non-threatening object or threatening  
27 movements.<sup>3</sup>  
28
- 29 • An experiment testing officers gaze behavior and shooting responses was  
30 conducted. The officers (SWAT and trainees) were compared based on their  
31 shooting responses to a live actor presenting a weapon or a cell phone in  
32 normal lighting conditions. In both cases, the suspect turned and presented  
33 either item in an isosceles shooting stance (normal lighting conditions). Two of  
34 eleven elite officers and eight of thirteen trainee officers fired in the cell  
35 phone condition. The authors concluded that the trainee's visual fixations

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<sup>1</sup> Aveni, T.J. (n.d.). Officer Involved Shootings: What we didn't know has hurt us. Retrieved from  
[http://www.theppsc.org/Staff\\_Views/Aveni/OIS.pdf](http://www.theppsc.org/Staff_Views/Aveni/OIS.pdf)

<sup>2</sup> Hovis, J., Goldberg, L., Bailey, J., Good, G., & Sheedy, J. (2015). Vision Guidelines. Retrieved from  
<http://lib.post.ca.gov/Publications/Vision.pdf>

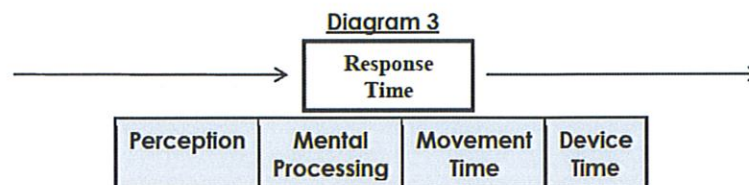
<sup>3</sup> Fachner, G. & Carter, S. (2015). Collaborative reform initiative: An assessment of deadly force in the Philadelphia  
Police Department. Retrieved from <https://ric-zai-inc.com/Publications/cops-w0753-pub.pdf>

(attention) was focused much more on their own weapons than on the suspect's hand-held item before firing.<sup>1</sup>

## 2.6. Total Response Time (TRT)

Total Response Time<sup>2</sup> is what most understand to be reaction time (RT); however, this is an incorrect conceptualization from an academic standpoint. A simple RT interval is the time that elapses following the *presentation* of a stimulus until the *beginning* of a response. Therefore, RT is an internal construct and unobservable.

Total Response Time (TRT) is inclusive of perception, mental processing, movement time, and device time. These steps are applicable to both starting and stopping an action in response to a stimulus. The judgment of how fast a human being "reacts" to a situation requires an understanding of the steps within the framework (See Diagram 3).



Time to Start and Stop an action is of great import in an officer-involved use of force. Human beings do not start and stop actions instantaneously, as one must perceive a change in the environment, processes the information, decide what to do and then move to take the action decided upon. This process repeats when the situation changes (e.g., time to stop an action). Decision making between two different stimuli or choice responses generally doubles response time (e.g., Hick's Law). Adding additional stimuli and response choices exponentially increases response time.

It is important to note that the laboratory environments in which most response time studies are conducted lack ecological validity for real world events. Studies are highly controlled, free from distractions, static, low stress, and participants often know what is going to happen in advance. Each of these variables are extremely influential to real-world situations in which the event is determined to

<sup>1</sup> Vickers, J. N., & Lewinski, W. (2012). Performing under pressure: Gaze control, decision making and shooting performance of elite and rookie police officers. *Human Movement Science*, 31(1), 101-117. doi:10.1016/j.humov.2011.04.004

<sup>2</sup> Schmidt, T.D. & Lee, T.D. (2014) *Motor Learning and Performance; From principles to application*. 5th edition. ISBN 1-4504-4361-3



1 be rapidly evolving, tense, and uncertain. Based on this fact, the results have  
2 limited external validity to real world shootings and should only be interpreted as  
3 demonstrating a delay will likely occur under the best conditions.

4 While hindsight allows for various subjective judgements of when a threat has  
5 ceased, there is often a lack of consideration for the perspective of the actor  
6 while considering the many human (attention & perception) and environmental  
7 variables (i.e., visibility). While no real-world stop shooting studies exist which  
8 include these variables, several studies have explored the topic using controlled  
9 conditions.

10 Controlled studies examine: 1) The time it takes to start and stop firing, 2) The split  
11 times between rounds during rapid fire, and 3) The time it takes the human body  
12 to turn or fall to the ground.

### 13 Start Shooting:

- 14 • Bumgarner et al., (2007) found the average time for an officer to pull the  
15 trigger on a drawn weapon (finger on trigger) to be .31s from the  
16 presentation of a start shooting stimulus. The officer participants were  
17 aware of the threat cue, how to react, and attentive to the stimulus prior  
18 to the measurement. A secondary experiment using the same methods  
19 explored the influence of simple decision making on response time. The  
20 average time for an officer to make a simple decision to fire (finger on  
21 trigger) based upon a start shooting stimulus was .56s.<sup>1</sup>
- 22 • Hontz (1999) conducted a similar experiment with the added requirement  
23 of accuracy. Depending on target size, average RTs ranged between  
24 1.15s and 1.58s from a low ready position.<sup>2</sup>
- 25 • Lewinski et al., (2015) found the average time to fire from the "high-ready"  
26 position is .83s (sound stimulus). The minimum time was .44s and the  
27 maximum time was 1.46s.<sup>3</sup>

### 28 Stop Shooting:

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<sup>1</sup> Bumgarner, J.B., Lewinski, W.J., Hudson, W., Sapp, C. (2007). An Examination of Police Officer Mental Chronometry. *Journal of The Association for Crime Scene Reconstruction*. 12(3), 11-26

<sup>2</sup> Hontz, T.A. (1999). Justifying the Deadly Force Response. *Police Quarterly*. 2(4): p462-476.

<sup>3</sup> Lewinski, W.J., Dysterheft, J.L., Bushey, J.M., Dicks, N.D. (2015). Ambushes leading cause of officer fatalities – when every second counts: analysis of officer movement from training ready tactical positions. *Law Enforcement Executive Forum*, 15(1).

1 Stop shooting research typically asks officer participants to pull the trigger as  
2 rapidly as possible and to stop once a visual stimulus (light) ceases to illuminate.  
3 In these studies, officer already know they are to stop firing and are attending to  
4 the stop shooting stimulus. Therefore, perceiving a change in the environment is  
5 much more simplex than the real-world.

- 6 • Bumgarner et al., (2007) found average stop firing times to be .35s with a  
7 range of .10s to .60s.
- 8 • Tobin & Fackler (2001) found average stop firing times to be .26s with 85%  
9 of officers firing one or two shots after the stop firing signal.<sup>1</sup>
- 10 • Jason (2010) found 69% of officers fired one to three rounds after the stop  
11 firing signal.
- 12 • Lewinski (2014) found average stop firing times to be .29s with officers firing  
13 one to four rounds after the stop firing signal (some took over 1.5s to stop  
14 firing).<sup>2</sup>

#### 15 Split Times/Rounds per second:

- 16 • Jason (2010) found officers fired an average of 4.44 rounds per second  
17 with an average shot interval of .23s.<sup>3</sup>
- 18 • Lewinski et al., (2014) found average shot intervals of .28s.

#### 19 Turning/falling movements:

- 20 • Tobin & Fackler (1997) found the mean time to turn (human torso) 90  
21 degrees and 180 degrees is .31s and .68s respectively.<sup>4</sup>
- 22 • Dysterheft et al., (2013) found individuals (college athletes) could turn 90  
23 degrees from the left and right in .31s and .29s respectively.<sup>5</sup>
- 24 • Jason (2010) found the human body collapses/crumples in 1.1s. Jason  
25 intimates that a threat may be fired upon 1 or more times before they  
26 begin to fall, 4 times during the fall, and 1 or more times after the body

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<sup>1</sup> Tobin, E.J. & Fackler, M.L. (2001a). Officer Reaction-Response Time Delay at the End of a Shot Series. *Journal of the International Wound Ballistic Association*. 5(1): p. 9-12

<sup>2</sup> Lewinski, W.J., Hudson, W.B., Dysterheft, J.L. (2014). Police Officer Reaction Time to Start and Stop Shooting: The Influence of Decision-Making and Pattern Recognition. *Law Enforcement Executive Forum*, 13(2), 1-16. Retrieved from <http://www.forcescience.org/articles/reactionshooting.pdf>

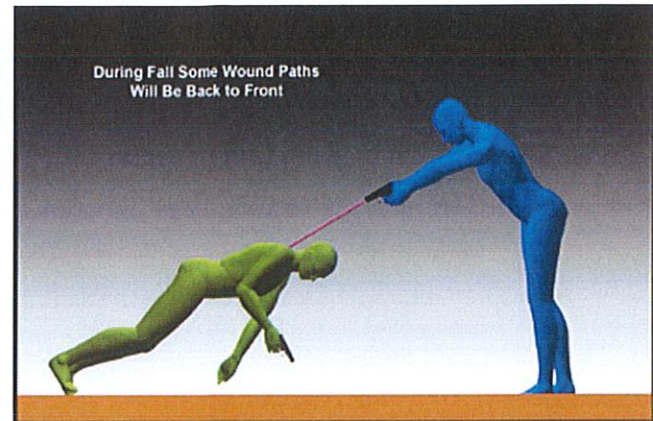
<sup>3</sup> Jason, A. (2010). Shooting dynamics: Elements of time and movement in shooting incidents. *Investigative Sciences Journal*, 2(1), 1-19.

<sup>4</sup> Tobin, E.J. & Fackler, M.L. (1997). Officer Reaction – Response Times in Firing a Handgun. *Journal of the International Wound Ballistic Association*. 3(1): p. 6-9

<sup>5</sup> Dysterheft, J. L., Lewinski, W. J., Seefeldt, D. A., & Pettitt, R. W. (2013). The influence of start position, initial step type, and usage of a focal point on sprinting performance. *International Journal of Exercise Science*, 6(4), 320–327.



1 contacts the floor. He also  
2 states, "shots fired from a  
3 position in front of the target  
4 person during a fall to the  
5 ground may expose posterior  
6 areas of the person's body to  
7 bullet strikes. These gunshot  
8 wounds will be described in an  
9 autopsy report as "back to  
10 front" or "entry in posterior".



11 It should be noted that laboratory experiments are conducted in a highly  
12 controlled environment lacking the dynamics (i.e., stress, complex decision-  
13 making, and low-light) of a real-world incident. These are but a few aspects  
14 which would likely influence TRT. Human Factors expert Marc Green  
15 summarizes the forensic application of response time as follows:

16 *"Unfortunately, no single study can reproduce the full complexity of human*  
17 *behavior and its sensitivity to environmental variables. Moreover, studies*  
18 *cannot be quantitatively combined because no mathematical formalism*  
19 *can capture the subtle effects of methodology and variable interaction or*  
20 *incorporate general knowledge from the basic science literature on RT,*  
21 *perception, and cognition. For the time being, RT estimation remains part*  
22 *science and part intuition, that is, part application of a general knowledge*  
23 *about human factors."* (Green, 2000).

## 24 2.7. Decision Making

25 **Dual Processing Theory** is a widely accepted manner of human processing of  
26 information and decision making. It is often referred to as System 1 and System 2.  
27 System 1 is fast and intuitive while system 2 is slow and analytical. The concept is  
28 best described by Sharlicki and Rupp (2010):

29 *According to cognitive– experiential self-theory, the processing system or*  
30 *frame used to interpret events has a marked effect on individuals'*  
31 *subsequent reactions. The experiential system is characterized as relatively*  
32 *passive and preconscious; individuals automatically interpret, encode,*  
33 *and organize their experience. Information processing is often associated*  
34 *with one's own experience of emotions that, once engaged, tends to*  
35 *play an important (heuristic) role in the judgment process. The rational*



1 system, in contrast, has the properties of conventional and logical systems  
2 and tends to operate at a relatively conscious level. Rational evaluations  
3 are highly analytical, where people consciously weigh the evidence  
4 when deciding whether norms of right and wrong have been violated.  
5 Although other labels have been used to describe these processes (e.g.,  
6 controlled vs. automatic, associative vs. logical; Shiffrin & Schneider, 1977),  
7 considerable support exists for the existence of the two systems.

8 In terms of their origins, the experiential system is thought to have evolved  
9 over millions of years and is well suited for rapid assessment of information  
10 and for quick, decisive action. As such, experiential systems are oriented  
11 toward immediate action rather than prolonged analysis. The rational  
12 system, in contrast, is relatively newer in its evolution and is well suited for  
13 delayed action and complex, dispassionate analysis. Although the two  
14 systems function simultaneously, the experiential system tends to be  
15 particularly salient when emotion is activated.<sup>1</sup>

## 16 2.8. Video Evidence

- 17 • Care must be taken in interpreting video evidence. Human factors such as  
18 vision, perception, attention, and memory will almost ensure differences  
19 between the officer's experience and some part of the impression provided  
20 by the video.<sup>2</sup> What appears on the video may not be perceived by the  
21 officer or perceived in the same way by an observer.
- 22 • Video can be recorded in various frame rates but commonly provide 30  
23 individual photographs per second (30FPS). Significant human movement  
24 (e.g. punches, trigger pulls) can occur in approximately a quarter of a  
25 second (7.5 frames) indicating visual aspects can be missed when viewing  
26 the video at full speed and slow motion. Due to an observer's selective visual  
27 attention and limited working memory, even video reviewed frame by frame  
28 could allow for misinterpretation (e.g., change blindness, inattention  
29 blindness).

