DATE FILED: September 13, 2021 1:58 PM
FILING ID: 400FC90AEE4E8
CASE NUMBER: 2020SC430

SUPREME COURT, STATE OF COLORADO Ralph L. Carr Judicial Center 2 East 14th Avenue Denver, CO 80203 Certiorari to the Colorado Court of Appeals Case No. 16CA244	
THE PEOPLE OF THE STATE OF COLORADO Petitioner v. JOSE ORNELAS-LICANO Respondent	
Megan A. Ring Colorado State Public Defender JAMES S. HARDY 1300 Broadway, Suite 300 Denver, CO 80203 Phone: (303) 764-1400 Fax: (303) 764-1479 Email: PDApp.Service@coloradodefenders.us Atty. Reg. #38173	Case Number: 20SC430

JOSE ORNELAS'S ANSWER BRIEF

CERTIFICATE OF COMPLIANCE

I hereby certify that this brief complies with all requirements of C.A.R. 28 and C.A.R. 32, including all formatting requirements set forth in these rules. Specifically, the undersigned certifies that:

This brief complies with the applicable word limit set forth in C.A.R. 28(g).

It contains 9,500 words.

This brief complies with the standard of review requirement set forth in C.A.R. 28(b).

> In response to each issue raised, the Respondent must provide under a separate heading before the discussion of the issue, a statement indicating whether respondent agrees with petitioner's statements concerning the standard of review and preservation for appeal and, if not, why not.

I acknowledge that my brief may be stricken if it fails to comply with any of the requirements of C.A.R. 28 and C.A.R. 32.

TABLE OF CONTENTS

Page

ISSUE 1

CASE STATEMENT 1

FACTS 1

Shooting Incident 2

Shreck Proceedings 7

Expert Trial Testimony 9

The Court of Appeals' Opinion 13

ARGUMENT SUMMARY 15

ARGUMENT

I. Certiorari was Improvidently Granted. 16

II. Trial Courts Must Serve as Gatekeepers to Prevent Admission of Junk Science. 17

III. Gilliam's Testimony Failed CRE 702's Gatekeeping Guardrails. 20

A. Standards. 20

B. Gilliam was Unqualified to Provide His Opinion. 21

C. Gilliam's Testimony Did Not Pass CRE 702's Reliability Test. 25

D. The Trial Court Failed to Make Sufficient Findings. 29

E. Gilliam's Testimony was Not Helpful to the Jury and Failed CRE 403's Balancing Test. 30

IV. The State's Challenges to the Court of Appeals' Opinion Fail. 33

A. The Court Analyzed Gilliam's Testimony Under Well-Established Colorado Law. It Correctly Decided the Record Lacked Sufficient Support for Reliability. 33

B. The Court of Appeals' *Newell* Discussion Did Not Impose New Requirements for Expert Testimony..... 34

C. The State's Dichotomies Fail. 38

Science vs. Experience..... 38

Methods vs. Conclusions 42

V. Several Cases from Other Jurisdictions Support the Court of Appeals' Opinion. 44

Parvin..... 44

Hathaway 45

Walters and *Harris*..... 46

VI. The State Cannot Demonstrate the Errors Were Harmless. 47

CONCLUSION..... 50

CERTIFICATE OF SERVICE 51

TABLE OF CASES

Best v. Lowe's Home Ctrs., 563 F.3d 171 (6th.Cir.2009)..... 35

Bloom v. People, 185 P.3d 797 (Colo.2008)..... 20,21

Bowden v. State, 610 So. 2d 1256 (Ala.Crim.App.1992) 24

Brooks v. People, 975 P.2d 1105 (Colo.1999) 13,33,34,36,37,39

Daubert v. Merrell Dow Pharm., 509 U.S. 579 (1993) 19,25,35,37,39

Daubert v. Merrell Dow Pharm., 43 F.3d 1311 (9th.Cir1995)..... 26

DePaepe v. Gen. Motors Corp., 141 F.3d 715 (7th.Cir.1998)..... 20,38

Estate of Ford v. Eicher, 250 P.3d 262 (Colo.2011)..... 33

Gallegos v. Swift & Co., 237 F.R.D. 633 (D.Colo.2006)..... 20

Gates v. Memphis,
210 F.3d 371 (6th.Cir.2000), 2000 WL 377343*3-*4 23,44,47,50

Golob v. People, 108 P.3d 1006 (Colo.2008) 33

Hathaway v. Bazany, 507 F.3d 312 (5th.Cir.2007) 27,44,47,50

High v. U.S., 972 A.2d 829 (D.C.2009) 24

James v. People, 2018 CO 72, ¶19 20,21,50

Johnson v. Manitowoc Boom Trucks, 484 F.3d 426 (6th.Cir.2007) 26,35

Krause v. Mohave Cty., 459 F. Supp. 3d 1258 (D.Ariz.2020) 23,40,44,47

Krein v. W. Virginia State Police,
2015 WL 4527727, *3-*4 (S.D.W.Va.7/27/15) 24,44,47,50

Kumho Tire v. Carmichael, 526 U.S. 137 (1999) 18,27,33,39

Kutzly v. People, 2019 CO 55 13,18,21,33

Lawrence v. People, 2021 CO 28, ¶43 17

Michaelson v. Michaelson, 884 P.2d 695 (Colo.1994) 17

Newell Rubbermaid, Inc. v. Raymond Corp.,
676 F.3d 521 (6th.Cir.2012) 14,16,34,35,36,43

Oaks v. People, 150 Colo. 64, 371 P.2d 443 (Colo.1962) 32

Parvin v. State, 113 So.3d 1243 (Miss.2013) 44,45,47,50

Payne v. Tennessee, 501 U.S. 808 (1991) 20

People v. Baker, 2021 CO 29, ¶29 20

People v. Caldwell, 43 P.3d 663 (Colo.App.2001) 40

People v. Davis, 528 P.2d 251 (Colo.1974)..... 25

People v. Douglas, 2015 COA 155, ¶¶71-76..... 25

People v. Melendez, 102 P.3d 315 (Colo.2004)..... 30

People v. Ornelas-Licano, 2020 COA 62, ¶63 ..... *en passim*

People v. Ramirez, 155 P.3d 371 (Colo.2007) 19,27,28,33,38

People v. Rector, 248 P.3d 1196 (Colo.2011) 29

People v. Santana, 255 P.3d 1126 (Colo.2011) 49

People v. Shreck, 22 P.3d 68 (Colo.2001)..... *en passim*

People v. Stewart, 55 P.3d 107 (Colo.2002)..... 35,40

People v. Tidwell, 706 P.2d 438 (Colo.App.1985) 25

People v. Wilkerson, 114 P.3d 874 (Colo.2005) 26,30,32,34

People v. Williams, 790 P.2d 796 (Colo.1990) 21,24,39,47

Petriciolet v. State, 442 S.W.3d 643 (Tex.App.2014) 15,18,38,39

Rojas Mamani v. Sanchez Berzain,
2018 WL 2980371, *3-*5 (S.D.Fla.2/26/18) 24,47

Ruibal v. People, 2018 CO 93 ..... *en passim*

Salcedo v. People, 999 P.2d 833 (Colo.2000) 13,33,34

State v. Harris,
2017 WL 6205782, *7-*8 (Tenn.Crim.App.12/7/17)
26,32,44,46,47,50 50

State v. Walters, 551 A.2d 15 (R.I.1988) 44,46,47,50

Sullivan v. People, 2020 CO 58, 465 P.3d 25, n.5 17

Trujillo v. Vail Clinic, Inc., 2020 COA 126, ¶13 17,18

Tucker v. Riverside, Cty., 2018 WL 6017036, *11 (C.D.Cal.5/23/18)..... 24

U.S. v. Downing, 753 F.2d 1224 (3d.Cir.1985) 19,26,27,35,39

U.S. v. Frazier, 387 F.3d 1244 (11th.Cir.2004)..... 50

U.S. v. Medina–Copete, 757 F.3d 1092 (10th.Cir.2014)..... 50

U.S v. Montas, 41 F.3d 775 (1st.Cir.1994)..... 49

U.S. v. Rodriguez, 125 F. Supp. 3d 1216 (D.N.M.2015) 50

U.S. v. Scheffer, 523 U.S. 303 (1998) 40

Venalonzo v. People, 2017 CO 9, ¶21 28,35

TABLE OF STATUTES AND RULES

Colorado Appellate Rules
Rule 54(b) 17
Rule .....

Colorado Rules of Evidence
Rule 403 ..... *en passim*
Rule 702 ..... *en passim*

Federal Rules of Evidence
Rule 702 33

CONSTITUTIONAL AUTHORITIES

United States Constitution
Amendment V 21
Amendment XIV 21

Colorado Constitution
Article II, Section 25..... 21

OTHER AUTHORITIES

Nat'l Research Council, Strengthening Forensic Science in the United States: A Path Forward (2009) 27

President's Council of Advisors on Sci. & Tech., Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods (2016) 27

Saltzburg/Martin/Capra, *Federal Rules of Evidence Manual* 1229-37 (7th.ed.1998) 37

Weinstein & Berger, 3 *Weinstein's Evidence* ¶702[01] at 702-07 to 702-08 (1988) 21

ISSUE

Whether the Court of Appeals erred in adopting the Sixth Circuit's red flag checklist for discerning the reliability of scientific-based expert testimony and extending it to experience-based expert testimony to override the trial court's admission of an expert's opinion that the shapes of bullet holes through glass are indicative of the angle from where the shots were fired.

