
Comment

PERCEPTUAL AND COGNITIVE BIASES IN THE UPTAKE OF POLICE BODY-WORN CAMERA FOOTAGE: IMPLICATIONS AND SUGGESTIONS FOR INTRODUCTION OF VIDEO EVIDENCE AT TRIAL

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* J.D. 2023, Quinnipiac University School of Law; B.A. 2016, University of Connecticut. The author would like to thank the staff members of the *Quinnipiac Law Review* for their diligent work on this publication, and to Professor Neal Feigenson for his advice and guidance on this project.

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I. INTRODUCTION

Picture this: a scene in a film begins with a panoramic shot of an open, barren vista. Dry, scraggly bushes dot a mesa in the background. A closer shot shows three cowboys standing among headstones in a graveyard. One cowboy slowly walks away from the others to form a triangle. An even closer shot shows that the cowboy places a stone on the ground and looks up abruptly. The film's score intensifies as the camera shifts between close-up shots of the three cowboys: their dusty boots, hands on their holsters, and faces filled with anticipation for the climactic final duel.

For the film *The Good, the Bad and the Ugly*,¹ world-renowned director Sergio Leone and his team of cinematographers artfully manipulated long shots, close-ups, and a variety of other filming techniques to elicit a variety of emotions in their audience.² Telephoto close-ups, which flatten the image and focus the view on one of the characters, signal importance and tension.³ With only the face of the character visible, the close-ups also heighten suspense and invite the viewer to imagine what is occurring outside the frame. The precise attention to editing, sound, and music build-up also can create drama. Leone employed these techniques to create his "western masterpiece"⁴ because he knew what all filmmakers

¹ THE GOOD, THE BAD AND THE UGLY (Metro-Goldwyn-Mayer 1966).

² See GUSTAVO MERCADO, THE FILMMAKER'S EYE: THE LANGUAGE OF THE LENS 59 (2019) ("The [wide-angle lens can] extend[] field of view across . . . axes and the expansion of perspective [This] is ideal to showcase, or even exaggerate, the vastness of a large interior or exterior space These lenses can make a dramatic statement about the scale of a location *The Good, the Bad and the Ugly*, features several examples of wide-angle lenses [T]he scene that opens the legendary final showdown between the titular characters has particularly effective use of this type of lens."). See, e.g., Matthew Oquendo, Review of *The Good, The Bad, and The Ugly*, MEDIUM, (Aug. 18, 2016), <https://matthewoquendo.medium.com/essentials-17-the-good-the-bad-and-the-ugly-1967-767629723fd5> (discussing emotions evoked by certain movie camera techniques).

³ See MERCADO, *supra* note 2, at 61 (explaining perspective compression and expansion techniques); see generally Nilesh Suresh & Arvind Sivakumar, *Evaluation of the Distortion of Photographs Using Various Focal Lengths*, 17 BIOINFORMATION 814, 815 (2021) (citing Lewis Claman et al., *Standardized Portrait Photography for Dental Patients*, 98 AM. J. ORTHOD. DENTOFACIAL ORTHOP. 197 (1990)).

⁴ MERCADO, *supra* note 2, at 59 (selecting Leone as exemplifying effective wide-angle lens usage among other techniques). Montages are another cinematic technique where short shots are edited together "to condense space, time, and information." *The Montage*, NEXTSHOOT (July 6, 2020), <https://nextshoot.com/blog/the-montage/>; MERCADO, *supra* note 2, at 131 (explaining timing techniques and the use of out of focus imagery to convey complex human emotion).

know: the shot matters.⁵ Close-ups, long shots, camera angles, and lighting, as well as movement, montage, dialogue, lighting, score, and more, all combine to convey the film's effects and meanings.

Characteristics of film footage instill connection, bewilderment, urgency, suspense, and more to the viewers in the theater, their homes, or wherever else they watch the movie. Viewers of film feel these emotions emanating from the movie's characters and may feel the emotions themselves in response to the events in the movie. Film viewers also may critically analyze the events of the movie. They may wonder what will happen next, why a character acted in a certain way, or whether a character's actions were reasonable.