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<sup>1</sup> Sharlicki, D.P., & Rupp, D.E. (2010). Dual Processing and Organizational Justice: The Role of Rational Versus Experiential Processing in Third-Party Reactions to Workplace Mistreatment. *Journal of Applied Psychology*, 95(5), 944-952. Doi: 10.1037/a0020468

<sup>2</sup> Blake, D. (2015). Body Worn Cameras: Comparing Human and Device to Ensure Unbiased Investigations. *Law Enforcement Executive Forum*, 15(4). doi:10.19151/leef.2015.1504c

- It is always valuable to review video via frame by frame to gather as much information as possible and make reasonable interpretations of all the available evidence. The video(s), in this case, were reviewed using Adobe Premiere CC and the Kinovea® player due to their video enhancement and frame by frame capability. Individual frames were captured as photographs and placed in this report. Some photographs were enlarged (50%) and screen captured.
- Video compression uses information from previous frames, later frames, or both to predict content and save storage space. Therefore, it is possible certain frames may not be an accurate reflection of environmental information present at the time of the digital recording.
- **NOTE:** Due to various video formats and compression, forensic video review is necessary for definitive analysis. My analysis consists of what is readily visible on each individual frame and should not be considered forensic in nature. The video for this case was synced (Mercadal & Robinet) and enhanced by the Santa Clara Crime Laboratory.

### 3. Fact Patterns

#### 3.1 Initial Call & Contact

SPD CAD notes show a 911 call was received from David R [REDACTED] on March 18<sup>th</sup> at 21:10:29. R [REDACTED] reported a male subject had broken his car windows (2 vehicles) as well as a third vehicle's windows and was now hiding in a residential backyard at 7566 29<sup>th</sup> Street. The male was described 6' tall, wearing a black hoodie and black pants. The call was dispatched at 21:13:22 with patrol units #1C54 (Robinet), #1C57 (Mercadal), and STAR (SSD police helicopter) responding. Units arrived at 21:18:21 (18-82449 CAD Call p.1; PR#989927-010 SPD Radio Traffic 21:12:38 – 21:18:29; PR#989927-018 Audio-911 Call; DOJ Report – Brass p. 4).

#1C54 (Officer Robinet) contacts R [REDACTED] at the scene. R [REDACTED] provides additional details about the suspect and can be seen<sup>1</sup> pointing officers toward a residence which is likely 7566 29<sup>th</sup> street. Robinet is heard on his BWC updating

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<sup>1</sup> Robinet's BWC is has an audio delay and does not record early audio with R [REDACTED]. R [REDACTED] can be seen pointing towards houses before audio begins. Proximal to his pointing motion, the audio begins, and he is discussing the dogs barking "back there". Robinet is heard updating STAR and stating R [REDACTED] indicated the suspect jumped the fence at 7566 29<sup>th</sup> Street.



1 STAR concerning R[REDACTED] seeing the suspect enter the yard at 7566 29<sup>th</sup> Street.  
2 STAR can be seen and heard on the BWC recording (PR#989927-010 SPD Radio  
3 Traffic 21:19:39 – 21:19:43; PR#989927-018 Audio-911 Call; Robinet BWC 00:20 –  
4 01:10).

5 Officers Robinet and Mercadal search the yard at 7566 29<sup>th</sup> street.

6 STAR (Ofc. Gomez) advises ground units that they see a "guy in a backyard  
7 that was looking into the window, he's picking up a tool bar or some sort of  
8 thing, might be trying to break the window right now, standby, two-yards south  
9 of you, okay, he's breaking the window, just broke the window, running south.  
10 Backyard of 7572 running south, he just broke the window I believe, on the  
11 house at 7570. He's one house to the south of that right now, running toward the  
12 front yard. All I can tell is he has a hoodie on. He's running toward the front yard  
13 of 29<sup>th</sup> street, 7572 29<sup>th</sup> street. He's looking into another car that's in between the  
14 fence and the front yard" (PR#989927-010 SPD Radio Traffic 21:25:11- 21:26:12;  
15 DOJ Report – Brass p.4).

16 Officer's Robinet and Mercadal approach 7572 29<sup>th</sup> street. While out front, STAR  
17 can be seen and heard just overhead. STARs spotlight illuminates' portions of the  
18 yard and the residence at 7572 29<sup>th</sup> street with its spotlight (Robinet BWC 7:00 –  
19 7:52; Mercadal BWC 7:00 – 7:30). Mercadal spot's Clark in the driveway of 7572  
20 29<sup>th</sup> street and both officers pursue him into the backyard (Robinet BWC 7:45 –  
21 8:00; Mercadal BWC 7:30-7:47). STAR reports that ground units have one at  
22 gunpoint and then asks for a perimeter as the subject runs south. STAR reports  
23 the subject is one yard to the south of 7572 and that two ground units are trying  
24 to catch him. (PR#989927-010 SPD Radio Traffic 21:26:27 – 21:26:33; PR#989927-  
25 026 BWC w/ Helicopter video (Mike Baker) 8:00 – 8:29).

26 Shots were reportedly fired at 21:26:56 via CAD (18-82449 CAD Call p.1). STAR  
27 reports shots fired at 21:26:53 (PR#989927-010 SPD Radio Traffic 21:26:53). Shot  
28 Spotter indicates shots fired at 21:26:48.925 (Shot spotter forensic report p.4;  
29 Exhibit 7.1). Both Robinet and Mercadal indicate both on-scene and in  
30 subsequent interviews they believed Clark was pointing a weapon at them  
31 (Robinet/Mercadal Interviews; Robinet/Mercadal BWCs).

32 Clark is reported down and not moving. Additional police and fire response are  
33 requested. A body bunker is requested at 21:29:30. Officers approach Clark at  
34 21:31:56. Officers perform lifesaving measures. Fire is cleared to enter at 21:32:06

1 and arrives on scene at 21:33:44 (PR#989927-010 SPD Radio Traffic 21:27:06 –  
2 21:33:44).

3 Several sources of evidence demonstrate twenty shots were fired from the  
4 officers. Two source indicates the shots were fired in approximately 4.5 seconds  
5 (Shot spotter forensic report p.4; STAR digital video). A third source consisting of  
6 Gunfire notifications (visual notification) from the DOJ processed videos report  
7 the duration of shots as 4.7s (BWC Videos Combined and Stabilized with  
8 Processed Audio).

9 The investigation ultimately found Clark was potentially a contributor to DNA  
10 associated with the three vehicles vandalized/burglarized in this case. The  
11 confluence of evidence established provided for a CA DOJ opinion that Clark  
12 had "committed multiple crimes...two separate vehicle burglaries, one  
13 attempted vehicle burglary, or vandalism to a vehicle, and one attempted  
14 residential burglary, or vandalism to a residence, minutes prior to Officer  
15 Mercadal and Robinet contacting Clark" (DOJ Report-Brass p. 5).

### 16 3.2 Scene Overview

17 A digital camera video taken of the scene at 7572 29<sup>th</sup> street (Evidence item  
18 #PR988907) is not described as to whether additional light sources were used or  
19 whether the camera has enhanced night video capability (Homicide report p.  
20 250; 430). Objects in the video appear with greater clarity as the camera moves  
21 closer indicating there may be some method of enhanced low-light capability.  
22 The video shows the backyard is dark with no direct lighting sources. Ambient  
23 sources of light providing very little to no clarity at a distance (within the  
24 backyard). The camera provides views from the side of the yard the officers  
25 were located when they fired their weapons. The area of the south fence line  
26 where Clark was seen in BWC video is extremely dark. As the camera moves, a  
27 significant white light source flashes through the slats in the fence in the general  
28 area Clark appears in Robinet/Mercadal's BWC video (Video PR#988907-001  
29 03:11-03:17).

### 30 3.3 Witness Statements

31 **David R** (resident in trailer at 7571 29<sup>th</sup> Street) stated he was in his trailer with  
32 Jacqueline S when he heard a bang. S told him there was a  
33 subject across the street breaking windows to vehicles. R went outside and  
34 saw a male standing on the driver's side of his white Ford Explorer. The subject



1 was facing R[REDACTED] and described as just staring at him. R[REDACTED] asked S[REDACTED] for  
2 his gun in order to scare the male, but the male continued to just stare at him.  
3 R[REDACTED] said he asked for his gun loud enough for the male to hear him. R[REDACTED]  
4 went back to his trailer and armed himself with a baseball bat; then walked out  
5 toward his truck telling the male to get away from his car. The male ran across  
6 29<sup>th</sup> street and toward a garage at 7566 29<sup>th</sup> street. R[REDACTED] followed him and the  
7 male fled over a fence at 7566 29<sup>th</sup> street. R[REDACTED] described the subject as a  
8 black male (assumption), wearing a black hoodie with red writing, and black  
9 pants with white dots or stripes (R[REDACTED] Interview 16:00-19:00; 21:10-27:30).

10 R[REDACTED] called 911 to report what happened. When officers arrived, he flagged  
11 them down and directed them to the backyard of 7566 29<sup>th</sup> street. He then  
12 returned to his trailer and watched his surveillance monitor. He saw two officers  
13 running southbound. He went back outside and heard yelling from the officers  
14 (he believes) but could not hear everything they said other than "police, stop"  
15 just before he heard gunshots from what he believed was two separate  
16 weapons. He believes he heard 5-7 shots and then 2-3 more shots (R[REDACTED]  
17 Interview 19:17-21:10; 32:00-33:00).

18 R[REDACTED] said the shooting occurred 2-3 minutes after the officers initially arrived  
19 (R[REDACTED] Interview 29:00-29:27).

20 Later, R[REDACTED] was shown a booking photograph of Stephon Clark and stated  
21 that he looked familiar and could be the person who was near his vehicle, or he  
22 may recognize him from the neighborhood. R[REDACTED] stated he didn't see the  
23 subjects face. (R[REDACTED] Interview 1:21:00-1:21:40).

24 Jacquelin S[REDACTED]<sup>1</sup> (resident in trailer at 7571 29<sup>th</sup> Street) was standing outside  
25 with Michael C[REDACTED] talking while her boyfriend (R[REDACTED]) was inside the trailer. They  
26 saw a male walk from Ellwood Ave, across 29<sup>th</sup> street to a gold Toyota Camry  
27 parked on 29<sup>th</sup> street. They heard a thump and saw the male break the window  
28 and then get inside the car. She believes the male subject had to know they  
29 were present due to the music from Mike's vehicle and their loud talking. She  
30 said Mike left in his vehicle and she went inside the trailer. She describes the  
31 male as just standing and staring at the Camry when she went inside. He was

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<sup>1</sup> Due to the background noise it was difficult to understand large parts of S[REDACTED]'s interview. I listened to the interview and compared what I heard to the Homicide report summary of her statement (p. 119-123). S[REDACTED]'s interview is consistent with the summary based on the portions I could hear/understand.



1 described as wearing a black hooded sweatshirt (hood pulled up), skinny, with  
2 light toned skin.

3 Once inside, she and R [REDACTED] heard glass break and quickly realized the male  
4 had crossed the street and broke the windows out of both their vehicles. R [REDACTED]  
5 yelled for her to get his gun and then R [REDACTED] grabbed a baseball bat and went  
6 outside with her following. She described R [REDACTED] as yelling at the male, but the  
7 male just kept walking away. She believed the male was intoxicated. She  
8 assumed the male jumped a fence into a backyard (she did not see this but  
9 heard dogs parking). R [REDACTED] called 911.

10 Two police vehicles arrived, and she saw R [REDACTED] point the officers toward the  
11 house where the male was last scene. A helicopter arrived, and she saw the  
12 officers searching the area. She then saw them run up the driveway of the  
13 house across from where she lived. She saw them go through the gate to the  
14 backyard. Shortly after she heard 7-8 gunshots. She described "it" as happening  
15 "so fast" (Homicide Report p. 119-123).

16 Tommy T [REDACTED] (resident 7572 29<sup>th</sup> Street) told DOJ investigators that Clark  
17 knocked on his window and called out his name just prior to the OIS. T [REDACTED]  
18 speculated that Clark wanted him to open door to the residence. T [REDACTED]  
19 said he heard 18-20 rounds fired. He did not hear any officer commands (DOJ T.  
20 T [REDACTED] Interview 3:45 – 4:40). T. T [REDACTED] places S. Clark in a Toyota (light  
21 colored) Camry the day prior to the OIS.

22 Sequita T [REDACTED] (resident 7572 29<sup>th</sup> Street) told DOJ investigators she was at  
23 home on her computer when she heard gunshots and saw flashing lights near  
24 where Clark was shot. She got down on the floor and crawled to her  
25 granddaughter. She then took her "granddaughter" to a back bedroom where  
26 Tommy was located. Tommy told her he heard someone call his name. Tommy  
27 then called 911 from his cell phone (DOJ S. T [REDACTED] Interview 21:20 – 24:00).  
28 Sequita said she looked outside and saw Clark laying on the ground. She  
29 described seeing a phone and "gold things" (DOJ S. T [REDACTED] interview 28:00 –  
30 29:00). Sequita said she did not hear the police helicopter or commands; only  
31 the gunshots (DOJ S. T [REDACTED] interview 29:40 – 30:00; 31:00 – 31:17). She  
32 describes Clark's clothing as being the same as what she had seen him wearing  
33 earlier when she took a photograph of him (DOJ S. T [REDACTED] interview 30:20 –  
34 30:40).

1 Horace T identified a photograph of a Toyota Camry in which S. Clark  
2 was a passenger the day prior to the OIS (DOJ H. T interview 1:00 –  
3 2:20).