CASE STATEMENT

Larimer County charged Jose Ornelas with attempted first-degree murder-after deliberation, attempted second-degree murder, and attempted first-degree assault-extreme indifference, among other crimes. A jury convicted Ornelas of attempted second-degree murder, vehicular eluding, possession-defaced firearm, leaving an accident scene, reckless driving, and prohibited use of a weapon. (CF, p128-32, 198-200) The court sentenced Ornelas to 24 years in prison, including 20 years for attempted second-degree murder. (CF, p198-200)

Ornelas appealed the attempted murder conviction. The Court of Appeals reversed.

FACTS

Jose Ornelas fired a gun once while fleeing police. The bullet did not impact anything and was never recovered.

The critical issue at trial was whether Ornelas knowingly fired the gun while driving in an attempt to kill Detective Jacob Schneider. The gun's position at discharge was the critical fact.

Ornelas told police the gun discharged accidentally as he shifted gears on his manual transmission while holding the gun with the same hand. The prosecution argued he deliberately shot at Schneider.

Shooting Incident

On December 12, 2014, Fort Collins police organized a high-risk arrest warrant execution to apprehend Ornelas. (TR 11/3/15, p86-90) They had information from a paid informant who claimed Ornelas would rather "shoot it out" than go to prison. (*Id*., p43:9-20, 144:6-9)

The informant had numerous aliases and had provided the police with information for money 11 times. (*Id*., p47-51) He was a gang leader being prosecuted for false reporting, had been previously deported, and hoped providing information would help him at his deportation hearing scheduled the day after his testimony. (*Id*., p51-52, 56-59, 62-63); *People v. Ornelas-Licano*, 2020 COA 62, ¶63.

SWAT team members located Ornelas parked in his truck and surrounded him with five vehicles. (TR 11/3/15, p86-90, 119-25) The officers shined car lights on Ornelas, pointed AR-15 rifles and handguns at him, told him he was under arrest,

and ordered him to put his hands up. (*Id*., p95-97, 119-25, p148-49, 173-77) With multiple officers yelling commands, Ornelas cooperated by putting his hands on his head. (*Id*., p97-98, p173-77)

However, Ornelas became scared because the officers were still pointing guns and acting like "Rambo." (P.Ex.9A, 1:08:30-:45; P.Ex.9B, 4:10-5:30, 12:40-:55; TR 11/5/15, p94:11-15)[1] Ornelas put his finger to his forehead and said: "If you're going to shoot me, shoot me here." (P.Ex.9B, 8:20; TR 11/3/15, p99-100) He heard the officers doing something – likely preparing the "Sage Launcher," a weapon used to break windows and immobilize suspects – then backed the car out, maneuvered around a police vehicle by driving on the curb, and drove away pursued by officers. (P.Ex.9B, 8:15-:45; TR 11/3/15, p100-105, 152-53, 184-85; 11/5/15, p31:2-4, 63:4-6)

Ornelas arrived at an intersection and was met to his right by Schneider, driving a police SUV. (TR 11/3/15, p106-08) In a later interrogation, Ornelas explained what happened next. (P.Exs.9A, 9B)[2]

[1] Video exhibit cites reference playback time.

[2] The video's audio quality is compromised, but significant points are clear. Detective Heather Moore, the interrogator, provided explanatory testimony. (TR 11/5/15, p92-97, 109-10, 122-35)

While fleeing, Ornelas, scared by the show of force, was holding an old, "piece of shit" Desert Eagle .45-caliber handgun in the hand he used to shift gears on his manual transmission. (TR 11/5/15, p95-96, 109-10, 129-30; P.Ex.9A, 1:11:25-:55; P.Ex.3(f)) He put the gun in his hand because he wanted to feel like "Rambo," too. (P.Ex.9B, 5:20-:30, 11:00-:10)

Ornelas downshifted at the intersection, preparing to turn, and the gun accidentally discharged. (TR 11/5/15, p96:12-24; P.Ex.9A, 1:11:25-:55, 1:13:00-:15, 1:14:30-:50; 1:35:30-1:36:45; P.Ex.9B, 12:00-:30) Ornelas didn't know the gun's position when it fired – he could have shot his own head off. (P.Ex.9A, 1:35:30-:50; P.Ex.9B, 12:00-:30)

Ornelas said the stick shift knob caused him to accidentally pull the trigger. (P.Ex.9A, 1:35:30-1:36:45; TR 11/5/15, p97:13-17, 121-22) Photos showed the knob dislodged from the shifter. (TR 11/5/15, p123-24; P.Exs.4(d)-(g))

Ornelas repeatedly insisted the discharge was accidental. Moore testified she clearly understood Ornelas to say the discharge was accidental and caused by shifting gears. (TR 11/5/15, p97:13-17, 122-23) Moore testified there was no way to tell from Ornelas's statements where the gun was positioned at discharge. (*Id*., p123:8-17)

Ornelas had no intent to hurt Schneider. (P.Ex.9A, 1:13:00-:15; TR 11/5/15, p135:5-11) He told Moore, "Why would I want to shoot him, he wasn't even blocking me?" (TR 11/5/15, p135:5-11) Ornelas expressed remorse and took responsibility for fleeing and accidentally firing the gun. (P.Ex.9A, 1:13:00-:15, 1:16:40-:45, 1:36:30-:45; TR 11/5/15, p127:11-17, 130:5-13)

The bullet went through Ornelas's windshield and the glass blowout startled Schneider. (TR 11/6/15, p15:12-16, 29-30) Schneider thought the bullet hit his vehicle, but there was no evidence of bullet impact. (*Id*., p15:15-16, 19:12-19)

Schneider admitted at trial that his full-size Durango had not been hit. (*Id*., p28:5-9) Police never found the bullet.

Schneider admitted he only saw the glass blow out the windshield – he did not see Ornelas or Ornelas's gun. (*Id*., p12-24, 25:10-13) He did not see a muzzle flash. (*Id*., p19:1-3, 25:4-9) Schneider thought the bullet hole was higher on the windshield; it was actually on the windshield's lower portion. (*Id*., p29-30)

Schneider testified Ornelas's truck was going 10-20 mph and was 8-to-12 feet away when the shot discharged. (*Id*., p12-14) However, he had not measured. (*Id*., p24:14-20) Measurements of the intersection established the distance was more likely 29 feet. (TR 11/9/15, p8-15; D.Exs.I, J)

Gunshot particle residue was on the dash and radio area of Ornelas's truck, between the stick shift and windshield. (D.Ex.E; TR 11/3/15, p206-07; 11/4/15, p11-12, 134-35) The lead vapor pattern on the windshield was wider than it was tall, a not wholly circular pattern, unlike unblocked test shots the police performed with no barrier that resulted in circular lead vapor patterns. (TR 11/4/15, p103-04, 134-35, 172:1-17; P.Exs.7(x)-(z))

At trial, both parties presented experts analyzing "terminal ballistics" evidence, including the pattern created on Ornelas's windshield by the bullet and hypothetical angles from which the bullet may have exited. (*Id*., p81-140; P.Exs.8A-B; 11/9/15, p19-73)

Detective Dan Gilliam testified for the prosecution. He performed a one-time shooting "re-creation," and concluded Ornelas fired from a "natural shooting position." (TR 11/4/15, p123:12-19, 128-29, 136:8-14) Jeff Saviano, a defense ballistics expert and law enforcement criminalist, testified the incident included so many variables that it was impossible to opine on the gun's position at discharge. (TR 11/9/15, p25-27, 32-35, 48-49)

After the discharge, Ornelas accidentally ran into another civilian's vehicle. (TR 11/3/15, p111-12, 162-63, 11/5/15, p21-22, 103-06; P.Ex.9A, 1:16:20-:45) The

accident bruised the other driver, but did not seriously injure her. (TR 11/5/15, p106-07)

Ornelas fled on foot and slept in a storage shed overnight. (P.Ex.9A, 1:16:55-1:17:25, 1:36:50-:55; TR 11/5/15, p94-95, 134:9-19) Police arrested him without incident the next day. (TR 11/3/15, p116-17; 11/5/15, p34-36)

Shreck[3] **Proceedings**

On the trial's second day, Ornelas objected to Gilliam testifying due to lack of qualifications and scientific reliability. (TR 11/3/15, p226-27, p230-33, 242-43; 11/4/15, p51-52) Ornelas objected to eliciting any opinion on the gun's position when it fired, based on reliability and lack of pretrial disclosures. (*Id*., p236:17-24; 11/4/15, p54-55) And Ornelas argued the re-creation lacked relevance and was unreliable and unhelpful to the jury. (TR 11/3/15, p241-43)

The court held a mid-trial *Shreck* hearing. Gilliam testified:

- There are three ballistics fields: internal, external, and terminal ballistics. Terminal ballistics concerns "the impact and how that bullet reacts into whatever target it strikes." (p57:16-21)[4]

- Gilliam's opinion was based on "terminal ballistics." (p65:13-18)

- Terminal ballistics is "[b]ased on physics." Gilliam has no training or education in physics. (p58-59, 66:4-9)

[3] *People v. Shreck*, 22 P.3d 68 (Colo.2001).
[4] Bulletpoint page cites are to 11/4/15.

- Gilliam has no specific training in terminal ballistics. (p66:1:3) He testified: "I don't know that there is actually any specific courses out there in terminal ballistics. Most of the top guys in that field are physicists, and that's what they do." (p65:23-25)

- Gilliam's training and experience includes crime scene investigation of what bullets do upon impact, including shooting through surfaces to see the terminal effect on the bullet. (p58:13-19)

- Gilliam has shot through glass and windshields "many times…to determine what bullets reacted best through those barriers." (p59:7-18)

- Gilliam took one 40-hour class where he shot glass. The class focused on "the effects of glass on the bullet, what it would do impacting at different angles, how to change the trajectory or the flight path of that bullet once the bullet went through the glass…." It focused on what happened to the bullet, not bullet hole shapes in glass. (p59-60, 67:3-21)

- His observations of shapes of bullet holes in glass were based on anecdotal experience, not specialized training. (p67-68)

- Gilliam performed a "reconstruction,"[5] in which he purchased two new windshields and shot Ornelas's gun through each, using different angles, "one of them that we thought was a possibility and the other that was what I was told was the story [Ornelas] had given for how that bullet or how that defect got in the glass." (p60:8-22) He compared the two test windshields to Ornelas's windshield. (p63-64)

- Each test was a single shot. Gilliam did not repeat the test shots or shoot additional windshields. (p71:7-13)

[5] During trial, Gilliam and the prosecutor referred to a "re-creation." (TR 11/4/15, p109-16)

- Gilliam had never conducted a test "shooting through laminated glass in an attempt to re-create a bullet trajectory." This was his first time. (p71:20-25)

- Gilliam said he was "sure there's an error rate" for the test, but he did not know it. (p71:1-5)

- Gilliam admitted he did not document in his pretrial report his opinion that Ornelas fired from shoulder height. (p72:3-10)

The trial court found that ballistics constituted reliable scientific evidence. (TR 11/4/15, p74:8-11) The court found Gilliam qualified to opine on "firing through glass and so forth" based on general training and one 40-hour class. (*Id*., p74:15-23) And the court found, incorrectly, Ornelas had not challenged whether Gilliam's proposed testimony was helpful to the jury. (*Id*., p74:12-14)

Ornelas preserved his objections under both Due Process Clauses. (*Id*., p79:14-18)

Expert Trial Testimony[6]

The prosecution submitted Gilliam as a "ballistics, firearms, and crime scene reconstruction" expert. (p89:8-10) Under voir dire, Gilliam testified:

- He has no training in terminal ballistics or physics. (p90:5-14)

- He has never participated in a peer-reviewed study regarding a bullet's flight through a windshield. (p90:22-25)

[6] Unless noted, this section's page cites are to 11/4/15.

- He could not recall reviewing any journal articles about terminal ballistics and a bullet's flight through a windshield. (p91:1-3)

- His one training session was devoted to "teaching an individual how to shoot through glass and what happens to a bullet when it hits glass," as well as a bullet's flight path after going through glass for its terminal impact on a target. No part of the training involved studying bullet holes to determine an angle of impact. (p91-92)

- He never published any ballistics articles. (p92:7-9)

- He had not been previously qualified to testify about terminal ballistics. (p92:4-6)

Ornelas objected to Gilliam's qualifications. (p92:10-12) The trial court overruled. (p92:13-21)

Gilliam testified that the shape of the bullet hole in Ornelas's windshield showed an accidental discharge from the stick shift was not possible. (p95-96) He testified the elliptical hole indicated the bullet impacted the windshield glass at an angle, whereas a circular hole would indicate a more orthogonal impact. (p99-100) He said a shot fired from shoulder height would produce an elliptical hole, like the one in Ornelas's windshield. (p101:11-20)

Gilliam wanted to test his already-formulated theory of the gun's position. (p110:20-22) He purchased two new windshields and built a wooden frame for them. (p109-10) He set the test windshields to two different angles "that represented the gun being close to the stick shift level and then another shot that was to represent the

gun being held at shoulder height and basically the arm being horizontal to the ground." (p110:9-13)

He fired Ornelas's gun twice, the first shot based on Ornelas's statements and the second shot holding the gun perpendicular to the ground. (p111-13) Thus, the re-creation involved a mere two data points. *Ornelas-Licano*, ¶¶31, 58.

The experiment was not repeated or re-tested. (p137:9-14) This was the first time Gilliam had ever conducted this test. (p138:1-5)

Gilliam had not spoken to Ornelas or viewed the interrogation video. (p125:16-21) He did not know Ornelas's height, arm length, or body size, did not know how Ornelas sat in the driver's seat, and did not incorporate these factors into his concept of "a natural shooting position." (p128-29)

Gilliam based the location of the "re-created" stick shift shot on the average of two measurements from the stick shift's farthest left and farthest right forward motion positions. (p131-32) He did not try to approximate the distance between the gun and windshield as there was no way to approximate a good measurement. (p136:5-14)

Photographs and two video exhibits were admitted documenting the "re-creation." (p114-123; P.Exs.7(a)-(z), 8(a)-(b))

After discussing the "re-creation," Gilliam opined that the gunshot originated "closer to the natural shooting position," not the stick shift, in which "the barrel of the gun has to be almost on a horizontal plane, even with the bullet hole." (p123:12-19)

Saviano testified five days later. He was qualified in "external and terminal ballistics as well as shooting reconstruction." (TR 11/9/15, p24-25) He was in law enforcement for 23 years and had previously testified as an external and terminal ballistics expert – in which he has specific education and training – for prosecutors and defendants. (*Id*., p19-24)

Saviano specializes is shooting incident reconstruction. (*Id*., p20:19-22) He teaches "shooting incident investigation" at Pikes Peak Police Academy. (*Id*., p22:23-25)

Saviano testified "too many unknowns and too many variables in this particular case" prevented a conclusion about the gun's position at discharge. (TR 11/9/15, p25-26, 32:6-10, 35:10-21) Ideally, you have two impacts to determine trajectory and flight path angle – the first impact and the terminal impact. (*Id*., p26:11-16)

Those impacts ideally occur within stationary objects. (*Id*., p26:16-20) Even in ideal situations, the industry standard is a five-degree margin of error for trajectory measurement. (*Id*., p26-27)

Saviano took independent measurements of the potential shooting angles. (*Id*., p27-29) His results were significantly different from Gilliam's. (*Id*.; D.Ex.L)

The Court of Appeals' Opinion

Ornelas raised two claims on appeal. The Court of Appeals rejected Ornelas's equal protection challenge, but reversed on Ornelas's claim that the trial court erroneously admitted Gilliam's testimony.

Judge Welling, joined by Justice Martinez, determined the court abused its discretion "because [Gilliam's] experience did not qualify him to opine on the relationship between the angle of impact and shape of the bullet hole, and there is nothing in the record beyond the officer's own assertions to show that someone can determine from the shape of a bullet hole in a windshield where the bullet came from." *Ornelas-Licano*, ¶2.

The court based its decision on CRE 702 and 403, *Kutzly v. People*, 2019 CO 55, and *Ruibal v. People*, 2018 CO 93. *Ornelas-Licano*, ¶¶43-44, 55. *Brooks v. People*, 975 P.2d 1105 (Colo.1999) and *Salcedo v. People*, 999 P.2d 833 (Colo.2000) also supported the court's holding. *Ornelas-Licano*, ¶¶52-54.

Applying this well-established law, the court found "the record is *devoid of any showing* that the shape of a bullet hole in a windshield is demonstrative or indicative of the angle at which the bullet struck the glass." *Id*., ¶46 (original emphasis). "The prosecutor presented no evidence, either through Inspector Gilliam or otherwise, that anyone other than Inspector Gilliam himself had previously analyzed the relationship between the shape of a bullet hole in laminated glass and the angle of impact." *Id*., ¶47.

Ultimately, the court's holding was grounded in lack of record support showing Gilliam's opinion testimony was reliable and because this Court "has consistently required more than the expert's own assertions to support the required finding that the expert's underlying theory is reliable." *Id*., ¶56.

The majority also observed in dicta that Gilliam's testimony presented several "red flags" which caution against certifying an expert. *Id*., ¶¶57-58 (citing *Newell Rubbermaid, Inc. v. Raymond Corp.*, 676 F.3d 521, 527 (6th.Cir.2012)).

Judge Berger – calling it a "close question" – dissented. *Id*., ¶68 (Berger, J., concurring, dissenting in part). Judge Berger noted Gilliam "had no training or education in analyzing bullet holes to determine a bullet's flight path or reconstructing shooting scenes generally,…presented no scientific literature or other evidence supporting the reliability of his bullet hole analysis,…had no training or

education related to conducting this specific kind of experiment,…had never done this before, and he cited no scientific literature or other support for this methodology." *Id*., ¶¶74, 99.