#### 4 3.4 Officer Statements

5 Officer Robinet (callsign 1C54) stated he responded to a vehicle burglary call  
6 involving an individual breaking vehicle windows. Dispatch advised the  
7 reporting party followed the suspect to 7566 29<sup>th</sup> Street where he saw the  
8 suspect go into the backyard (Robinet Interview 06:20-06:45). The description of  
9 the suspect was provided as a skinny, tall (6'-6'1"), male black, wearing black  
10 clothing with a design on the pants (Robinet Interview 07:30-08:10).

11 Officer Robinet and Officer Mercadal arrived on scene at approximately the  
12 same time. Robinet contacted R who pointed out the residence at 7566  
13 29<sup>th</sup> street. R told him the suspect jumped the fence into the backyard of  
14 this residence. R told him the dogs at that location were barking a lot up  
15 until the last minute or so (Robinet Interview 08:25-09:40). Robinet said that he  
16 saw broken glass in the area that R pointed out. He also saw another  
17 vehicle with a section of wrought iron gate laying on the side walk and glass in  
18 that area (Robinet Interview 23:00-24:00).

19 Officer Robinet stated a concern for what the suspect "may do next" (Robinet  
20 Interview 09:45-09:55). Therefore, he contacted the resident at 7566 29<sup>th</sup> street  
21 for consent to search the backyard, which was clear (Robinet Interview 09:45-  
22 10:55).

23 After clearing the yard, STAR provided an update concerning an individual in  
24 the backyard of a house approximately 2 houses south of their location. STAR  
25 advised the individual had a crowbar in his hand and was trying to break a  
26 window of a residence. Robinet and Mercadal started moving in that direction  
27 when STAR advised the individual had broken the glass to a residence and was  
28 trying to make entry (Robinet Interview 12:25-13:15).

29 STAR provided an update stating the individual was running south and had  
30 gone over a fence into the next yard (7572 29<sup>th</sup> Street). STAR then provided an  
31 update stating the individual was walking toward 29<sup>th</sup> street. Proximal to this  
32 update, Robinet said he heard Mercadal yelling at "the suspect" who was later  
33 determined to be Stephon Clark (Robinet Interview 14:00-14:45).



1 Robinet turned and followed Mercadal into the back yard of 7572 29<sup>th</sup> Street. As  
2 they rounded the corner of the residence, Robinet saw Clark standing  
3 approximately 15-20 feet away in an Isosceles position<sup>1</sup> with his hands "punched  
4 out in front of him and holding an object". Robinet said he recognizes the  
5 Isosceles Shooting stance from training and knows it to be a "common firing  
6 position". He said, "I recognize that as a position somebody shoots from". He  
7 could see something in Clark's hands, but he could not clearly identify it.  
8 Robinet said he saw a reflection and believed it was a metal object. He also  
9 describes the backyard as dark and that it was difficult to see clearly (Robinet  
10 Interview 15:15-17:32). He later described the lighting in the backyard as "non-  
11 existent other than his and Mercadal's light (flashlight/weapon mounted). He  
12 could only see what their lights illuminated, which he described as Clark's mid-  
13 stomach to his knees (Robinet Interview 25:00-25:40).

14 Robinet heard Mercadal yell, "gun", and he (Robinet) instinctually ducked  
15 behind cover. He came back around to look and saw Clark still standing in the  
16 same position (Isosceles). He states he was surprised that Clark had not started  
17 shooting. He fired what he believed was 5 rounds (initially – but later believed it  
18 was more) to protect himself and Mercadal. Robinet said Mercadal also began  
19 firing. (Robinet Interview 17:00-18:17). Robinet said he "was scared" Clark was  
20 going to shoot both he and Mercadal. He said he believed Clark had a gun  
21 based on the shooting position and his 9 years of training/experience. Robinet  
22 described Clark as, "completely having the drop on us" and would have shot  
23 Mercadal if he (Clark) had started shooting (Robinet Interview 18:37-19:20).

24 Robinet said he stopped firing as Clark fell to the ground. He stopped firing  
25 because he did not feel Clark continued to be a threat (Robinet Interview 18:17-  
26 18:37).

27 Robinet said he requested a body bunker because he believed the Clark could  
28 still be a deadly threat (Robinet Interview 21:24-21:45). Once enough officers  
29 arrived, and Clark had not moved or responded to commands, Officers moved  
30 forward and began CPR. Robinet and Mercadal were then pulled away from  
31 the scene (Robinet Interview 21:45-22:30).

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<sup>1</sup> Robinet extends his arms and brings his hands together in what I recognize as the Isosceles shooting position.

1 Robinet said Clark did not say anything during their contact. Robinet also did  
2 not give any commands. He remembers Mercadal saying "show us your hands"  
3 but doesn't remember anything else (Robinet Interview 26:20-26:27).

4 Robinet describes his mindset upon contacting Clark as an "oh shit" moment.  
5 He was surprised Clark had not starting shooting and was concerned that he  
6 and Mercadal were going to be shot. Robinet describes knowing Mercadal was  
7 further exposed than he from the corner of the house. Robinet describes firing  
8 "instantaneously" based on what he saw as a deadly threat. He does not  
9 believe he had any other option. He does remember seeing a white cell phone  
10 in a black case on the ground when they approached Clark (Robinet Interview  
11 1:14:00-1:18:11).

12 **Officer Mercadal (1C57)** stated he responded to a vehicle burglary call (in  
13 progress) with a subject reported breaking multiple car windows on 29<sup>th</sup> street. A  
14 neighbor confronted the suspect and chased him into the backyard of a  
15 residence where it was believed he was still hiding. The description of the  
16 suspect was; male black, wearing a black hooded sweatshirt and dark pants  
17 (Mercadal Interview 09:45-10:57).

18 Officer Mercadal and Robinet both responded from a previous call they had  
19 together. They both arrived on scene simultaneously. Upon arrival, they spoke  
20 with a reporting party (R██████) who told them he chased the suspect to the  
21 backyard of a nearby residence. R██████ pointed out two vehicles and Mercadal  
22 saw broken glass nearby them on the street (Mercadal Interview 22:39-24:42).  
23 Both officers then contacted the homeowner of a residence where the suspect  
24 was believed to have fled. They received consent to enter the yard and cleared  
25 it and then walked back to the front of the residence (Mercadal Interview 11:10-  
26 14:40).

27 As they were walking to there cars, STAR broadcast that a subject was in the  
28 backyard of a residence approximately 2 houses south of their location.  
29 Mercadal and Robinet began walking along 29<sup>th</sup> street to determine which  
30 house STAR was referring to. STAR then provided an address of 7572 29<sup>th</sup> street  
31 where the suspect was located. STAR advised the suspect appeared to be  
32 attempting to break into a car. Mercadal said STAR was directing them where  
33 to go (Mercadal Interview 15:00-16:24; 58:10-58:35).

34 Mercadal said STAR advised them the suspect was running south and jumping  
35 fences. He and Robinet attempted to parallel the suspect on 29<sup>th</sup> street. STAR



1 advised that a subject appeared to be breaking into a vehicle in the driveway  
2 of one of the residences. Mercadal looked down the driveway and saw a black  
3 male with a black hooded sweatshirt (visually indicating the hood was up on his  
4 head) standing behind a vehicle in the driveway of 7572 29<sup>th</sup> street. The subject  
5 was later determined to be Stephon Clark (Mercadal Interview 15:00-17:55).

6 Mercadal said he gave the subject loud verbal commands to see his hands. The  
7 male turned and ran to the backyard out of Mercadal's sight. Mercadal gave  
8 the male a command to stop and chased after him. Mercadal describes  
9 attempting to "pie" (tactical movement) around the corner of the residence  
10 (7572). As he came around the corner, he saw Clark with he arms together and  
11 pointed towards him<sup>1</sup> (Isosceles shooting stance). Clark is described as "sucked  
12 up close" to the building and Mercadal demonstrates what he saw (Mercadal  
13 Interview 27:50-29:10). Mercadal describes seeing a metallic item or muzzle flash  
14 that made him believe he was being shot at. He describes himself as being  
15 "scared" and in fear for his life (Mercadal Interview 17:55-19:52; 33:00-33:27).

16 Mercadal said he yelled "gun", while moving toward the corner of the  
17 residence for cover. Mercadal describes a moment of introspection regarding  
18 whether he saw what he thought he had seen. He looked back out around the  
19 corner and describes Clark as still in an Isosceles shooting stance and moving  
20 forward toward them. He described a bright metallic shiny object in Clark's  
21 hands. Mercadal believed Clark was shooting at them. He describes himself as  
22 ducking behind cover, kneeling, and "returning fire" (Mercadal Interview 19:52-  
23 20:53).

24 Mercadal believes he fired 10 times. He said he was aiming at Clark as he fired,  
25 and that Clark was close to the residence, but moved away as he fired  
26 (Mercadal Interview 31:59-32:20). He saw Clark go down. Clark was described as  
27 having one hand visible and the other tucked under his body. Mercadal said  
28 additional officers arrived and they provided additional commands to Clark.  
29 They then made an approach, handcuffed Clark, and began CPR (Mercadal  
30 Interview 21:00-22:58). He never heard Clark say anything (Mercadal Interview  
31 34:40-34:50).

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<sup>1</sup> Mercadal extends his arms and brings his hands together while describing what he saw, which is the same as Robinet's description and visual representation of Clark's actions.

1 Mercadal describes the lighting in the backyard of 7572 29<sup>th</sup> street as pitch-  
2 black with the only light coming from his weapons mounted light (Mercadal  
3 Interview 27:50-28:33).

4 **Officer Gomez (STAR Observer)** reported he heard the Sacramento Police  
5 Department dispatcher voice a call at the location of 7566 29<sup>th</sup> Street located  
6 within the City of Sacramento. The dispatcher advised that a victim had chased  
7 a suspect that broke the windows on a vehicle located on 29<sup>th</sup> Street and the  
8 victim last saw the suspect go into the backyard of 7566 29<sup>th</sup> 6 Street (Homicide  
9 Report p. 638).

10  
11 Gomez said he used STARs infrared camera to search for the suspect. During the  
12 search he located a subject in the backyard of 7570 29<sup>th</sup> Street who was  
13 standing near a glass door/window. He saw the subject looking into the  
14 door/window and saw him pick up an object and swing it at the door/window.  
15 Gomez said he believed the subject broke the glass and reported the  
16 information to officers on scene (Homicide Report p. 638).

17 Gomez then advised officers he saw the subject running southbound and jump  
18 the fence into the backyard of 7572 29<sup>th</sup> Street. He advised officers the subject  
19 was running toward the front yard. He then saw an officer place the subject at  
20 gunpoint. The subject ran westbound back to the backyard of 7572 29<sup>th</sup> Street.  
21 He saw officer chase the suspect, round the corner of the house, and then  
22 retreat for cover. He then saw heat flashes consistent with gunfire (Homicide  
23 Report p. 638).

24 **Trujillo report:** "On Sunday, 03/18/18, at approximately 2126 hours, Officer Tayler  
25 #741 and I (Officer Trujillo #846) were together as [REDACTED] in an unmarked black  
26 Ford Crown Victoria police vehicle, On the above date and time, we were  
27 clearing an unrelated call and traveling northbound Franklin Blvd, north of Florin  
28 Rd. when we heard via our police radio other officers responding to a car clout  
29 in progress call at 7566 29<sup>th</sup> St. I heard a male officer on the car clout call advise  
30 that there was "one at gunpoint." STAR was also on the car clout call and  
31 advised via radio that the suspect was fleeing on foot southbound with two units  
32 pursuing him. Officer Tayler and I responded Code 3 to assist".

33 **Tayler Report:** "On Sunday, 03/18/2018, at approximately 2125 hours, OFC Trujillo  
34 #846 and I (OFC Tayler #741) as [REDACTED] drove northbound on Franklin Blvd from  
35 Florin Rd after leaving the area of a previous call (18-82412). At the time, patrol  
36 units (1C54 OFC Robinet and 1C57 OFC Mercadal) were responding to a car



1 clout in progress near 7566 29th St. At approximately 2126 hours, STAR advised  
2 via radio traffic that there was a subject in the area of the car clout call that  
3 was looking into, and then breaking, a window. Approximately 30 seconds later,  
4 a unit on scene advised that they had a subject at gunpoint".

5 **Lundgren Report:** "On 03-18-2018 at approx. 2128 hours Officer Maclean #1010  
6 and I Officer Lundgren #970 were monitoring a call for service over the radio,  
7 officers were dispatched to a call for service regarding a male subject in the  
8 area of 7566 29th St breaking car windows. The subject was last seen hiding in  
9 nearby backyards. Sacramento County Sheriff Departments helicopter (Star)  
10 arrived on scene and started to give updates. Star advised that they had  
11 located a subject in a nearby back yard. Star advised that the subject was  
12 jumping fences and was heading southbound from the original address. Star  
13 advised that the subject had just broken out a window to a residence house.  
14 While listening to the radio I heard Star give out the update that shots had been  
15 fired at approx. 2126 hours in the back yard of 7572 29th St".

### 16 3.5 Video Analysis

17  
18 3.5.1 BWC & STAR Video: I used Adobe Premiere Pro CC 2018 review video item  
19 PR# 989927-026 (BWC & STAR combined: 18-82449\_OIS\_3-18-18\_mtr1.mp4)  
20 which provides a global view of the incident. I also provided additional  
21 audio data as needed (BWC Audio Combined and Processed.wav). This  
22 section addresses pre and post shooting only.