Nonetheless, Judge Berger took issue with the majority's conclusion "on this evidentiary record," finding instead that Gilliam's *Shreck* hearing testimony was sufficient to meet CRE 702's reliability requirements. *Id*., ¶¶76-80, 83. He did not address the majority's harm analysis.

ARGUMENT SUMMARY

"When a witness's methodology and conclusions cannot be validated or have been otherwise inadequately tested, the proposed testimony is characterized as junk science." *Petriciolet v. State*, 442 S.W.3d 643, 653 (Tex.App.2014) (cleaned up).

Gilliam's testimony fits that definition.

Gilliam, by his own admission, was untrained and uneducated in the scientific methodology in which he offered testimony. He created a technique for this case and then applied that technique exactly once, producing two data points.

From those two untested data points, Gilliam opined that Ornelas fired his gun from "a natural shooting position" – the ultimate issue in the case.

Gilliam was unqualified, his opinion was unreliable, and his testimony was unhelpful to the jury and far more prejudicial than probative. The evidence fails CRE 702 and 403.

The State presents only straw critiques of the Court of Appeals' opinion. The State falsely posits that the opinion created a new restrictive checklist for expert testimony and that it will bar the courtroom door to future experience-based testimony.

Gilliam's testimony was science-based and the Court of Appeals created no such restrictions.

This Court should dismiss certiorari as improvidently granted. Alternatively, it should affirm the Court of Appeals.

ARGUMENT

I. Certiorari was Improvidently Granted.

The State's complaint is based on two false premises.

First, it claims two paragraphs at the end of the opinion's error analysis discussing *Newell* created a restrictive test for expert testimony. But the panel cited *Newell* as persuasive – not necessary – support for its holding. *Ornelas-Licano*, ¶¶57-58. In the preceding paragraph, the court unambiguously stated the prosecution

had not made the showing necessary to support a finding that the expert's underlying theory was reliable ***under this Court's precedent***. *Ornelas-Licano*, ¶56.

The court's *Newell* discussion is dicta. *E.g.*, *Sullivan v. People*, 2020 CO 58, 465 P.3d 25, n.5.

Second, the State incorrectly argues Gilliam's opinion was experience-based. The proffered expertise and methodology, the prosecution's representations, Gilliam's own testimony, and prior caselaw all illustrate the evidence was science-based. *See* Sections IV, V.

This Court should dismiss this case as improvidently granted. C.A.R. 54(b); *Michaelson v. Michaelson*, 884 P.2d 695, 703 (Colo.1994) (dismissal appropriate when "issue on which [this Court] granted certiorari is not properly presented").

II. Trial Courts Must Serve as Gatekeepers to Prevent Admission of Junk Science.

The Innocence Project reports that 43 percent of the project's 375 DNA exonerations since 1989 "involved misapplication of forensic science." *See* https://www.innocenceproject.org/dna-exonerations-in-the-united-states/ (viewed 8/7/21).

"[T]rial courts have an obligation to serve as gatekeepers regarding the propriety of expert testimony." *Lawrence v. People*, 2021 CO 28, ¶43 (citing *Trujillo v. Vail Clinic, Inc.*, 2020 COA 126, ¶13). "The trial court's inquiry is focused on

excluding junk science," while recognizing two experts may have conflicting opinions. *Trujillo*, ¶13; *accord Petriciolet*.

CRE 702 and CRE 403 govern the admissibility of all expert testimony. *Ornelas-Licano*, ¶43 (citing *Kutzly*, ¶10; *Ruibal*, ¶12). If "scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise." CRE 702.

Expert testimony must be reliable and relevant, and its probative value must not be substantially outweighed by CRE 403's considerations. *Kutzly*, ¶10; *Ornelas-Licano*, ¶43. "Determining if expert testimony is reasonably reliable requires considering the totality of the circumstances surrounding the proposed expert testimony and is not contingent on any specific list of factors." *Kutzly*, ¶12; *Ornelas-Licano*, ¶43. This includes consideration of "the nature of the issue, the expert's particular expertise, and the subject of his testimony." *Shreck*, 78 (quoting *Kumho Tire v. Carmichael*, 526 U.S. 137, 150 (1999)) (cleaned up).

Shreck rejected required factors in the reliability analysis. *Id*., 77. *Shreck* approved, however, "the wide range of issues other courts have considered when making a Rule 702 determination." *Id*. Such factors include:

> (1) whether the technique can and has been tested;
>
> (2) whether the theory or technique has been subjected to peer review and publication;
>
> (3) the scientific technique's known or potential rate of error, and the existence and maintenance of standards controlling the technique's operation; and
>
> (4) whether the technique has been generally accepted.

Id. (citing *Daubert v. Merrell Dow Pharm.,* 509 U.S. 579, 593-94 (1993) ("*Daubert I*")). Additional approved factors include:

> (5) the relationship of the proffered technique to more established modes of scientific analysis;
>
> (6) the existence of specialized literature dealing with the technique;
>
> (7) the non-judicial uses to which the technique are put;
>
> (8) the frequency and type of error generated by the technique; and
>
> (9) whether such evidence has been offered in previous cases to support or dispute the merits of a particular scientific procedure.

Id., 77–78 (citing *U.S. v. Downing*, 753 F.2d 1224, 1238-39 (3d.Cir.1985)).

Ultimately, expert testimony is reliable when grounded in scientific methods and procedures rather than subjective beliefs or unsupported speculation. *People v. Ramirez,* 155 P.3d 371, 378 (Colo.2007).

Courts may reject expert testimony connected to existing data by bare assertions resting on the expert's authority – such testimony carries more weight with jurors than warranted. *Id*., 379 (citing *Gallegos v. Swift & Co.*, 237 F.R.D. 633, 639 (D.Colo.2006) and *DePaepe v. Gen. Motors Corp.*, 141 F.3d 715, 720 (7th.Cir.1998)); *Ornelas-Licano*, ¶¶51, 56.

III. Gilliam's Testimony Failed CRE 702's Gatekeeping Guardrails.

A. Standards.

The State concedes Ornelas preserved his challenges to Gilliam's testimony. OB at 16; *Ornelas-Licano*, ¶41.

This Court reviews admission of expert testimony for abuse of discretion. *People v. Baker*, 2021 CO 29, ¶29. A trial court abuses its discretion when its decision is manifestly arbitrary, unreasonable, or unfair – or when it misapplies the law. *Id*.

This Court reviews non-constitutional errors for harmlessness, under which the State must demonstrate the error did not substantially influence the verdict or affect the trial's fairness. *Id*., ¶38; *James v. People*, 2018 CO 72, ¶19.

However, improper admission of evidence may violate due process if the evidence is "so unduly prejudicial that it renders the trial fundamentally unfair." *Bloom v. People*, 185 P.3d 797, 805-06 (Colo.2008) (quoting *Payne v. Tennessee*,

501 U.S. 808, 809 (1991)) (cleaned up); *see* U.S. Const. amends. V, XIV; Colo. Const. art II, §25. The test is whether, under the "totality of the circumstances, [a defendant's] due process rights were violated." *Bloom*, 805-06. And the State "must prove beyond a reasonable doubt the absence of any reasonable possibility that the error might have contributed to the conviction." *James*, ¶19.

B. Gilliam was Unqualified to Provide His Opinion.

"[A] trial court's reliability determination should consider whether the witness is qualified as an expert regarding the proposed testimony." *Kutzly*, ¶12; *Ornelas-Licano*, ¶43. A witness may be an expert generally, but unqualified to testify in a specific area of expertise. *E.g.*, *People v. Williams*, 790 P.2d 796 (Colo.1990).

That was the case here.

The crucial question is: "On *this subject* can a jury from *this person* receive appreciable help?" *Id.*, 798 (quoting Weinstein & Berger, 3 *Weinstein's Evidence* ¶702[01] at 702-07 to 702-08 (1988)) (*Williams'* emphases; cleaned up).

Here, Gilliam was a "criminalist" and "firearm toolmark examination" specialist. (p82-83, 85:1-3)[7] He testified "every once in a while [he did] some ballistics, but that's kind of a science unto itself." (p83:8-9) He was unqualified to

[7] Unless noted, record cites in III. are to 11/4/15.

testify about "terminal ballistics," which he stated was his testimony's primary focus. (p57-58, 65:13-18, 90:2-4)

Terminal ballistics is based on physics and aerodynamics. (p58:20-22, 83-84, 90:8-11) Gilliam lacks training or education in either. (p58-59, 66:4-9, 90:12-14)

Gilliam never published ballistics articles or participated in a study regarding bullet flight through a windshield. (p90:22-25, 92:7-9) He could not cite research on terminal ballistics or bullet flight through a windshield. (p91:1-3) He did not cite professional certifications in ballistics or terminal ballistics, only membership in sniper and bloodstain associations. (p84:18-20)

Even Gilliam's lone training session did not examine bullet holes' shape in glass as related to angle of impact, but rather focused on what happened ***to the bullet*** post-impact. (p67:8-21, 84:13-16, 91-92) Likewise, Gilliam's professional experience focused on effects ***on the bullet*** in shooting materials and targets. (p58:13-19, 59:14-18, 93:8-24)

"[A]ll of [Gilliam's] experience was in the context of determining the effect the windshield had on the bullet and its trajectory after it passed through the glass, not to analyze the relationship between the angle of impact and the shape of the bullet hole." *Ornelas-Licano*, ¶48.

Thus, Gilliam's opinions were not based on specialized training or experience. (p67-68) Critically, Gilliam never previously conducted a test "shooting through laminated glass in an attempt to re-create a bullet trajectory." (p71:20-25)

This was his first time.

For good reason, then, Gilliam had never previously been qualified to testify as a terminal ballistics expert. (TR 11/4/15, p92:4-6) He was unqualified.[8]

The trial court failed to draw the required distinction between general firearms expertise and specific ballistics and bullet trajectory analysis expertise. Numerous cases from sister jurisdictions have done so – and excluded the unqualified, general practitioners. *Gates v. Memphis*, 210 F.3d 371 (6th.Cir.2000), 2000 WL 377343*3-*4 (unpublished)[9] (criminalist with 19 years' experience including 12 years in firearm tool mark unit unqualified to testify about bullet trajectory analysis where he lacked training in trajectory analysis or physics); *Krause v. Mohave Cty.*, 459 F.

[8] The dissent observed Gilliam ""had no training or education in analyzing bullet holes to determine a bullet's flight path or reconstructing shooting scenes…." *Ornelas-Licano*, ¶74. Further, Gilliam "had no training or education related to conducting this specific kind of experiment." *Id*., ¶99. "He had never done this before," and cited no scientific literature or other support for the reliability of his analysis or his re-creation methodology. *Id*., ¶¶74, 99.

Even the trial prosecutor conceded that whether Gilliam was specifically qualified was a "close[] question." (TR 11/4/15, p53:13-14)

[9] The Sixth Circuit permits citation to unpublished dispositions. 6 Cir. R. 32. Opinion attached as Appendix A.

Supp. 3d 1258, 1266 (D.Ariz.2020) (officer's decades of experience as competitive shooter and gunsmith "cannot replace qualifications in ballistic forensics and do not qualify him to opine on the highly technical area of bullet path reconstruction or ballistics"); *Tucker v. Riverside, Cty.*, 2018 WL 6017036, *11 (C.D.Cal.5/23/18) (ballistics expert unqualified to testify about bullet trajectories); *Rojas Mamani v. Sanchez Berzain*, 2018 WL 2980371, *3-*5 (S.D.Fla.2/26/18) (military sniper and SWAT firearms instructor with extensive shooting investigation experience unqualified to opine "on where each bullet that struck a decedent was fired from"); *Krein v. W. Virginia State Police*, 2015 WL 4527727, *3-*4 (S.D.W.Va.7/27/15) (excluding trajectory analysis testimony of officer with 23 years' police experience, extensive training, and prior testimony, where officer admitted he was not an expert in "bullet trajectory, firearms, or ballistics"); *High v. U.S.*, 972 A.2d 829 (D.C.2009) (bullet bunter-marks' expert properly excluded where witness lacked experience with firearms, had no published articles regarding his experiments, and had not previously testified about bunter-marks); *Bowden v. State*, 610 So. 2d 1256 (Ala.Crim.App.1992) (firearm repair expert properly excluded because witness lacked proficiency, training, or experience in shotgun shell identification).

The trial court thereby abused its discretion in permitting Gilliam's testimony. *Williams* (witness unqualified to testify about firearms identification, despite doing

so 10 times previously, where witness had only taken one course on subject, expertise was in different subject area than relevant one, expert did not belong to professional organization, and his experience was "non-research" work); *People v. Davis*, 528 P.2d 251, 253 (Colo.1974) (witness properly excluded where he admitted he lacked expertise); *People v. Douglas*, 2015 COA 155, ¶¶71-76 (expert properly excluded where he was "self-taught" but failed to explain experience); *People v. Tidwell*, 706 P.2d 438, 439 (Colo.App.1985) (witness properly excluded where she was not certified by professional organization, actual experience was undefined, and she had not been previously qualified).

C. Gilliam's Testimony Did Not Pass CRE 702's Reliability Test.

Shreck did not require pre-determined factors in CRE 702's reliability analysis, but did enumerate nine potentially pertinent factors. 22 P.3d at 77. Gilliam's testimony did not satisfy ***any*** *Shreck*-approved factors. *Ornelas-Licano*, ¶¶46-56.

Specifically, Gilliam's analysis of the shape of the bullet holes and his "re-creation" had not been tested, generally accepted, or subjected to peer review and publication. *Shreck*, 77 (citing *Daubert I*, 593-94); *Ornelas-Licano*, ¶¶46-50. Nor did Gilliam supply an error rate or controlling standards. *Id*. He was sure an error rate existed, but he did not know it. (p71:1-5)

Gilliam did not explain how his technique reflected established modes of scientific analysis, cite supporting literature, or identify any non-judicial uses for his "re-creation." *Shreck*, 77 (citing *Downing*, 1238-39).

Indeed, Gilliam's technique was created for this case. (p95-96, 125:5-21, 133-34, 138:1-5); *Ornelas-Licano*, ¶58; *see Johnson v. Manitowoc Boom Trucks*, 484 F.3d 426, 434 (6th.Cir.2007) (expert testimony prepared solely for purposes of litigation viewed with caution); *Daubert v. Merrell Dow Pharm.,* 43 F.3d 1311, 1317 (9th.Cir1995) ("*Daubert II*") ("very significant" whether expert proposes to testify about matters derived from independent research or about opinions developed for purpose of testifying); *State v. Harris*, 2017 WL 6205782, *7-*8 (Tenn.Crim.App.12/7/17) (unpublished)[10] (reenactment of gunshot and shooting angles from driver's seat of moving vehicle inadmissible where model prepared solely for litigation).

Moreover, 50% of Gilliam's methodology was based on his supposition about "a natural shooting position" while the other 50% was based on Ornelas's statements. *People v. Wilkerson*, 114 P.3d 874, 876 (Colo.2005) (expert testimony inadmissible where dependent on defendant's statements for reliability).

[10] Tennessee's Court of Criminal Appeals permits citation to unpublished dispositions. TN R CR A CT Rule 19(4). Opinion attached as Appendix B.

Such evidence had not been offered previously. *See Shreck*, 77-78 (citing *Downing*, 1239). And Gilliam expressly disclaimed knowledge of the frequency and type of error generated by the technique. *See id*.; (p71:1-5).

Gilliam's testimony was grounded in his purported authority as a "criminalist" and "firearm toolmark examination," not scientific methods or procedures. (p82-83, 85:1-3); *Ramirez*, 379; *see Hathaway v. Bazany*, 507 F.3d 312 (5th.Cir.2007) (testimony properly excluded where not based upon training or scientific methodology suited to reconstruction of parties' locations based on bullet trajectory or shell casing location, but only witness's 20 years' police experience in firearms and unsupported assumptions).

Gilliam's methodology lacked support other than his "bare assertions." *Ramirez*, 379; *Ornelas-Licano*, ¶¶2, 51, 56. That was insufficient. *See Kumho Tire* (testimony properly excluded where there was no evidence other experts used analyst's particular approach and analyst's testimony cast doubt upon reliability of theory and methodology); *Ramirez*, 379; *Hathaway*.[11]

[11] Two recent comprehensive reports on forensic science in criminal courts did not mention terminal ballistics. *See* President's Council of Advisors on Sci. & Tech., Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods (2016), (https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/pcast_forensic_science_report_final.pdf; Nat'l Research Council, Strengthening

Further, Gilliam's testimony illustrated "terminal ballistics" does not produce reliable information on a projectile's impression on glass based on firing angle. He explained "terminal ballistics…is the impact and ***how that bullet reacts*** into whatever target it strikes." (p57:19-21, emphasis added); *see generally* https://en.wikipedia.org/wiki/Terminal_ballistics (viewed 9/7/21). Gilliam's own experience focused on ***how bullets react*** when impacting barriers, not the effect on the barrier. (p59:7-18, p67:8-21)

Finally, while no Colorado court has admitted testimony and "re-creations" akin to Gilliam's, several sister jurisdictions have found similar testimony inadmissible. Section V.; *Ruibal*, ¶¶15-16 (surveying sister jurisdictions rejecting expert's "overkill" theory); *see Venalonzo v. People*, 2017 CO 9, ¶21 (other jurisdictions' cases "informative" in addressing line between lay and expert testimony).

The Court of Appeals correctly found Gilliam's "bare assertions" insufficient. *Ramirez*, 379; *Ornelas-Licano*, ¶¶51, 56.

Forensic Science in the United States: A Path Forward (2009); https://www.ncjrs.gov/pdffiles1/nij/grants/228091.pdf.

D. The Trial Court Failed to Make Sufficient Findings.

This Court recently re-emphasized that specific, express, on-the-record findings are mandatory. *Ruibal*, ¶¶13-14 (trial courts must issue specific CRE 702 and 403 findings; without findings or a record "virtually requiring" admission, court abuses discretion in admitting expert testimony).