- 23  
24 • **Pre-shooting:**

- 25 • Officers can be seen meeting with R[REDACTED]. R[REDACTED] is pointing across the  
26 street and can be heard describing dogs barking.
- 27 • Officers appear to be checking the area with their flashlights.
- 28 • Officers make contact at a residence and receive consent to search  
29 the backyard. Officers can be seen searching the yard. Robinet's  
30 weapons mounted light appears to be fully powered and then cuts  
31 out unexpectedly during the search. He switches to a hand-held  
32 flashlight. The backyard appears to be completely dark except for the  
33 flashlights.
- 34 • Officer Robinet asks for an update from STAR. He and Mercadal begin  
35 moving quickly down the street on foot.
- 36 • STAR provides an update concerning Clark running south. The FLIR  
37 shows Clark running in a backyard (away from 7570 29th Street) and

1 jumping over a fence to 7572 29<sup>th</sup> Street. Officer's BWCs appear to  
2 show them running on 29<sup>th</sup> street.

- 3 • STAR provides an update that Clark is in the backyard of 7572 29<sup>th</sup>  
4 Street. Units are then advised Clark is running to the front yard and  
5 wearing a "hoodie". Mercadal can be seen walking (on 29<sup>th</sup>) back  
6 towards the driveway of 7572 29<sup>th</sup> Street as Clark appears to look inside  
7 a vehicle parked in the driveway. STAR advised Clark is looking into a  
8 car between the fence and the front yard.
- 9 • During this time, STAR activates its spotlight in the direction of the  
10 officers. The helicopter is also heard on body worn cameras.
- 11 • Officer Mercadal can be heard saying, "over here Jerrod" and his  
12 BWC is pointing towards 7572 29<sup>th</sup> Street. He then begins moving up the  
13 driveway.
- 14 • As Officer Mercadal moves up the driveway his light illuminates the  
15 vehicle Clark had been looking into. Mercadal yells "hey" and "show  
16 me your hands" and "stop, stop" in quick succession. Mercadal begins  
17 to chase Clark and Robinet is running up the driveway behind him.  
18 Other than flashlights, the entire area is extremely dark. Clark can be  
19 seen running away from the corner of the residence until he  
20 disappears under the backyard porch area.
- 21 • The entire backyard lights up as if STARs searchlight is illuminating the  
22 area. Mercadal's and Robinet's flashlights light up the area under the  
23 awning where Clark's silhouette appears almost simultaneously as  
24 STARs spotlight stops illuminating the backyard.



25  
26 • **Post-Shooting (Statements between Mercadal & Robinet):**

- 27 • Mercadal: "You alright, you hit?"
- 28 • Robinet: "He was still pointing"
- 29 • Robinet: "When I saw again...you alright dude?"
- 30 • Mercadal: "I don't think I'm hit or anything".
- 31 • Robinet: "I think I shot about 5 times".
- 32 • Mercadal: "we can't see the gun", "We don't have it", "Can you see it  
33 Jerrod?"
- 34 • Robinet: "I don't see it"
- 35 • Mercadal: "He came up, and he kind of approached us hands out  
36 and then fell down".
- 37 • Sgt. Morris asks, "what did he have on him" – BWC video  
38 audible/visible: Robinet describes to the Sgt. how Clark approached

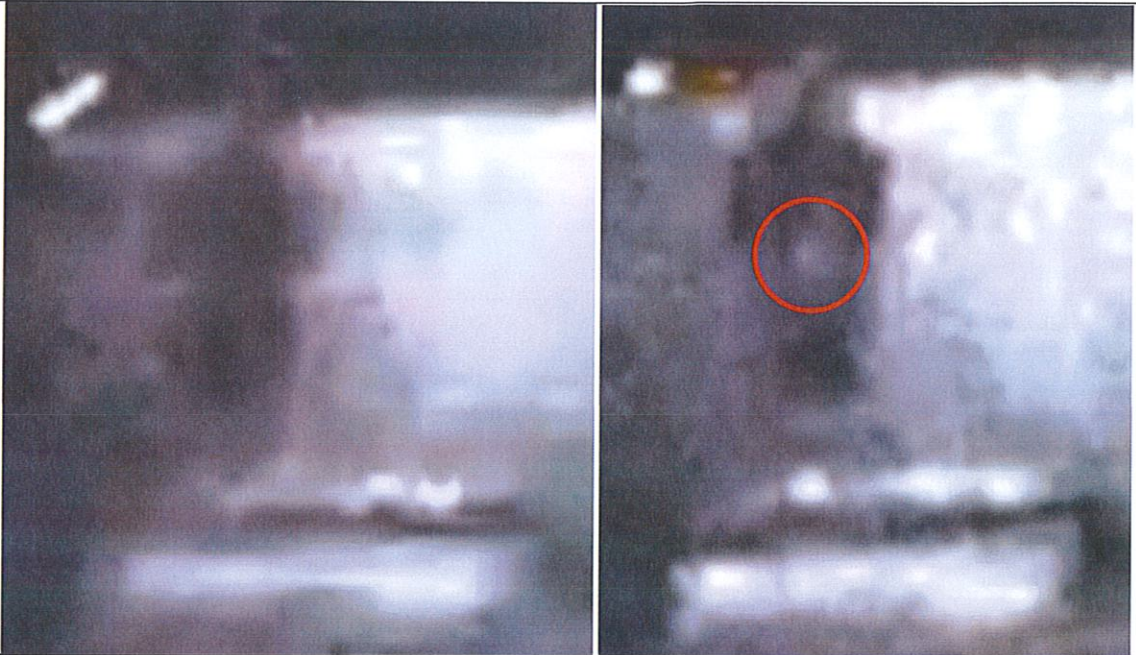



and says, "like this" while bringing his hands in front of his body and then says, "with something in his hands" and "it looked like a gun from our perspective" (Visible on Robinet's & Audible on Morris's BWC; Griggs Report (transcription)).

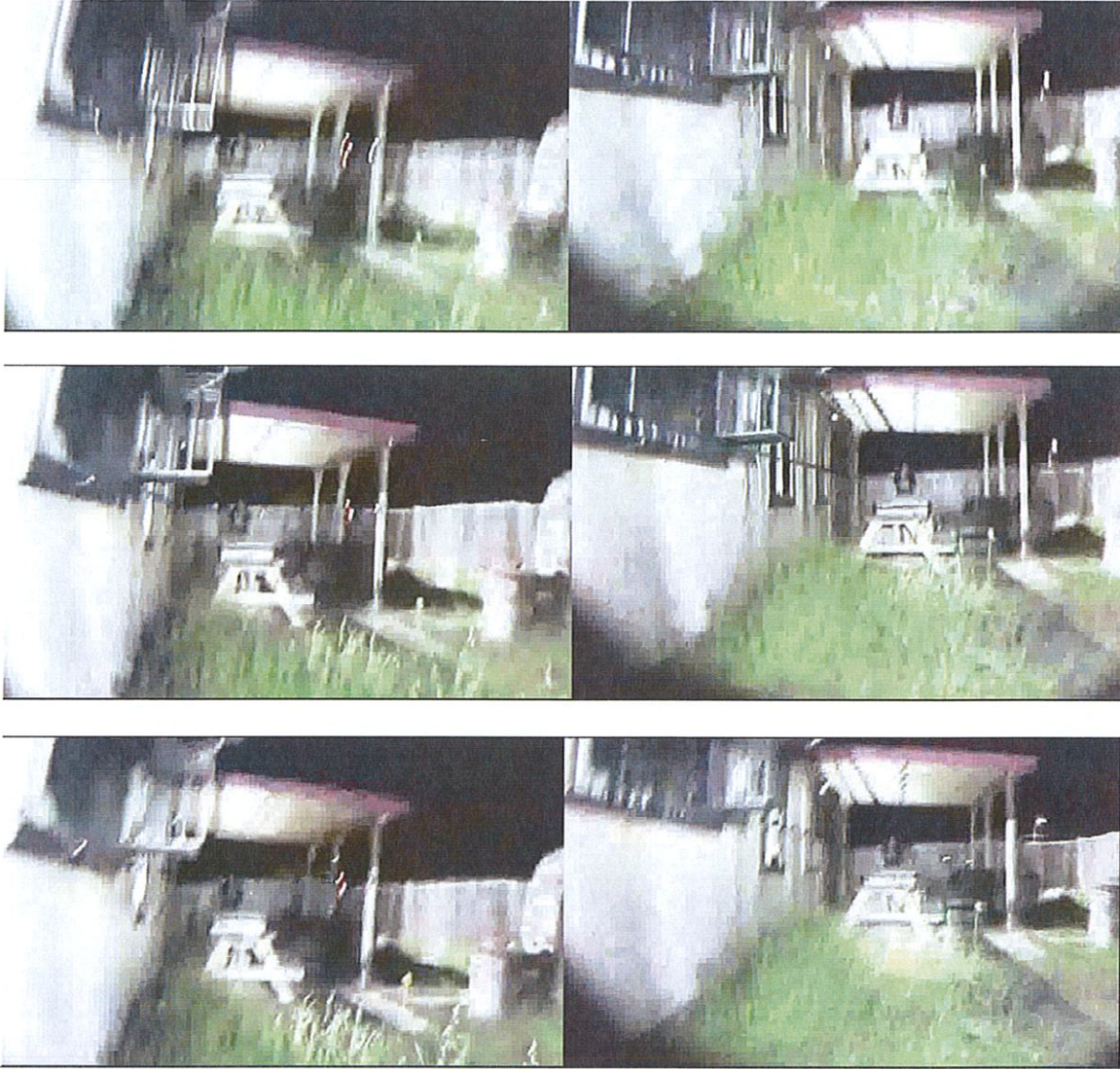
**3.5.2 DOJ Enhanced (Robinet/Mercadal):** I used Adobe Premiere Pro CC 2018 to conduct a frame by frame review of this file. Adobe's analysis indicated the video was providing 29.97 FPS. The data is presented in timecode format: "Seconds; Frames". At each frame count of :29, the second counter moves forward on the next frame (i.e., :29 to 1:00) (BWC Videos Combined and Stabilized with Processed Audio.mp4).

Time Code	
00:19-00:21	<p>Mercadal rounds the corner. A faint white light is present where Clark appears (left). The light is brightest in this frame and then extinguishes in the third frame (13984) and reappears in the fourth (13985) to the right side of Clark.</p> <div data-bbox="316 940 1464 1591"> <div>00:08:00:20</div> <div>  <div>14420</div> <div><b>ROBINET</b></div> </div> <div>  <div>13983</div> <div><b>MERCADAL</b></div> </div> </div>
00:28-01:00	<p>Two dark blurs are present on either side of Clark's torso. In the next frame those blurs appear to come together at Clark's waist area. There is a light area in the middle of his silhouette which becomes more visible in the last frame. (Mercadal_processed_frame_13991 – 13992 50% zoom). The light area moves upward and to the left between frame 13992 and 13993.</p>





	
1:03-1:16	Clark is visible in the first frame, but the silhouette disappears and appears to move up and down within the frames. (Mercadal_processed_frame_13996 – 14009). This may be a video effect as other areas appear distorted.
1:17	<p>A bright light appears where Clark is standing (Robinet_Processed_Frame-14447).</p> <div data-bbox="308 1050 1445 1701"> <p>00:08:01:17</p>  <div data-bbox="418 1549 714 1638"> <p>14447</p> <p><b>ROBINET</b></p> </div> <div data-bbox="993 1549 1339 1638"> <p>14010</p> <p><b>MERCADAL</b></p> </div> </div>
1:18-1:21	Mercadal's BWC shows Clark disappearing from view (Mercadal_processed_frame_14010 – 14014). Robinet's BWC shows Clark's silhouette in the frame (Robinet_Processed_Frame-14448 – 14451). However,



	Clark's silhouette blurs and is replaced by a black box in Robinet's frames (Robinet 14451-14453).
1:22	Mercadal just begins to vocalize "Show me your hands, gun".
1:29-2:01	Robinet frames (14459 – 14462). Mercadal frames (14022-14024). Side by side views. Both cameras show a significant contrast change at Clark's center mass (white area).
	
2:05	Mercadal first begins to verbalize the word "gun" just after these frames. Mercadal moves to cover as he finishes the word gun. Clark is heard saying "fuck you" just after this.
2:11-2:12	Clark is visible on Robinet's camera as Mercadal is just ending the word "gun". Between these frames the change in contrast around the face and torso of Clark's silhouette could be associated with bringing the hands down or it could be image blur (Robinet frames 14471-14472). The change is more prominent by moving back and forth between frames.



		
2:21	Robinet begins to move for cover.	
4:05-5:05	<p>Robinet and Mercadal move out from the cover. During the movement, Robinet's flashlight illuminates the side of the house in front of him causing significant splash back as demonstrated on his hand and weapon (Robinet frame 14534).</p> 	
5:05	Robinet and Mercadal appear to have rounded the corner. Unknown at what point they first saw Clark / could see Clark. Clark's shoes are visible on Mercadal's BWC (Mercadal frame 14118 - 14119).	
5:06-6:06	Clark's legs are visible in most of the frames. Considering the white striping on the inside of Clark's legs, it is possible that he is presenting with his legs apart and knees bent while facing the officers. For instance; when Clark first	



appears, the white lines appear straight and his legs and feet are close together (Mercadal frame 14120). He then appears to be stepping forward (Mercadal frame 14126). He is blocked in several frames and then reappears with the white stripe separating at opposing angles (Mercadal frame 14144). A similar stance can be found in frames; 14147, 14148, 14149, 14150. In frame 14147 there is a blurry white area to the right side of Clark's silhouette that is less pronounced in later frames as the viewing area pans downward.