Here, as to reliability, the trial court merely found: "[B]allistics, as described by the witness, the three aspects of it, is not unreliable scientific evidence." (p74:8-11)

It found Gilliam qualified based on "a lot of experience. He has some training that is, ***if not precisely on this issue***, certainly related to this issue, 40 hours of training that included some firing through glass and so forth." (p74:20-23, emphasis added)

This was insufficient. *Ruibal*, ¶15 (general finding that expert testimony provided context insufficient where court made no specific findings on reliability and record devoid of support); *Shreck*, 79. And the record fails to support admission. *Id*.; *Ornelas-Licano*, ¶¶2, 46, 59.

No past Colorado decisions support the court's ruling. *Ruibal*, ¶13 (citing *People v. Rector*, 248 P.3d 1196, 1201 (Colo.2011)). And jurisdictions addressing similar expertise have excluded testimony or found its admission reversible error.

The trial court abused its discretion. *Ruibal*, ¶¶13-17.

E. Gilliam's Testimony was Not Helpful to the Jury and Failed CRE 403's Balancing Test.

The trial court ruled Ornelas failed to argue Gilliam's testimony was unhelpful. (p74:12-14) But Ornelas argued the testimony and photographs of the re-creation were irrelevant, more prejudicial than probative, and Gilliam's testimony did not reliably inform jurors about the gun's position at discharge. (TR 11/3/15, p241-43)

This sufficiently raised the issue. *People v. Melendez*, 102 P.3d 315, 322 (Colo.2004) ("talismanic language" not required).

Moreover, CRE 702 ***requires*** the court to determine relevance, weigh CRE 403, and to issue specific findings. *Shreck*, 79. Accordingly, the court erred. *Id*.

And Gilliam's testimony was unhelpful.

In *Wilkerson*, this Court upheld exclusion of expert testimony that the defendant probably shot the victim accidentally, finding the record lacked empirical methodological justification. The witness was qualified as an expert in ergonomics, had presented numerous papers concerning accidental shootings, and had studied analyses of accidental police shootings. 114 P.3d at 875-76.

The expert's opinion, however, was dependent on the truthfulness of the defendant's statements to police. *Id.*, 876. Relying on this and the lack of literature

or knowledge concerning measurement standards or error rates, the trial court excluded the testimony. *Id.*

This Court affirmed, finding the expert's opinion lacked scientific support to demonstrate reliability. *Id.*, 877. Further, the testimony presented a risk under CRE 403 of improper vouching. *Id.*

Similar concerns arose here. The relevance of the "re-creation" and Gilliam's testimony required numerous assumptions, most prominently assumptions about Ornelas's statements and Gilliam's assumptions about a "natural shooting position." (p111-13, 123:12-19, 125:5-21, 128-29, 133-34, 136:5-20)

These were not the only possibilities.

Ornelas may have fired knowingly, but purposely away from Schneider's vehicle – not a substantial step towards causing death. (*See* D.Ex.L) Or he may have fired somewhere between the two re-creation angles and fired the shot well over or away from Schneider's vehicle. (*See* TR 11/10/15, p53-54) Or any number of other possible positions and angles, under which jurors could have found reasonable doubt requiring acquittal on attempted murder. (TR 11/3/15, p30-31; 11/9/15, p27-29; D.Ex.L; CF, p177-89; *see* 11/10/15, p73-74, defense closing)

Gilliam's testimony excluded all but two possible positions. And his conclusion supported the State's theory, "even though there is nothing in the record

to show that anything but randomness accounted for any similarity between the actual bullet hole and the hole created by the shoulder-height test shot." *Ornelas-Licano*, ¶59.

Thus, Gilliam's evidence was irrelevant, unhelpful to jurors, and unfairly prejudicial. *Id*.; *see Shreck*, 77-79.

Moreover, Gilliam's re-creation was designed specifically for this case. *Ornelas-Licano*, ¶58; *Harris*, *7 (bullet trajectory "reenactment" excluded where prepared for litigation). There was no underlying reliable methodology. *See Wilkerson*, 876-77 ("[I]f the results of a scientific test or comparison are not self-evident, the test itself lacks relevance unless there is also reliable expert interpretation of its results.").

Finally, the video re-creations created a danger of unfair prejudice far outweighing any probative value. CRE 403. The re-creations dangerously misrepresented the actual evidence. *See Oaks v. People*, 150 Colo. 64, 68, 371 P.2d 443, 446-47 (Colo.1962) (jury misled by inadmissible evidence is no longer impartial).

The videos show gunshots through windshield glass at close range coming towards the viewer. (P.Exs.8(a)-(b)) There was no need to present this prejudicial perspective to jurors in a case with no bullet impact. CRE 403.

IV. The State's Challenges to the Court of Appeals' Opinion Fail.

The State's critique of the Court of Appeals relies on paragraphs 57-58 of the opinion. Those paragraphs were dicta.

The State's complaints misread the opinion. Ultimately, the State does not address the fundamental unreliability of Gilliam's testimony.

A. The Court Analyzed Gilliam's Testimony Under Well-Established Colorado Law. It Correctly Decided the Record Lacked Sufficient Support for Reliability.

To reach its holding, the Court of Appeals discussed:

- CRE 702 and 403. *Ornelas-Licano*, ¶¶42-43, 52-53, 59.
- *Kutzly*. *Id*., ¶¶42-43.
- *Ruibal*. *Id*., ¶¶42-44, 55.
- *Shreck*. *Id*., ¶32.
- *Golob v. People*, 108 P.3d 1006 (Colo.2008). *Id*., ¶42.
- *Ramirez*. *Id*., ¶¶42, 47, 51.
- *Estate of Ford v. Eicher*, 250 P.3d 262 (Colo.2011). *Id*., ¶47.
- *Brooks*. *Id*., ¶¶52-53.
- *Salcedo*. *Id*., ¶54.

The court observed reliability is the touchstone of CRE and FRE 702 and cited blackletter federal authorities such as *McCormick on Evidence* and *Kumho Tire*.

Ornelas-Licano, ¶¶44, 46, 51. And the court expressly limited its findings to this case's specific circumstances and record deficiencies. *Id*., ¶¶2, 46-47, 50-51, 53, 56, 59.

Notably, the court discussed in detail how *Brooks*, *Salcedo*, and *Ruibal* supported its analysis. *Brooks* and *Salcedo* are two of this Court's paradigmatic decisions addressing experience-based expertise. *Ruibal* is this Court's most recent decision addressing the requirement of supporting trial court findings.

Only then, as "further support," did the Court of Appeals note Gilliam's evidence failed the Sixth Circuit's six "red flag" factors. *Id*., ¶¶56-57. The court then observed that *Wilkerson* and CRE 403 also supported its holding and would bar admission of Gilliam's testimony if presented as lay opinion. *Id*., ¶59.

The law and reasoning on which the majority relied was well-established and sound. *Id*., ¶¶42-56, 59.

B. The Court of Appeals' *Newell* Discussion Did Not Impose New Requirements for Expert Testimony.

The court did ***not*** adopt a restrictive checklist for discerning expert reliability.

In the second-and-third-to-last paragraphs of its error analysis, the court noted – ***after*** holding Gilliam's testimony failed to meet Colorado reliability standards – "[t]he Sixth Circuit has developed a useful framework for evaluating the reliability of an expert's opinion." *Ornelas-Licano*, ¶57. These considerations arose from a

long line of Sixth Circuit cases. *Newell*, 527 (citing *Best v. Lowe's Home Ctrs.*, 563 F.3d 171, 177 (6th.Cir.2009), for five factors; and *Johnson*, 484 F.3d at 434, for sixth).

Newell did not create a restrictive checklist: "[T]here is no 'definitive checklist or test' for meeting this standard." 676 F.3d at 527 (quoting *Daubert I*, 593). Nor did the Court of Appeals read *Newell* that way, observing only that *Newell* provided factors which "caution against certifying an expert." *Id*.

The panel correctly observed that Gilliam's testimony presented each red flag "to one degree or another." *Id*., ¶58.The court noted "[t]he prevalence of these red flags ***further supports*** our conclusion…." *Id*. (emphasis added).

Thus, the court neither created new requirements nor applied a restrictive test.

Rather, the court looked at factors pertinent to the specific case before it, relying on a federal circuit for persuasive – not precedential – guidance in determining reliability. *Shreck*, 77-78 (discussing *Daubert I* and *Downing* and approving, but not requiring, consideration of factors discussed therein).

This Court regularly looks to sister jurisdictions to analyze expert testimony. *Ruibal*, ¶16 (citing New Jersey, Louisiana, Delaware, Texas, and California cases); *Venalonzo*, ¶21 ("case law from other jurisdictions is informative" in discerning lay from expert testimony and examining cases); *People v. Stewart*, 55 P.3d 107, 123-

24 (Colo.2002) (agreeing with reasoning of Eighth, Ninth, Eleventh Circuits in assessing whether crime scene reconstructionist must be qualified as expert); *Brooks*, 1114 (adopting majority rule from other courts considering scent tracking).