Frames 14120 & 14126



Frames 14144 - 14150



6:06-7:05	An officer just begins to yell "show me your hands" & "gun" "gun" "gun" after frame 14149. The command is completed in about 1 second.
7:11	The first gunfire notification (Robinet frame 14621). Mercadal starts moving to cover.
9:01	The gunfire notification ceases (Robinet frame 14671). It is clear Robinet fired the first five rounds (Duration: 49 frames x .033s = ~1.6s)
9:04	Mercadal can be seen bringing his weapon upwards.



9:15	The second gunfire notification is presented (Robinet frame 14686). (Pause duration: 15 frames x .033s = ~.5s). In the non-stabilized version of this video, Mercadal fires his 1 <sup>st</sup> round almost simultaneously with Robinet's sixth round (BWC videos combined with processed audio.mp4). <sup>1</sup>
12:05	The second gunfire notification ceases (Robinet frame 14765). (Duration of fire: 144 frames x .033s = ~4.7s)

1

## 2 California Department of Justice Review of BWCs:

3 I received portions of the DOJ report after I had completed my video/image  
4 reviews and written this report. No changes in my analysis occurred based on  
5 DOJ's reported video analysis. In comparing DOJ's interpretations where they  
6 overlap with my own, I found several points of agreement. For instance, SA Brass  
7 reviewed the individual images (frames) taken from Mercadal's and Robinet's  
8 BWCs (18-82449\_BWC Mercadal MiniSC images). Brass points out the flash of light  
9 proximal to Mercadal yelling "show me your hands, gun". Brass also points out  
10 his perception of Clark's movement of his arms to his chest as well as well as  
11 Clark's movement closing the distance with the officers (DOJ Report – Brass, p.  
12 28, 63). It should be noted that SA Brass appears to be documenting his  
13 observations based upon the BWC timestamp and not an individual frame (i.e.,  
14 04:26:43). It should also be noted that Brass reviewed the enhanced video and  
15 image files of the BWC videos (Mercadal and Robinet) and reported no new  
16 observations or perspectives (DOJ Report – Brass p. 55-56).


17 3.5.3 STAR Digital Video: I used Adobe Premiere Pro CC 2018 to conduct a  
18 frame by frame review of this file. I utilized this file in attempting to  
19 establish shot times and Clark's movements in correlation with other  
20 videos. Adobe's analysis indicated the video was providing 30.00 FPS. The  
21 data is presented in timecode format: Seconds; Frames  
22 (screen\_20180318\_212547\_01.ts).

- 24 • **Prior to the shots,** the FLIR shows the officers rounding the corner at 7572  
25 29<sup>th</sup> street and then retreating to cover. The first indication of Clark's  
26 presence is a small white dot that appears (Clark's silhouette) at the far  
27 end of the picnic table (2:04). Both Robinet and Mercadal are at the  
28 corner in a position indicting they have Clark in view. Clark walks forward

---

<sup>1</sup> Not seen in the stabilized video

- 1 between the residence and the picnic table before the first shot is fired
- 2 (3:17).

Time	
3:17	Probable first shot appears to be fired (Muzzle blast Robinet). Mercadal appears to move behind Robinet after the first or first few shots are fired. Clark is walking forward. Clark's arms do not appear to be extended in front of him at any point. The FLIR angle and direction should be considered in comparison to other incidents within the video when appendages are not seen against the backdrop of a torso.
3:28	Probable muzzle blast (Robinet). Clark is walking forward.
4:19	Clark begins to fall
4:29-5:03	<p>Probable muzzle blast (Robinet). As Clark falls, it appears that both arms extend outward in a triangle. The left arm then moves outward and away from the right arm (where phone was located).</p> 
4:25-5:03	Mercadal moves back to the corner. It is unknown what his field of view is from this position or when he was able to see or saw Clark.
5:22	A round appears to impact the ground in the backyard of 7574 29 <sup>th</sup> Street, skips across the yard and possible impacts the corner of the residence.
5:25-5:26	Clark appears to be on his hands and knees. A round strikes the picnic table. The first visible round likely fired by Mercadal (muzzle flash). A spot appears in the fence at 5:27.
6:05	A small hot spot (likely a round) appears on the Sofa behind Clark.
6:07	A round appears from underneath Clark's torso. He is still on hands and knees.



6:12-6:13	A muzzle flash appears (likely Robinet), and the ground is disturbed in the yard in front of Clark. A round also strikes the pavement well past Clark who appears to be prone. Clark's hand moves up to his head until 6:17.
6:15	Clark appears to be in a full prone position although his right hand is still (slightly) moving.
6:20	A round appears to strike the yard IFO Clark.
6:22-6:23	A muzzle flash from Robinet and a round sparks on the pavement past Clark.
7:10-7:12	There are indications of muzzle flash from both Robinet and Mercadal with a spark on the pavement past Clark. This is likely Robinet's last shot.
7:14-7:18	Clark's legs move together.
7:19	Probable muzzle flash from Mercadal. There is a very faint disturbance in front of the couch behind Clark.
7:25-7:26	Probable muzzle flash from Mercadal with hotspot appearing on couch behind Clark.
8:02	Probable muzzle flash from Mercadal with spark appearing on pavement. (Last round visible from either officer).

1

2 California Department of Justice Review of STAR video:

3 I received portions of the DOJ report after I had completed my video/image  
4 reviews and written this report. No changes in my analysis occurred based on  
5 DOJ's reported video analysis. In the areas where our observations overlap, I see  
6 no disagreement (DOJ Report – Brass p. 60). I found no analysis regarding the  
7 mechanics of Clark falling movement (e.g., arms in a triangular fashion).

8 3.5.4 Robinet BWC: I utilized the Kinovea© video analysis tool to conduct a  
9 frame by frame review of the initial contact with Clark in the backyard of  
10 7572 29<sup>th</sup> Street. The video was not manipulated in any way other than  
11 inserting a millisecond timer. This video file presented 30 frames in 1:00s on  
12 the inserted timer. (New File: [Kinovea Robinet.mkv](#)). I used this method  
13 (Kinovea) prior to discovering the enhanced videos.

Time	
08:07	Mercadal muzzle blast. <b><i>Each muzzle blast correlated with the weapons mounted light turning off and on.</i></b>
08:37	Mercadal muzzle blast.
08:64	Mercadal muzzle blast.
08:90	Mercadal muzzle blast.

09:14	Mercadal muzzle blast.
09:37	Mercadal muzzle blast.
09:60	Mercadal muzzle blast.
09:84	Mercadal muzzle blast.
10:07	Mercadal muzzle blast.
10:31	Mercadal muzzle blast. (Mercadal's first to last muzzle flash is 2.2s).
10:31-15:01	Video does not provide evidence of additional shots.
05:10:17- 05:25:42	These frames show a white object mostly obscured by Clark's head and partially underneath his hand. As the video progresses and Clark is handcuffed, it becomes clear the object is a cellular phone. At 5:21:25 an officer reaches down and appears to move the phone. The hand and phone go out of view. When the phone returns into view it is oriented differently and appears to have been moved – albeit a short distance.

### 3.5.5 Other Sources:

Mercadal BWC: I utilized the Kinovea® video analysis tool to conduct a frame by frame review of the initial contact with Clark in the backyard of 7572 29<sup>th</sup> Street. The video was not manipulated in any way other than inserting a millisecond timer. This video file presented 30 frames in 1:00s on the inserted timer (New File: [Kinovea Mercadal.mkv](#) ). I was unable to verify shot times and did not glean additional information in comparison with the enhanced version.

STAR/Robinet BWC/Mercadal BWC Synchronized: I utilized the Kinovea® video analysis tool to conduct a frame by frame review of the initial contact with Clark in the backyard of 7572 29<sup>th</sup> Street. The millisecond timer begins at 00:00:00 when the first apparent shot is fired (muzzle blast) and ends when the last apparent shot is fired (based on muzzle blast and ricochet sparks). 30 frames equate to approximately 1:00 second on the timer. The BWC videos both show movement in every frame within the referenced clip (00:00s-04:56s). The STAR video frames do not appear to change at :10s, :26s, 3:73s, and 3:83s (New File: [Composite Video](#)). I do not believe this is a reliable source as the STAR video shows muzzle blast from Mercadal's weapon after his 10 muzzle blasts are seen on Robinet's BWC.

- All three new Kinovea files are included in the "Clark\_Work\_Product" folder.



3.5.6 Shot Spotter Forensic Report: The shot spotter recorded the first shot at 21:26:48:925 and last shot at 21:26:53:428. (see Annex 7.1).

- Shot duration is ~4.5s
- The first 5 shots were fired in ~1.4 seconds (Robinet).
- Overlapping shots (6-17) were fired in ~1.6s.
- The last 3 shots were fired in ~.47 seconds (Mercadal).

3.5.7 Response Times Conclusion:

1. Time from when Clark first appears on the STAR video until a shot is fired: ~1.4s (Frame 1906 – 1864 = 43 frames x .033s) (STAR)
2. Time from the first shot until Clark is in the full prone (slight movement hand) is: ~2.9s (Frame 1906 – 1995 = 89 frames x .033s) (STAR)
3. Time from when Clark first begins to fall until he is on all fours: ~.6s (Frame 1939 – 1959 = 20 frames x .033s) (STAR).
4. Time from when Clark first begins to fall until he is in the full prone position (slight movement hand): ~1.8s (Frame 1939 – 1995 = 56 frames x .033s) (STAR).
5. Time from Clarks last movement (legs) until the last shot: ~.5s (Frame 2042 – 2028 = 14 frames x .033) (STAR).
6. Time from Clark's entering the full prone (slight movement hand) until Robinet's (apparent) last shot: ~.8s (Frame 2020 – 1995 = 25 frames x .033) (STAR).
7. Time from Clark's entering the full prone (slight movement hand) until Mercadal's (apparent) last shot: ~1.5s (Frame 2042 – 1995 = 47 frames x .033) (STAR).
8. Time from Robinet's first to last (apparent) round: ~3.7s (Frame 2020 – 1906 = 114 x .033). According to the Shot Spotter Forensic Report, the first five rounds were fired in ~1.4s with a ~.8s delay (total 2.2s) before additional shots are fired by both officers.
9. Time from Mercadal's first to last apparent round: ~2.1s (Frame 2042 – 1976 = 66 frames x .033). (STAR - Consistent with DOJ enhanced vide (muzzle blasts seen on Robinet's BWC).
10. Time from the first shot to the last shot (all): ~4.5s (Frame # 1907 – 2042 = 135 frames x .033). (STAR - Consistent with Shot Spotter Forensic Report).

- The DOJ enhanced video (BWC Videos Combined with Processed Audio) presents the duration of fire as ~4.7s. Robinet's first five shots are independent: ~1.6s and there is a .5s delay between the first and second series of shots.
  - According to Shot Spotter representative (Personal Conversation, December 6, 2018), the multiple sensor activations (more than 3) for this incident provide highly reliable data.<sup>1</sup>

#### 4. Forensic Evidence

##### 4.1 Round Counts

###### Robinet Round Count

Glock 19, 9mm, semi-automatic pistol, serial #YHK976: (10) rounds fired (Homicide Report p. 291). TLR-1 HL Stream light (Light determined from photos of Ofc. Robinet's Firearm).

###### Mercadal Round Count

Sig Sauer P226, .40 caliber, semi-automatic pistol, serial #UU749964. (10) rounds fired (Homicide Report p. 292). Blackhawk Night-Ops NTX (180 Lumens) (Light determined from photos Ofc. Mercadal Firearm)

##### 4.2 Clark Autopsy

Stephon Clark's Blood Alcohol Report showed an Ethanol result of .08% from his femoral blood sample taken at autopsy. The toxicology report from the Sacramento County Crime Lab showed Clark's blood contained the presence of the following:

16ng/mL of Delta-9-THC (+-3ng/mL)  
2.3 ng/mL of 11-Hydroxy-THC (+-.5ng/mL)  
236ng/mL of 11-nor-9-Carboxy-THC (+-54 ng/mL)  
60 ng/mL of Benzoylecgonine (Cocaine metabolite) (+-11ng/ mL)  
120ng/mL of Codeine (+-16ng/mL)  
82ng/mL (+- 16ng/mL) of Alprazolam (Xanax)  
5.8ng/mL (+-.5ng/mL) of Etizolam

###### Gunshot Wounds (7)

---

<sup>1</sup> A shot spotter expert would be needed to testify to the validity of the data.



1 **#1: Right side of neck (*through and through*):** Single gunshot wound that entered  
2 the right side of the neck (*approximately 3" below the right ear*), traveling right  
3 to left, horizontally.

4 **#2: Right upper shoulder:** Single gunshot wound that entered the top of the  
5 shoulder, traveling right to left, in a downward manner.

6 **#3: Right back shoulder (*nearly in-line with the armpit*):** Single gunshot wound  
7 that entered the right upper back (*shoulder*) area, traveling right to left, slightly  
8 back to front.

9 **#4: Right armpit area:** Single gunshot wound that entered the right side of the  
10 body (*at the armpit*), traveling right to left, slightly back to front.

11 **#5: Right side - below/behind #4 (*through and through*):** Single gunshot wound  
12 that entered the right side of the body (*approximately 5" below the armpit*),  
13 traveling right to left, slightly back to front.

14 **#6: Right side - below/behind #5 (*between the waist and armpit level*):** Single  
15 gunshot wound that entered the right side (*slightly back*) area of the body  
16 (*approximately between the waist and armpit level*), traveling right to left,  
17 slightly back to front.

18 **#7: Left upper leg (*through and through*):** Single gunshot wound that entered the  
19 front, lower quadricep area (*approximately 5" above the knee*), traveling front  
20 to back, in an upward manner, and exits the lower portion of the left buttocks.

21 An independent review was conducted by the San Diego Medical Examiner's  
22 Department. The report concluded, "...the Sacramento County Coroner's  
23 medicolegal death investigation of Stephan A. Clark was comprehensive,  
24 professional, well documented, and correct in its conclusions. No deficiencies  
25 are noted" (Consultation Report Clark 120518.pdf).

## 26 **5. Suicidal Ideations<sup>1</sup>**

27 On 3/17/2018, between 11:23 and 21:12 Clark and Salena M████ engaged in a  
28 series of text messages arguing about their relationship and a recent domestic  
29 violence incident. At 21:03 hours (PST) Clark texted "You want me to kill myself?"  
30 and at 21:05 hours (PST) "I'm not playin, don't do this". (Pr# 989927-008; chat-

---

<sup>1</sup> My intent is not to clinically diagnose Clark's state of mind; rather it is to provide information which correlates with his behavior when confronted by police.

1 11.txt). Clark also sent a picture to M [REDACTED] with a handful of yellow pills (Clark  
2 phone summary). According to the website drugs.com, the yellow pills imprinted  
3 with R039 are identified as Alprazolam.

4 Clark also conducted several internet searches (3/17/18 - 3/18/18) on various  
5 ways to commit suicide. Searches included:

- 6 1. "How much bleach can I drink before I die"
- 7 2. "Easiest ways to kill yourself"
- 8 3. "What makes carbon monoxide"
- 9 4. "What pills can you die from"
- 10 5. "Oxycodone overdose: How much amount of oxycodone to OD"
- 11 6. "How many Xanax can kill you"

12 After searching about Xanax, Clark's phone sent text messages requesting  
13 "more" "Xans" to someone (Clark phone summary).

14 Amauria H [REDACTED] (ex-girlfriend of Clark): Said she watched an Instagram video  
15 of Clark smoking marijuana earlier that day (in a car). (Homicide Report p. 210-  
16 214).

17 Janelle T [REDACTED] (ex-girlfriend of Clark): Texted and conversed the night of Clark's  
18 death. T [REDACTED] indicates the conversation was not friendly and they had a bad  
19 history. (Homicide Report p. 215-217).

20 Rohit V [REDACTED] (described Clark as one of his best-friends). Dropped him off at his  
21 grandmother's house Saturday morning. Knew Clark was upset about  
22 something. Knew he was fighting with ex-girlfriend. (Homicide Report p. 216-  
23 219).

#### 24 Clark's DV Incident with M [REDACTED]

25 Clark wrote an email to the Sacramento DA on 3/17/2018 showing concern  
26 about being arrested over a previous domestic violence incident between he  
27 and M [REDACTED] (3/16/2018). Based on the letter, Clark narrative indicates he is fearful  
28 of being arrested.

#### 29 Suicide by Cop (SBC)

30 The following information are key points from research on the phenomenon of  
31 "suicide by cop" or when a "subject engages in behavior which poses an



1 apparent risk of serious injury or death, with the intent to precipitate the use of  
2 deadly force by law enforcement against the subject"<sup>1</sup>

- 3 • Researchers evaluated OIS cases ( $n = 707$ ) from 90 American and
- 4 Canadian police departments between 1998 and 2006. A total of 256
- 5 cases of SBC were identified.
- 6 • 81% were spontaneous due to intervention or circumstances.
- 7 • 87% involved suicidal communication while 13% ( $n = 34$ ) did not.
- 8 • 95% were non-compliant with law enforcement.
- 9 • 90% aggressed against the police.
- 10 • 98% pointed or gestured with a weapon.
- 11 • 36% were under the influence of alcohol.
- 12 • 72% experienced relationship problems.
- 13 • 19% involved male subjects who feigned or simulated weapon possession.

## 15 6. Opinions

17 6.1. **Opinion: Based on the totality of the circumstances, a reasonable officer**  
18 **would have developed reasonable suspicion/probable cause to**  
19 **detain/arrest Clark for vehicle vandalism/burglaries, residential**  
20 **vandalism/burglary, prowling, and resisting, delaying or obstructing a**  
21 **peace officer. The subsequent foot pursuit of Clark into a backyard was in**  
22 **line with standard police practices and training.**

- 24 • Officers are taught they may develop probable cause based upon  
25 information from other law enforcement officers (Collective knowledge  
26 doctrine).<sup>2</sup>
  - 27 ○ The original 911 call indicated vehicles had been
  - 28 vandalized/burglarized. Officer's met with R [REDACTED] and confirmed the
  - 29 dispatch information.
  - 30 ○ The suspect was described by R [REDACTED] as 6' tall, wearing a black
  - 31 hoodie and black pants. The suspect was last seen fleeing into the
  - 32 backyard of nearby 7566 29<sup>th</sup> Street.
  - 33 ○ Clark was first located by STAR in the backyard of 7570 29<sup>th</sup> Street
  - 34 which is near the original location of the 911 call. Clark was observed

<sup>1</sup> Mohandie, K., & Meloy, J. R. (2011). Suicide by Cop Among Female Subjects in Officer-Involved Shooting Cases. *Journal of Forensic Sciences*, 56(3), 664-668. doi:10.1111/j.1556-4029.2010.01686.x

<sup>2</sup> Alameda County Point of View: [http://le.alcoda.org/publications/point\\_of\\_view/files/SS\\_14\\_PC\\_Reliability.pdf](http://le.alcoda.org/publications/point_of_view/files/SS_14_PC_Reliability.pdf); *California Peace Officer's Legal and Search & Seizure Filed Source Guide* (2012). LawTech Publishing.

- 1 breaking the rear window to the residence (burglary/vandalism). The  
2 information was reported via radio to officers Mercadal / Robinet.
- 3 ○ Clark's movement was tracked and reported by STAR and he was the  
4 only person in the immediate area (other than vehicle). STAR stated  
5 that Clark matched a portion of the initial suspect description (black  
6 hooded sweatshirt).
- 7 • Clark was seen jumping a fence into the backyard of 7572 29<sup>th</sup>  
8 Street and peering into another vehicle (reported by STAR).
- 9
- 10 • Mercadal described first seeing Clark wearing a black hooded sweatshirt  
11 which matches a portion of the original description. Clark fled from Officer  
12 Mercadal after receiving lawful commands to stop, a violation of  
13 PC148(a)(1). Clark should reasonably be aware of the police presence  
14 due to the helicopter (searchlight) and presence of fully uniformed  
15 officers.
- 16
- 17 • Based on the above information, officers would likely develop reasonable  
18 suspicion or probable cause that Clark was involved in the original vehicle  
19 vandalisms / burglaries. As the situation unfolded, the updates from STAR  
20 provided officers with probable cause that Clark had vandalized a  
21 residence and was a prowler. Lastly, Clark's flight from officer presented  
22 additional probable cause that Clark was resisting, delaying or obstructing  
23 their lawful commands (PC148, PC459, PC594, PC647(h)).
- 24
- 25 • Officer Mercadal & Robinet's hot pursuit of Clark into a fenced backyard  
26 was reasonable and lawful based on the totality of the circumstances.<sup>1</sup>
- 27 ○ Perimeters are often preferred in many situations where resources are  
28 available and the circumstances permit. However, Clark's actions,  
29 inclusive of breaking the window of a neighbor's residence which  
30 provides reasonable suspicion/probable cause for vandalism or  
31 attempted burglary, elevated the need to stop his erratic and  
32 dangerous behaviors. Officers did not know Clark lived at the  
33 residence at 7572 29<sup>th</sup> Street. Officer Robinet indicated he was already  
34 concerned with what Clark "might do next" (Homicide Interview).  
35 Ultimately, officers engage in yard to yard searches under many

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<sup>1</sup> Alameda County Point of View (2003/2018). *Police Trespassing/Exigent Circumstances*. Retrieved from:  
[http://le.alcoda.org/publications/point\\_of\\_view/;](http://le.alcoda.org/publications/point_of_view/)



different circumstances and on regular occasions before and after perimeters are established.

- Ca. POST learning domain 21 (Patrol Techniques) which is taught to officers in the basic academy indicates foot pursuits are inherently dangerous and that engaging in them should be based on a risk analysis. Public safety considerations are part of the analysis.

**6.2. Opinion: Officers Robinet and Mercadal reasonably perceived and had probable cause to believe Clark was an immediate deadly threat causing them to fear death or serious bodily injury<sup>1</sup>. Their act of using deadly force, based upon the totality of the circumstances and in response to Clark pointing what they perceived to be a weapon, while also posturing in a recognized shooting platform, is reasonable and in line with contemporary police practices and training.**

#### **Graham Analysis<sup>2</sup>**

- *Severity of the Crime:* perceived attempted homicide of a Peace Officer.
- *Level of Active Resistance:* Perceived to be deadly.
- *Potential for injury:* Perceived serious bodily injury (PC243(f)(4)) or death.

**At issue is whether the officer's perceptions were reasonable<sup>3</sup>.** There are several objective factors which support the officer's perspective that Clark had a handgun and was about to or was shooting at them. These include; (1) Clark's movements consistent with an Isosceles shooting stance, (2) a significant flash of light at Clark's location, (3) Clark's closing the distance with legs possibly oriented similar to a shooting stance, (4) Clark's fall with his hands together with cell phone while oriented in an Isosceles shooting stance, and (5) Statements by and behaviors of officers just after the shooting are in line with their reported perception (see items 1-5 below):

---

<sup>1</sup> "A person has probable cause to believe that someone poses a threat of death or great bodily injury when facts known to the person would persuade someone of reasonable caution that the other person is going to cause death or great bodily injury to another". (CalCrim 507. Justifiable Homicide: By Public Officer).

<sup>2</sup> As perceived by the officers at the moment deadly force was used. Determining reasonableness requires an evaluation of whether the belief (i.e., fear for life) is adequately supported by objective fact (Graham v. Connor, 490 U.S. 386 (1989); California Penal Code Section 198).

<sup>3</sup> PC 198; Graham v. Connor 490 U.S. 386, 394 (1989)

**1. Clark's movements:** DOJ enhanced BWC frames provide indications Clark moved in a manner which is consistent with the Isosceles shooting stance reported by both officers (BWC Videos Combined and Stabilized with Processed Audio.mp4; DOJ Report-Brass p. 28).

- Below are DOJ enhanced screen shots from Robinet (14459 – 14461) and Mercadal's (14022-14024) BWCs. This series is proximal to Mercadal yelling "gun". Although blurred, the areas of contrast at Clark's chest (light gray writing) vary significantly and are in-line with an Isosceles shooting stance.





1

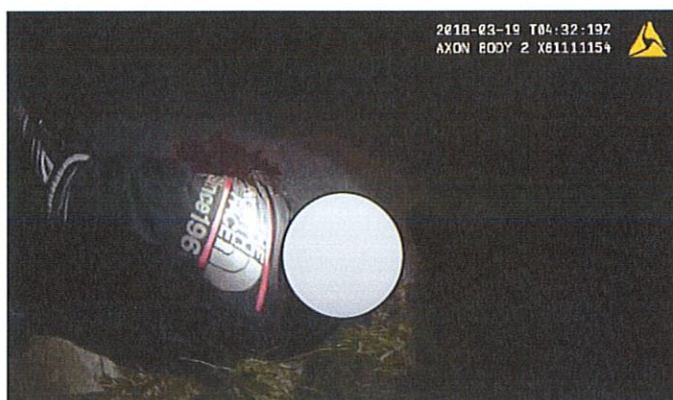
DOJ Enhanced (50 % zoom) Mercadal Frames 14022-14023



2

3

Clark's Hoodie (BWC Screen Capture)<sup>1</sup>



4

5

**2. Light Flash:** There is evidence of a significant light flash proximal to the shooting which could be the muzzle flash Mercadal reportedly perceived (Homicide Interview).

6

7

8

- A DOJ screen shot shows a significant flash of light which appears to be directly in front of Clark (cell phone light?) (Robinet 14447; 50% zoom).

9

---

<sup>1</sup> Intended only to show the large light-colored writing at the center of Clark's hoodie. Face covered out of respect for the deceased.



1  
2 **3. Closing the distance in a shooting stance:** There is evidence that Clark closed  
3 the distance on the officers and continued to present in a shooting stance with  
4 his cellular phone. This point should be associated with the next section (4)  
5 discussing Clark's orientation when he fell (BWC Videos Combined and  
6 Stabilized with Processed Audio.mp4).

- 7 • In the below screen capture, the orientation of Clark's legs and the variation  
8 of the white stripes between frames 14120 to 14150 (Mercadal) could be  
9 indicative of a shooting stance (legs shoulder width apart with bended  
10 knees). These frames are proximal to Clark's falling to the ground after being  
11 shot. Therefore, the orientation of Clark's arms and hands (holding cell  
12 phone) as he fell after being shot are additive in nature concerning his  
13 presenting in a shooting stance (Isosceles) (see #4: orientation while falling).  
14 Ultimately, there is no conclusive frames showing how Clark's hands and arms  
15 are oriented during this time. However; these frames do objectively  
16 demonstrate Clark has moved forward toward the officers.<sup>1</sup>

17  
18  
19  
20  
21  

---

<sup>1</sup> I initially believed Clark was moving away from the wall due to the leg orientation. Upon further review it appears he remains close to the wall of the house as the frames progress.