Moreover, the *Newell* factors largely mirror considerations already approved by this Court:

Sixth Circuit factors	***Shreck*-approved equivalents**
(1) reliance on anecdotal evidence	• whether technique has been generally accepted and/or subjected to peer review/publication; existence of specialized literature dealing with technique
(2) improper extrapolation; and (3) failure to consider other possible causes	• known or potential rate of error and type of error generated by technique
(4) lack of testing	• whether technique has been tested
(5) subjectivity	• technique's relationship to more established modes of analysis; existence/maintenance of standards controlling technique's operation
(6) whether opinion was prepared solely for litigation	• whether the evidence has been offered in previous cases; non-judicial uses to which technique is put

Shreck, 77-78; *Ornelas-Licano*, ¶56-57; *see* 2 Saltzburg/Martin/Capra, *Federal Rules of Evidence Manual* 1229-37 (7th.ed.1998) (reviewing federal cases employing *Newell*-listed factors and several others).

Finally, the six "red flags" are rational considerations a discerning trial court may (or may not) wish to consider in future cases when considering the totality of the circumstances – just as this Court prescribed in *Brooks* and its progeny. *Shreck*, 77-78.

Brooks "held that it was preferable to avoid debating whether or to what extent a court should apply the *Daubert* factors." *Id*., 78. Rather, a "trial court may consider a wide range of factors pertinent to the case….The factors mentioned in *Daubert* and by other courts may or may not be pertinent…." *Id*., 79. And "[a] trial court may also consider other factors not listed here to the extent that it finds them helpful in determining the reliability of the proffered evidence." *Id*., 78.

Per this Court's guidance, the Court of Appeals provided Colorado trial courts with useful, non-binding guidance, not a restrictive checklist. And the court merely cited cautionary factors as ***further support*** for its holding. *Ornelas-Licano*, ¶¶42-56, 59.

Thus, the State misreads the opinion. Its critiques fail.[12]

C. The State's Dichotomies Fail.

Science vs. Experience

The State's argued distinction between science-based and experience-based expertise is unhelpful.

First, framing expertise as experiential rather than scientific does not redeem junk science. *E.g.*, *Petriciolet*, 653 ("lethality assessment" by licensed social worker based on experience and victim interview not sufficiently reliable).

"The danger of this type of speculative testimony, i.e., opinion testimony that has no sound scientific basis, is that what appears to be scientific testimony but is really not may carry more weight with the jury than it deserves." *Ramirez*, 379 (citing *DePaepe*, 720).

Gilliam's testimony and "re-creation" were not based in sound or practiced methodologies. Rather, they were supported "only by a bare assertion resting on the authority of the expert." *Id*. "When a witness's methodology and conclusions cannot

---

[12] The State also incorrectly argues *Ornelas-Licano* would bar experience-based expertise previously admitted, such as child-victim-characteristics testimony.

The opinion created no restrictions and thus no bars to admission. Again, the factors may be helpful (or may not be) in CRE 702's totality-of-the-circumstances analysis dependent on the particular facts, expertise, opinion, and expert in each case. And the opinion clearly limited its analysis to this case, expert, and record. *Ornelas-Licano*, ¶¶2, 46-47, 50-51, 53, 56, 59.

be validated or have been otherwise inadequately tested, the proposed testimony is characterized as junk science." *Petriciolet*, 653 (cleaned up).

Second, CRE 702 and 403 apply to all claimed expertise, whether "scientific, technical, or other specialized knowledge." The only strict criteria for admission, regardless of knowledge base, are reliability, helpfulness to the jury, and sufficient qualifications in the proffered field. *Shreck*, 77; *Brooks*, 1109, 1114.

The distinction between experiential and science-based expertise is blurry and unworkable. *E.g.*, *Kumho Tire*, 148 (no clear line dividing scientific knowledge from technical or other specialized knowledge). Thus, *Brooks* and *Shreck* rejected hardline distinctions, instead vesting discretion in trial courts to determine: "On *this subject* can a jury from *this person* receive appreciable help?" *Brooks*, 1109 (quoting *Williams*, 798 (*Williams'* emphases)).

Brooks held it preferable to avoid disputes over *Daubert's* factors. 975 P.2d at 1114. Rather, *Brooks* and *Shreck* left it to trial courts to determine which factors – including *Daubert's*, *Downing's*, and others – to consider in each particular case. *Shreck*, 77-78; *Brooks*, 1113-14.

Third, the experiential distinction does not apply here.

The State apparently claims terminal ballistics – including determining shooting angles and projectile trajectory based on impact-shape analysis and crime

scene "re-creation" – is non-scientific. This defies reason, law, Gilliam's testimony, and the prosecution's own representations below.

"Forensic ballistics and bullet trajectory analysis is [a] highly technical area, subject to peer-reviewed research, and some degree of standardization. Ballistics testimony requires specialized expertise." *Krause*, 1265 (citing cases); *see U.S. v. Scheffer*, 523 U.S. 303, 312 (1998) (ballistics squarely within expert category); *Stewart*, 123-24 (crime scene reconstructionist must be qualified as expert); *People v. Caldwell*, 43 P.3d 663, 667-68 (Colo.App.2001) (generally, understanding ballistics evidence – especially experiments and reconstructions – requires specialized or scientific knowledge).[13]

Sister jurisdictions have analyzed similar evidence as science-based. *See* Section V.

Further, in opening statements, the prosecutor told jurors: "You'll hear all about angles and all that science sort of thing." (TR 11/3/15, p26:7-8)

Preparing the *Shreck* hearing, the court asked the prosecutor: "What do you call this science?" (TR 11/4/15, p53:1-2) The prosecutor replied it went to "basic physics, geometry, ballistics." (*Id*., p53:3-6)

[13] No party claims Gilliam provided lay testimony.

The prosecutor established through Gilliam's *Shreck*-hearing testimony that ballistics is science and based on physics. (*Id*., p57-59, 66:4-9) "Most of the top guys in that field are physicists…." (*Id*., p65:24-25)

The prosecutor asked Gilliam: "And this testing, this reconstruction you did, is this based on the science of terminal ballistics?" Gilliam replied: "It is." (*Id.*, p62:2-4); *Ornelas-Licano*, ¶34.

During trial, Gilliam testified he had "specialized training in the different areas of forensic science…," ballistics is "a science unto itself," and his testimony would involve the "science of aerodynamics, the physics of how the bullet's weighed…and how it flies." (TR 11/4/15, p82:24-25, 83:7-9, 83:21-23)

Thus, not even the prosecution or Gilliam disputed their proffer was science-based. Indeed, they encouraged jurors to trust Gilliam's science-based opinion.

Fourth, even, *arguendo*, under the State's experience-rubric, Gilliam did not possess the requisite experience:

- He had never performed such a "re-creation."
- He performed it a single time specifically for this case.
- He created the technique himself. He did not research it or train for it.
- He was not trained in the field for which he was proffered.

- He had not taken courses or trainings in the subject matter of his opinion.

- He had not reviewed any literature to create, perform, or analyze the results of the technique.

(*Id*., p58-59, 65-66, 70-71, 90-92, 137-38)

Gilliam was unqualified. His opinion was unreliable under either a science-or experience-based test. This was junk science.[14]

Methods vs. Conclusions

The State claims the Court of Appeals analyzed Gilliam's conclusions, not his methods. OB at 29-37. Not so.

Gilliam's conclusion was that Ornelas fired from "a natural shooting position." His methods included an untested hypothesis that there is a "nonrandom correlation between the shape of a bullet hole in a windshield and the angle of impact

[14] The State claims Gilliam's opinion was reliable because he did not rely on a sixth sense, it was based on personal observation, and he tested his opinion through the re-creation. OB at 37-45. The State thereby ignores Gilliam's dearth of relevant prior experience, his invention of the test for this case, single testing attempt, and the absence of support, whether literature, training, or education, for his methods or conclusions.

These voids dispatch the State's reliability claim. They also distinguish this case from *Brooks*, where the expert had extensive experience ***in the specific field and technique for which he was proffered*** and the prosecution laid foundation establishing same. 975 P.2d at 1114; *Ornelas-Licano*, ¶¶52-53.

of the bullet" and one attempt to recreate two hypothetical shooting angles. *Ornelas-Licano*, ¶45.

The Court of Appeals meticulously reviewed Gilliam's methods, the *Shreck* proceedings, and Gilliam's re-creation. *Ornelas-Licano*, ¶¶30-40.

The court expressly examined "the underlying premise" of Gilliam's opinion and Ornelas's challenge to "the reliability of the methodology [Gilliam] used to reach his opinion." *Id*. The court observed: "Aside from Gilliam's own hypothesis, the record is *devoid of any showing* that the shape of a bullet hole in a windshield is demonstrative or indicative of the angle at which the bullet struck the glass." *Id*., ¶46 (original emphasis). And: "Inspector Gilliam purported to be able to apply a technique to determine, based on the shape of a bullet hole, where the bullet came from, but there was no showing that the technique 'works.'" *Id*. (citing *McCormick on Evidence*).

Moreover, the *Newell* factors, which the State claims constitute the core of the court's opinion, focused exclusively on Gilliam's methods, not his conclusions. *Id*., ¶¶57-58.