1 Frames 14120 & 14126



2

3

4

Intentionally left blank

5

6

7

8

9

10

11

12

13

1 Frames 14144 - 14150



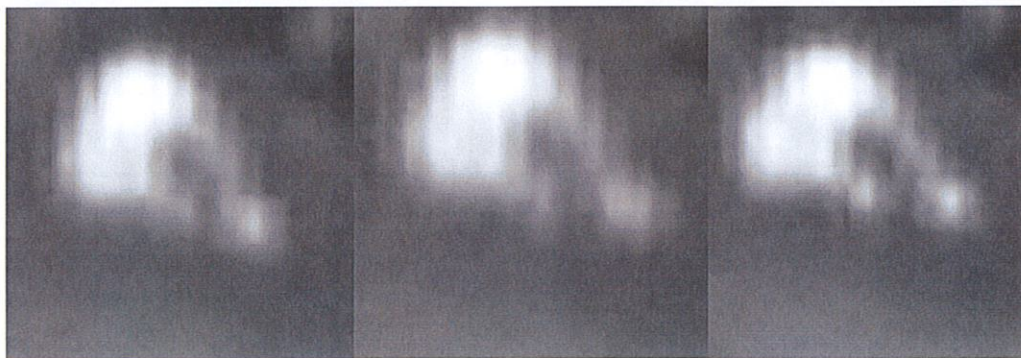
2



3



- 1 **4. Orientation while falling:** Just after the above video frames, Clark appears to  
2 fall forward with both hands together, positioned in-front of him in a manner  
3 consistent with the Isosceles shooting stance (STAR video:  
4 screen\_20180318\_212547\_01.ts). Clark's arms do not appear visible down by  
5 his side or extended in front of him at any point while he is walking forward.  
6 However, as he falls (STAR video), it appears that both arms extend outward  
7 in a triangle. The left arm then moves outward and away from the right arm  
8 (holding phone) (See STAR frames; Still5Zoom – Still10Zoom in folder). This  
9 should be considered as an indication of Clark's hand and arm positioning  
10 prior to the below photos and as he approached the officers.
- 11 ○ Robinet does not describe Clark moving forward, but indicates Clark  
12 was in an Isosceles shooting position when he saw him after retreating  
13 to cover (Homicide Interview).
  - 14 ○ Mercadal describes Clark as moving forward in an Isosceles shooting  
15 stance (Homicide Interview).



- 18 ○ In considering Clark's arms not being visible prior to these frames: A FLIR  
19 expert would be required to opine, but it is reasonable that from the FLIR  
20 angle (facing Clark from the front at a downward angle), Clark's  
21 extended arms may not be visible if they were in front of his body. This

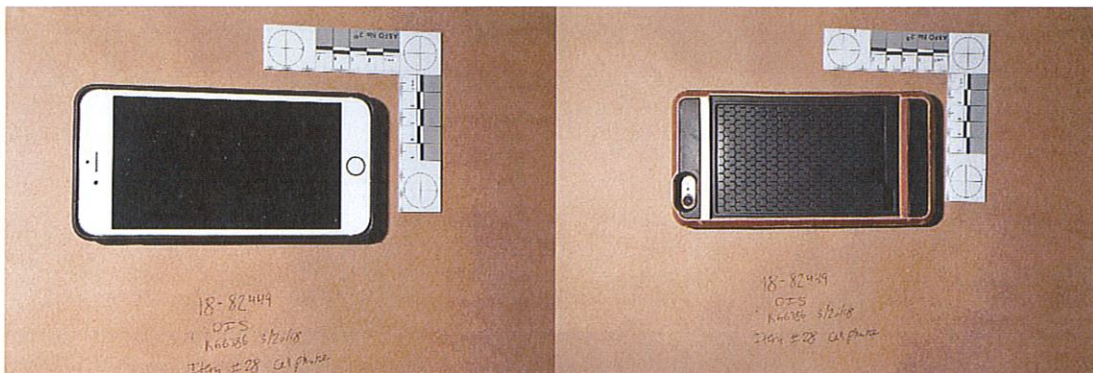
hypothesis is formed based upon other arm movements not visible at this zoom level when they are in front of the torso (officers).

- A cell phone is clearly visible on Robinet's BWC as he approaches Clark. The cell phone is underneath Clark's right hand and next to his head. The cell phone has a glass face with a white border on the front and a black back with some brown bordering (Evidence Item #28: Homicide report). The video evidence (STAR) indicates Clark had the phone in his hand as he fell in the shown fashion and then his hand extends up to his head and the final resting place as demonstrated on the BWC below.

Clark's phone as officers approached



Recovered Cell Phone



5. **Statements by and behaviors of officers:** The officers' behaviors and spontaneous statements are similar which lends credibility to their individual perceptions and investigatory statements.
- Mercadal yells "show me your hands" and "gun" proximal to the initial series of frames with Clark present. Both Mercadal and Robinet move



1 quickly to cover (Mercadal first). Both officers appear to respond to the  
2 same threat perception (Mercadal & Robinet BWCs).

- 3
- 4 • Both officers look around the corner and one of the officer's again yells  
5 "show me your hands" and "gun, gun, gun" as Clark approaches. Mercadal  
6 takes cover a second time and Robinet begins firing – both appearing to  
7 react to a similarly perceived threat (Mercadal & Robinet BWCs).

- 8
- 9 • Seconds after the shooting the officers engage in spontaneous conversation  
10 indicating their perceptions (Robinet & Mercadal BWCs):

- 11 • Mercadal asks Robinet if he is okay and then states: "I don't  
12 think I'm hit or anything".

- 13 • Mercadal asks, "Can you see it Jerrod" and Robinet responds, "I  
14 don't see it". These statements are in reference to Clark's suspected  
15 handgun.

- 16 • After the shooting and while still holding Clark at gunpoint,  
17 Mercadal states, "he came up, and he kind of approached us  
18 hands out...".

- 19 • After the shooting and prior to Clark being handcuffed, Robinet  
20 describes how Clark presented as if he had a weapon. Robinet's  
21 hands can be seen coming together (consistent with Isosceles  
22 shooting stance) as he explains Clark's behavior (Robinet BWC).

- 23 • Both officers are breathing heavily proximal to the shooting which is  
24 consistent with stimulant hormones released after an acute fear response  
25 (HPA axis). The duration of heavy breathing continues well after the  
26 shooting and while both officers had been mostly static for a significant  
27 time (Robinet & Mercadal BWCs).

- 28 • Both officers' interviews are consistent in describing Clark's presenting in  
29 an Isosceles shooting stance. Mercadal describes a bright metallic shiny  
30 object in Clark's hands and a muzzle flash. Robinet said he believed Clark  
31 had a metallic object in his hand

- 32 • Officer Robinet said he was scared Clark was going to shoot both  
33 him and Mercadal (Homicide Interview).

- Officer Mercadal said he was scared and feared for his life (Homicide Interview).



#### Graham Analysis continued

##### Totality of Circumstances:

Officers responded to and engaged in a situation involving a vehicle burglary call where a subject had broken the windows to several vehicles, fled from the scene and into the backyard of a residence where he broke a residential back window. This type of behavior would cause elevated concern in a reasonable officer. Robinet indicates this by stating he was concerned what the suspect, "may do next" during his homicide interview.

- While on scene, STAR advised the officers that Clark was breaking the window of a residence with a tool bar or some type of object. STAR then advised Clark was running south and enters the yard of 7572 29<sup>th</sup> Street and looking in the window of another vehicle (STAR video).
- Clark fled from officers into a very dark environment after ignoring commands to stop and show his hands by fully uniformed police officers.



- 1 • STAR illuminates the backyard somewhat equivalent to daylight  
2 conditions up until the moment officers contact Clark and then re-  
3 illuminates just prior to the shots (see HF section below).
- 4 • In addition to the light flash previously discussed, other bright flashes of  
5 light appear between fence slats in the moments prior to the shooting  
6 which may have contributed to officers believing Clark was pointing a  
7 firearm or firing at them (BWC and scene video).
- 8 • Although unknown to the officers at the time, there is significant evidence  
9 Clark was suicidal and under the influence of both drugs and alcohol  
10 which may have influenced his behavior (see section #5).
- 11 • Clark's behavior in presenting an Isosceles shooting stance and closing  
12 the distance with officers is the essence of a tense, uncertain, and rapidly  
13 evolving situation which required a split-second decision.
- 14 • Robinet described Clark as "having the drop on us" and was  
15 surprised Clark had not begun firing (Homicide Interview).
- 16 • Mercadal believed he was being fired upon (Homicide Interview).
- 17 • Considering the officer's belief Clark was firing or about to fire on them  
18 and based upon my training and experience; retreating or observing from  
19 cover is not a viable option in this situation. Suspects can fire as rapidly as  
20 officers (~4 rounds a second) and move around cover quickly and easily.
- 21 • Officers are not required to cease or desist, nor shall they be deemed an  
22 aggressor or lose their rights to self-defense through reasonable force (PC  
23 835a).
- 24 • While setting a perimeter may be the best tactical decision in many similar  
25 situations, Clark's known and reasonably suspected actions up to this  
26 point were erratic. His breaking of a residential window in this context  
27 elevated the need to stop his behaviors. Therefore, a two-officer team  
28 moving to apprehend Clark is reasonable under the circumstances.

29 **6.3. Opinion: Several aspects of human capabilities and limitations as defined**  
30 **under the umbrella of Human Factors science apply to this incident.**  
31 **Ultimately, the application of scientific theory and associated empirical**  
32 **evidence to the number and duration of shots fired provides an**

1        *understanding of those issues and to rounds entering Mr. Clark's*  
2        *side/back.*

3        **Decision-making and Response Time (See section #2):**

- 4        • Human beings often make rapid judgements by matching patterns  
5        (system 1). This heuristic process is essential to everyday human function.  
6        Outcome behaviors from this process are often correct, but sometimes  
7        the pattern match is incorrect and leads to misperception. When little  
8        time is available to act, these misperceptions can lead to misaligned  
9        behaviors such as a mistake of fact shooting.
- 10        ○ In context, a suspect in Isosceles shooting stance with a reflective  
11        object in hand is a recognizable pattern for a trained police officer.  
12        The pattern reasonably matches a threat to life. Any reasonable officer  
13        would immediately fear for their lives when confronted with similar  
14        behavior by a criminal suspect.
- 15        ○ In response to strong stimulus-response-compatibility (Isosceles stance),  
16        both officers immediately ducked behind cover in avoidant behaviors  
17        to a similarly perceived threat. Two separate individuals whose  
18        judgements and behaviors are similar in response to the same stimulus  
19        adds credibility to the basis for the avoidant response (fear).

20        **Response time to start firing**

- 21        • Robinet appears to have fully rounded the corner and reasonably had  
22        Clark in view at 08:05:05s. He does not begin to fire until 08:07:11 (DOJ  
23        enhanced BWC video). This indicates Robinet had an opportunity to view  
24        Clark for ~2s before he fired the first round (BWC Videos Combined and  
25        Stabilized with Processed Audio; Section 3.5.7 of this report).
- 26        ○ This is a significantly slower shooting response than the average of .83s  
27        firing from a high ready position (.44s to 1.45s).<sup>1</sup> This slowed response  
28        could be due to his attempts to confirm Clark's level of threat.
- 29        ○ Mercadal fired ~2s after Robinet's first round (BWC Videos Combined  
30        with Processed Audio). The delay is mostly based on his initially moving  
31        to cover.
- 32

---

<sup>1</sup> Officers were in a controlled environment, focused upon the stimulus with an expectation for the start shooting response.



- By the time Mercadal moved out from cover, raised his weapon, and fired; Clark was on his hands and knees (STAR video). The video evidence is inconclusive as to when Mercadal reacquired a visual of Clark. However, time should be allotted to see Clark, raise the weapon and fire. Clark went from a standing to all fours in ~.6s while more-likely-than not presenting in a manner similar to an Isosceles shooting stance with the cell phone in his right hand. Again, raising to fire from a high ready has been recorded to take an average of .83s in laboratory experiments. This simply demonstrates how quickly the environment can change in split-seconds.
- Based on Mercadal's initial observations before, and his confirmation of those observations after he emerged from cover, it is likely his limited attentional resources would then be focused on raising his weapon and locating Clark (prior to firing) and less on analytically processing Clark's current behavior or what he had in his hands at that moment.

#### **Duration of Fire (shot spotter):**

- Both officers fired a total of 20 rounds in ~4.5 seconds.
  - Mercadal fired 10 rounds in ~2.1 seconds.
  - Robinet fired his first 5 rounds in ~1.4 seconds and 10 rounds in ~3.7s with a ~.8s delay after the first 5.

#### **Response time to stop firing:**

- Robinet stopped firing ~.8 seconds after Clark entered a full prone position, but before Clark ceases all movement (STAR).
- Mercadal stopped firing ~1.5 seconds after Clark entered a prone position and ~.5s after he ceased all movement (legs) (STAR).
  - In several laboratory studies in which officers had pre-existing knowledge of a stop shooting response, officers fired 0-4 rounds after the cessation of a light stimulus with some taking 1.5s to stop.
    - Laboratory conditions were controlled with one stimulus and one response. There was no physiological arousal or aspects of divided attention or decision making related to a real-world event. In all cases officers already knew they were to stop firing (expectancy decreases RT).

- 1
- 2       ○ Officers are taught to continue firing until the threat has ceased. In
- 3       many cases, police train the threat has ended when movement has
- 4       stopped or after a suspect has entered the prone position. However,
- 5       when that perception is ultimately realized is variable and no hard and
- 6       fast rule of science can control for every variable. Several aspects that
- 7       should be considered as affecting perception & response time:
- 8       • As weapons rise in front of the face, the arms, hands and weapon
- 9       become obstructions to the field of view. This can impair reaction
- 10      time to stop shooting.
- 11      • It must be considered at which point an officer in this situation
- 12      would notice a change downrange while focusing on aligning their
- 13      weapon and firing (divided/selective attention/tunnel vision). From
- 14      that point, there must be an allowance to process the information
- 15      and send a stop signal for a repetitive motor response to cease.
- 16      • In this case, issues with vision adaptation (e.g., night vision), debris
- 17      causing reflection from lights (e.g., fog-like), physiological arousal,
- 18      attention, and perception (e.g., tunnel vision) could all have an
- 19      affect on the ability to perceive and respond to the threat ceasing
- 20      (See vision section below).
- 21      • Often, observers of participant performance do not believe an
- 22      object, item, or person assumed to be within the participant's visual
- 23      field should have been seen. This belief should be viewed
- 24      considering the videos found in Section 2.4 of this report.
- 25
- 26      • It should be noted that neither Robinet or Mercadal fired until their
- 27      magazines were empty which indicates a level of self-control and
- 28      cognitive assessment. The round count showed Mercadal had 2 rounds in
- 29      a 12-round magazine and Robinet had 6 rounds in a 17-round magazine.
- 30
- 31      • **Shot placement:** Research indicates a human body may fall from the
- 32      standing to the prone in ~1.1 seconds. During that time officers may fire 5-6
- 33      rounds (.25s per round). The method in which a body falls to a prone position
- 34      is unpredictable and can include turning, twisting, and bending at the waist.
- 35      Officers are trained to "track" an object with their weapons as it moves, and



1 a body can fall through the gunfire - ensuring that rounds will enter a suspect  
2 at unexpected angles.<sup>1</sup>

- 3
- 4 • Clark moved from a standing position to a prone position in ~1.8s while  
5 shots were being fired. This is inclusive of a short period of crawling forward  
6 on his hands and knees.
  - 7 ○ The STAR video and final resting place demonstrates that Clark turned  
8 his right side to officers and fell forward on his hands and knees while  
9 Robinet and Mercadal fired.
  - 10 ○ In the case of the 1.8s start fall to full prone time: Applying a 4 round  
11 per second firing rate (with a round fired at the beginning of the fall), it  
12 would be expected for Clark to have been struck by 7 - 8 rounds if a  
13 single officer stopped firing immediately upon perceiving a prone  
14 position ( $1.8 / .25s = 7.2$  rounds).
  - 15
- 16 • As a force options instructor I have witnessed over 100 simulated shootings  
17 in a controlled environment. In every case, I "rewind the tape" to see the  
18 impact location of laser-based shots. Often the shots are in the side, back,  
19 or even the top of the head of the suspect based on their falling  
20 movements. Officers rarely stop firing immediately upon a body falling  
21 and often fail to see certain important aspects of an event that occur  
22 right in front of them. I have conducted several years of force on force  
23 training using weapons which fire plastic marking cartridges. Again, I have  
24 seen impact locations in the side and back based on the suspects falling  
25 movements.  
26
- 27 • The Ca. POST ICI Officer Involved Shooting and Force Investigations  
28 Course presents a video recorded shooting scenario in which a subject  
29 enters a room and opens fire. Two officers return fire and the subject turns  
30 while falling to the ground. Most of the rounds (paint cartridge markings)  
31 are located on the suspects back.  
32
- 33 • I have conducted over 50 in class simulations in which officers use deadly  
34 force against a subject exiting a vehicle. The subject, in daylight  
35 conditions, clearly points to and then grabs a visible pistol in the driver's  
36 door panel pocket. He then quickly reaches up and points it at the  
37 officers. I independently interview each officer and have found that most  
38 (if not all) accurately describe the shooting motions by the suspect but fail  
39 to accurately describe where the gun came from or what type of gun it

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<sup>1</sup> This statement is not meant to indicate Clark was not struck with bullets after he was in a prone position.

1 was. Often the gun is simply described as a black rectangular object  
2 pointed at them. It is the context of the situation along with the  
3 recognized behaviors of the suspect that elicit a shooting response.  
4

- 5
- 6 • **Vision:** The multiple and extreme changes in environmental lighting would  
7 very likely influence both officer's night vision in a negative way. Visual acuity  
8 and contrast sensitivity are essential to visual acuity and can affect response  
9 time negatively. Also, any obstructions to the field of view  
10 (arms/weapon/environmental) should be considered.  
11
- 12 • STARS high intensity search lamp shined directly at officers prior to entering  
13 the backyard of 7572 29<sup>th</sup> street.
- 14 • A short time after, officers chased Clark from a dark environment to the  
15 backyard. STARS search lamp illuminates the area and then extinguished  
16 just as officers were contacting Clark. The change in area illumination was  
17 extreme (see photos).

18 This section intentionally left blank  
19  
20  
21  
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29  
30



1

29<sup>th</sup> Street STAR Search Light (dark to light)



2



3



4

5

6

7

1

Entering backyard (dark to light)



2

3

First contact with Clark (light to dark)



4

5

Second contact of Clark (dark to light)



6

7

8

9

10

11

12

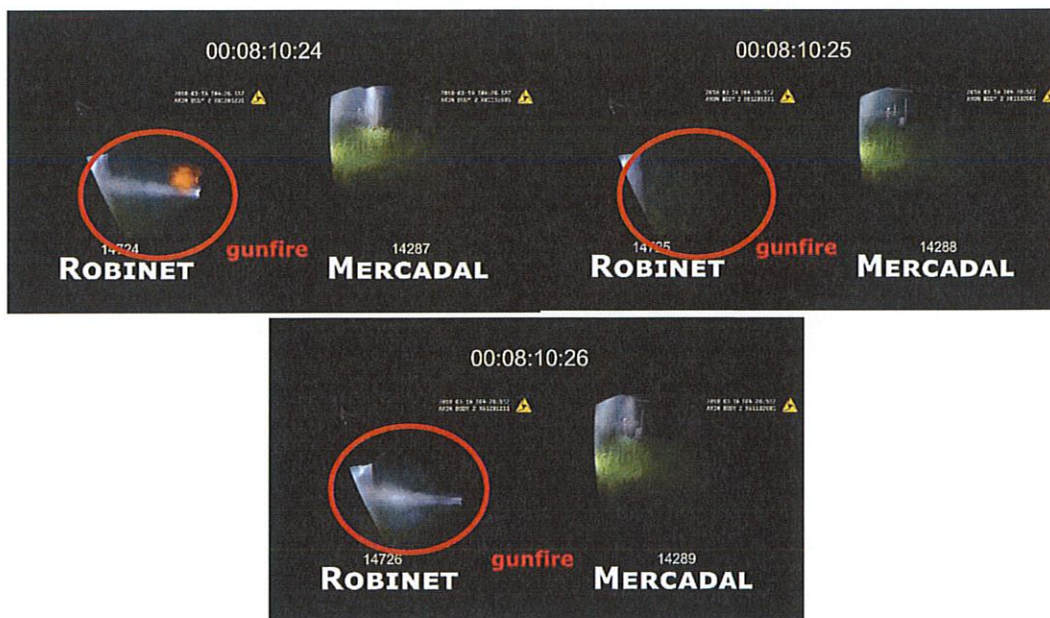
13



- Officer Robinet's handheld flashlight reflects off the side of the house directly in front of his position. This occurred just prior to shots being fired.



- Mercadal's weapons mounted light turned off and on between each shot.



- Smoke and debris from firearms discharges reflected light from the officer's sources of illumination.



- Clark's prone position was partially obscured due to tall grass.



Note 1: Although each case is unique, mistake of fact shootings in which a subject presents an object in hand while also mimicking a shooting stance have previously occurred around the nation with these recent incidents in California:

- San Diego: A subject presented a vape smoking device at officers in a two handed shooting stance (<http://www.trbas.com/media/media/acrobat/2017-01/92306758-10155900.pdf>).
- Butte County: A subject presented a pipe at officers in a two handed shooting stance



1                   ([https://www.scribd.com/document/393722100/Hendrix-GD-OIS-](https://www.scribd.com/document/393722100/Hendrix-GD-OIS-Preliminary-Finding-Press-Release#from_embed)  
2                   [Preliminary-Finding-Press-Release#from embed](https://www.scribd.com/document/393722100/Hendrix-GD-OIS-Preliminary-Finding-Press-Release#from_embed) ).

3       Note 2: The United States Court of Appeals, 4<sup>th</sup> district provides some guidance  
4       for evaluating reasonableness in mistake of fact shootings:

5           *(Officer) Russell ultimately was mistaken as to the nature and extent of the*  
6           *threat posed by Anderson, which resulted in a tragic consequence to*  
7           *Anderson. Nevertheless, as we stated in Elliott V Leavitt (4th Cir. 1996) 99*  
8           *F.3d 640, 644, 'the Fourth Amendment does not require omniscience ....*  
9           *Officers need not be absolutely sure ... of the nature of the threat or the*  
10          *suspect's intent to cause them harm --the Constitution does not require*  
11          *that certitude precede the act of self-protection.'* (*'Also irrelevant is the*  
12          *fact that Crawford was actually unarmed. Anderson did not and could*  
13          *not have known this. The sad truth is that Crawford's actions alone could*  
14          *cause a reasonable officer to fear imminent and serious physical harm.'*)  
15          *Anderson's actions unwittingly caused Russell to reasonably fear imminent*  
16          *and serious physical harm.*

17  
18  
19  
20  
21  
22  
23       The aforementioned findings and opinions are based on my initial review of the  
24       listed documents as provided to me at this time. I will alter, amend, enhance, or  
25       delete my findings and opinions as necessary following my review of any  
26       additional discovery in this case.

27  
28                               *David M. Blake*  
29       Signed \_\_\_\_\_ Date: February 5<sup>th</sup>, 2019  
30                               David M. Blake, M.Sc.  
31  
32

## 7. Exhibits

### 7.1. Shot Spotter Data




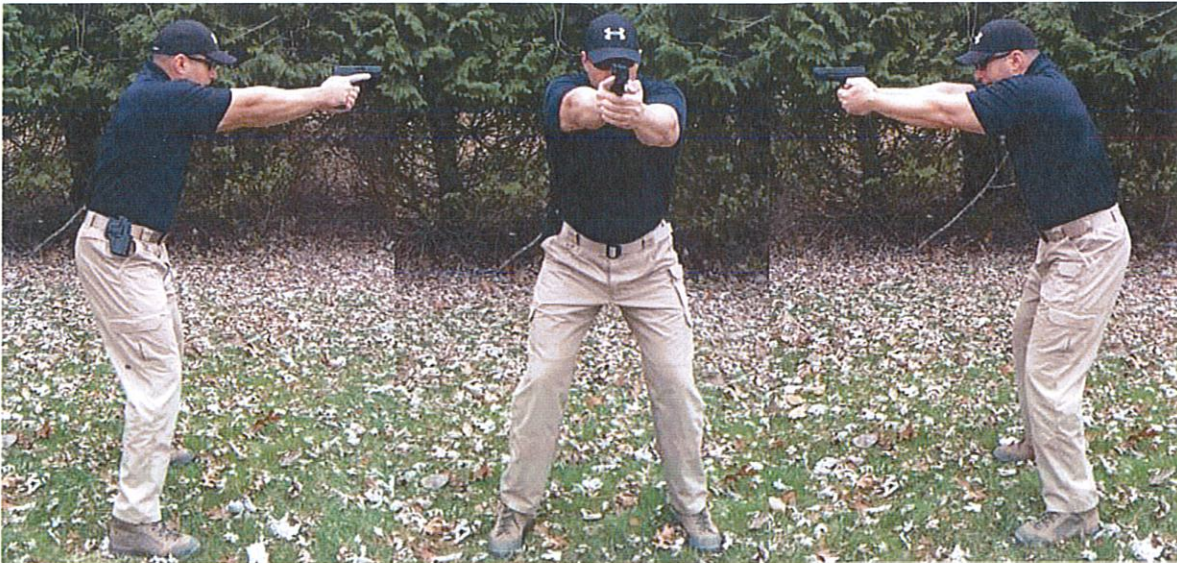
Shot	Discharge Time	Latitude	Longitude	
1	21:26:48.925	38.482356	-121.472845	 <div>Robinet 1<sup>st</sup> 5 Rounds</div>
2	21:26:49.249	38.482350	-121.472850	
3	21:26:49.582	38.482356	-121.472845	
4	21:26:49.940	38.482356	-121.472845	
5	21:26:50.316	38.482356	-121.472845	
6	21:26:51.113	38.482342	-121.472859	 <div>2 Rounds fired almost simultaneously after delay.</div>
7	21:26:51.203	38.482355	-121.472847	
8	21:26:51.459	38.482359	-121.472839	 <div>Mercadal's last 3 rounds</div>
9	21:26:51.506	38.482370	-121.472873	
10	21:26:51.748	38.482360	-121.472846	
11	21:26:51.803	38.482356	-121.472845	
12	21:26:52.011	38.482356	-121.472845	
13	21:26:52.176	38.482356	-121.472845	
14	21:26:52.252	38.482356	-121.472845	
15	21:26:52.485	38.482356	-121.472845	
16	21:26:52.672	38.482381	-121.472876	
17	21:26:52.715	38.482335	-121.472852	
18	21:26:52.959	38.482356	-121.472845	
19	21:26:53.195	38.482356	-121.472845	
20	21:26:53.428	38.482356	-121.472845	

Table 1 – Shot timeline



## 7.2. Example of Isosceles Shooting Position<sup>1</sup>



<sup>1</sup> DeCicco, K. (2016, May 3). The 3 shooting stances: Which one's right for you? (PoliceOne.com). Retrieved on December 4<sup>th</sup>, 2018 from <https://www.policeone.com/police-products/firearms/training/articles/7981637-The-3-shooting-stances-Which-ones-right-for-you/>