Thus, the court reviewed Gilliam's unreliable methods. Of course, because his methods lacked reliability, so did his conclusions. *Id*., ¶59.

V. Several Cases from Other Jurisdictions Support the Court of Appeals' Opinion.

Courts in other jurisdictions have found similar evidence inadmissible. *Hathaway*; *Harris*; *Gates*; *Krause*; *Krein*. And Mississippi's and Rhode Island's highest courts found admission of trajectory analysis testimony and related re-creations constituted reversible error. *Parvin v. State*, 113 So.3d 1243, 1250-52 (Miss.2013); *State v. Walters*, 551 A.2d 15, 17-19 (R.I.1988).

Parvin

Parvin, a murder case, turned on whether a shotgun discharge was accidental. A pathologist testified he could discern shooting distance from the wounds' shape and could discern bullet trajectory and angle of entry from measurements he took assuming an "anatomically correct position." 113 So.3d at 1248-49. He testified his measurements were "consistent with the barrel's pointing downward toward the victim in a seated or standing position." *Id*., 1250.

The prosecution created digital images, which a crime-scene reconstructionist said approximated the shooting. *Id*.

Mississippi's highest court reversed. The evidence "fell woefully short of the requirements for admissibility," under Mississippi's Rule 702. *Id*., 1250-52. The measurements were not backed by reliable principles or methods, only the expert's assertions. *Id*., 1251. The crime-scene reconstructionist presented his re-creation

without "any degree of certainty regarding the accuracy of his theory as to how the shooting occurred, and he merely asserted that it was his 'best approximation' of 'a hypothesis or an idea of how maybe the incident happened.'" *Id*.

The same is true here.

Gilliam's measurements required deductions from the windshield impact marks unsupported by reliable methods or principles. His "re-creation" was a mere hypothesis lacking any degree of certainty. Like *Parvin*'*s* "anatomically correct position," Gilliam assumed a "natural shooting position" to perform his test.

Hathaway

In *Hathaway*, the expert's conclusion was only supported if the shooter "had been holding his gun a particular way, and if the [vehicle] was facing a particular direction, and if the driver was sitting with a particular posture…." *Hathaway*, 318. Even then, "there [was] no indication of how [the witness] is specifically trained to make these determinations or if the calculations he used in coming to his conclusions are the kind normally used and accepted in forensic reconstruction." *Id*.

Thus, the district court properly excluded the expert, despite 20 years of police experience and firearms training. *Id*., 319.

Here, there were too many variables and Gilliam conducted too few tests to draw reliable conclusions. (TR 11/9/15, p25-27, 32-35, 48-49) Like *Hathaway*,

Gilliam's testimony and re-creation relied solely on Gilliam's authority and assumptions. 507 F.3d at 318-19.

Walters* and *Harris

Walters turned on whether the defendant fired his gun accidentally when he was hit by a moving car. The prosecution presented police testimony concerning a "trajectory check" test. 551 A.2d at 16-17. Rhode Island's highest court reversed, finding the trial court erred in admitting the testimony due to the officer's lack of qualifications and the opinion's unreliability. *Id*., 17-19.

In *Harris*, an accident reconstructionist opined on the likelihood of three gunshots originating from the driver's seat of a moving car. 2017 WL 6205782, *7. The expert "described his methodology of creating a model of the victim and the gunshot wounds." *Id*.

The expert was not trained in terminal ballistics or forensic pathology. *Id*. He could not cite sources "to support the use of a model to replicate firing angles with respect to terminal ballistics, his methodology had not been peer reviewed, and he could not point to a specific error rate." *Id*. He "admitted that he had never testified about bullet trajectory in a moving vehicle." *Id*.

The trial court cited these factors in excluding the expert's testimony. *Id.* The court found, "[t]his was not a known body of science. This was a reenactment

prepared for litigation." *Id*. And the expert could not testify that the conditions of the test were the same as the shooting incident. *Id*., *8.

Thus, the opinion could not help determine a disputed fact. *Id*. The appellate court found the trial court properly analyzed the testimony. *Id*.

Harris's observations aptly describe Gilliam's testimony.

******

Gilliam's testimony and "re-creation" were unqualified, unreliable, and unhelpful to jurors. *Hathaway*; *Gates*; *Krause*; *Rojas Mamani*; *Krein*; *Harris*; *Parvin*; *Walters*. The trial court erred. *Ruibal*; *Shreck*; *Williams*.

VI. The State Cannot Demonstrate the Errors Were Harmless.

Gilliam's testimony and "re-creation" were the centerpieces of the prosecution's case, emphasized in both opening statement and closing arguments. (TR 11/3/15, p25-26; TR 11/10/15, p24-25, 75-76) Gilliam's conclusion that Ornelas shot from "a natural shooting position" opined on the case's ultimate issue.

The position and angle of Ornelas's right hand on the gun when it discharged were critical jury determinations. (TR 11/3/15, p25-26, 30-31; 11/10/15, p24-25, 47-54, 75-76) Significantly, 11 of 28 jury questions for trial witnesses involved the shooting angle, trajectory estimates, or aspects of the windshield re-creation. (Supr.,

p95, 97-99, 103, 106-07, 109-10, 112, juror questions #8, 10, 11, 13, 14, 18, 22, 23, 24, 25, 27)

Myriad possibilities – which Gilliam failed to explore – existed concerning the gun's discharge. Indeed, there were "too many unknowns and too many variables in this particular case" to reach a conclusion about the gun's position. (TR 11/9/15, p25-26, 32:6-10, 35:10-21)

The bullet never impacted Schneider's vehicle and was never recovered. (TR 11/6/15, p15:12-16, 19:12-19, 28-30; 11/9/15, p26:11-20)

The State argues evidence leading up to the discharge renders any errors harmless. AB, p51-52 But unwise or even reckless conduct under these circumstances did not demonstrate a knowing, substantial step towards causing death.

Rather, Ornelas's conduct was entirely consistent with Ornelas fearing both jail and being killed by police – an understandable fear, given the SWAT team's extreme show of force. Ornelas explained to Moore that he took out the gun because he was scared by five officers pointing guns at him and acting like "Rambo."

Had Ornelas wanted a "shootout," he had ample opportunity before he encountered Schneider. Schneider was not even blocking his path. And Ornelas was

arrested without incident the next day by a single officer – conduct hardly indicative of a man seeking a "shootout."

Only Gilliam's testimony and that of the paid jailhouse informant tended to show Ornelas possessed the *mens rea* for attempted second-degree murder. *Ornelas-Licano*, ¶¶62-63. The jailhouse witness lacked credibility. *Id*.

The State also shifts the burden, arguing "there was no evidence presented indicating that [Ornelas's gun] had ever accidentally discharged before." AB, p52. Ornelas possessed constitutional rights to hold the State to its burden. *E.g., People v. Santana*, 255 P.3d 1126, 1130 (Colo.2011).

Regardless, the disputed fact was Ornelas's *mens rea* when the gun discharged during ***this*** incident.

Moreover, Gilliam's status "imbued [his] testimony—including [his] assessment of disputed facts—with an aura of trustworthiness and reliability." *Baker*, ¶41. He testified to technical matters, which jurors "were likely to afford…particular weight and credibility." *Id*., ¶42. And his opinion "tended to put 'the expert's stamp of approval on the government's theory' and thus might well have unduly influenced the jury's assessment of the disputed facts and evidence in this case." *Id*., ¶43 (quoting *U.S v. Montas*, 41 F.3d 775, 784 (1st.Cir.1994)).

Finally, as the Court of Appeals rightly observed, "[t]here are special concerns attendant to law enforcement expert testimony." *Ornelas-Licano*, ¶64 (quoting *U.S. v. Rodriguez*, 125 F. Supp. 3d 1216, 1238 (D.N.M.2015) (citing *U.S. v. Medina–Copete*, 757 F.3d 1092 (10th.Cir.2014))). Expert police witnesses present a danger jurors will see their expertise as determining guilt or innocence or afford their testimony talismanic significance. *Id*. (citing *Rodriguez* and *U.S. v. Frazier*, 387 F.3d 1244, 1265 (11th.Cir.2004)).

The State cannot demonstrate the errors were harmless, let alone harmless beyond a reasonable doubt. *James*, ¶19. Courts in several other jurisdictions have found similar testimony inadmissible. *Hathaway*; *Harris*; *Gates*,*3-*4; *Krein*, *3-*4. And Mississippi's and Rhode Island's highest courts found admission of trajectory analysis testimony and related re-creations constituted reversible error. *Parvin*, 1250-52; *Walters*, 17-19.

This Court should do the same.

CONCLUSION

Ornelas respectfully requests that this Court affirm.

MEGAN A. RING
Colorado State Public Defender

JAMES S. HARDY, #38173
Lead Deputy State Public Defender
Attorneys for Jose Ornelas-Licano
1300 Broadway, Suite 300
Denver, CO 80203
303-764-1400

CERTIFICATE OF SERVICE

I certify that, on September 13, 2021, a copy of Jose Ornelas's Answer Brief was electronically served through Colorado Courts E-Filing on John T. Lee of the Attorney General's Office.