The underlying psychological and sensory processes that encode cognitive and emotional responses to, say, a documentary film, traditional drama, or western adventure are the same processes audiences use to perceive and understand film in other settings, such as a courtroom.⁶ Lawyers have presented film and, later, video in courtrooms since the 1920s, but video evidence has become increasingly common as hand-held video cameras and smartphone cameras have proliferated.⁷ Specifically, footage from police body-worn cameras (BWCs) has recently become more prevalent in court as more and more law enforcement agencies have adopted the regular use of BWCs.⁸

⁵ See MERCADO, *supra* note 2, at 159 (discussing how to create optical distortion) ("As with other techniques, every detail matters: how much distortion is necessary? . . . [A]ll lenses are constructed and designed differently and have their own individual 'optical personality'. . . . [Variations] can produce noticeably different images in terms of color bias, contrast, sharpness, aberrations, vignetting, flares, and distortion.").

⁶ See Ib Bondebjerg, *Documentary and Cognitive Theory: Narrative, Emotion, and Memory*, 2 MEDIA COMMUN 13, 14 (explaining how humans use the same cognitive and emotional properties when experiencing film, regardless of the type of film). It is important to note that cinematic films go through an extensive editing process. Naomi, *The Editing Process of a Hollywood Movie*, THE GREAT DEBATERS MOVIE (Dec. 2, 2021), <https://www.thegreatdebatersmovie.com/how-long-does-it-take-to-edit-a-hollywood-movie/>. Although footage presented as evidence at trial may go through an editing process, footage must adhere to the Federal Rules of Evidence, see Authenticating or Identifying Evidence, FED. R. EVID. 901, rules of ethics, and other guidelines, which cinematic films, of course, are not obligated to do. LOUIS-GEORGES SCHWARTZ, MECHANICAL WITNESS: A HISTORY OF MOTION PICTURE EVIDENCE IN U.S. COURTS 13–14 (Oxford Univ. Press 2009); BUREAU JUST. ASSISTANCE, U.S. DEP'T OF JUST., VIDEO EVIDENCE: A PRIMER FOR PROSECUTORS 4–9 (2016) (outlining the process for entering video evidence into evidence at trial).

⁷ See SCHWARTZ, *supra* note 6, at 3–5 (detailing the history of the presentation of film/video at trial).

⁸ Kristyn A. Jones et al., *Look There! The Effect of Perspective, Attention, and Instructions on How People Understand Recorded Police Encounters*, 37 BEHAV. SCI. L. 711, 712; see, e.g., CONN. GEN. STAT. § 29-6d(3) (2021) (defining "Body-worn camera recording equipment" as "[a]n electronic recording device that is capable of recording audio and video").

BWCs are capable of creating images that are markedly different from images received by the unaided human eye or images captured using other types of cameras, such as smartphone cameras or those used by news and documentary filmmakers. BWCs usually attach to the chest of an officer's uniform so that they can capture events from the officer's perspective.⁹ Due to the fact that the BWC-equipped officer is often in motion and physically quite close to the person with whom he is interacting, video may include sudden movements and motion blur that may give viewers a distorted sense of the depicted events.¹⁰ These cameras use wide-angle, "fisheye" lenses that produce images different from what standard lenses produce or what the unaided human eye sees.¹¹ This type of lens has the effect of making objects and events in the center of the field seem closer than they really are, while objects and events on the periphery can seem further away.¹² Other factors, such as ambient sound and lighting, may also make BWC video different from the video produced by other sorts of cameras.¹³ All these features can affect how judges and jurors interpret what they think they are seeing and hearing in the video, which shapes the meanings that they take away from their viewing.¹⁴

⁹ See, e.g., CONN. GEN. STAT. § 296d(6)(b)(2) (2021) ("Each police officer shall wear body-worn recording equipment on such officer's outer-most garment and shall position such equipment above the midline of such officer's torso when using such equipment."); Jones et al., *supra* note 8, at 711.

¹⁰ See Jones et al., *supra* note 8, at 728 (discussing study of BWC videos from police encounters and concluding that people more favorably rated police actions from BWC video footage than video from a third-party perspective). See generally MERCADO, *supra* note 2 (section titled "Focus") (discussing how filmmakers use varying degrees of "blurriness" to evoke specific and often negative reactions from an audience, such as tension, anxiety, and turmoil); *id.* at 83–87 (discussing the effects of speed/movement and blur).

¹¹ MERCADO, *supra* note 2, at 59. See also *id.* at 42–43 (explaining the mechanics of the fisheye effect and wide-angle lenses); Rémi Boivin et al., *The Body-Worn Camera Perspective Bias*, 13 J. EXPERIMENTAL CRIMINOL. 125, 137 (2016) (discussing the distortion that results from fisheye lenses).

¹² MERCADO, *supra* note 2; Boivin et al., *supra* note 11, at 139 (discussing how fisheye lenses can distort distance perception).

¹³ See Nevena Aksin, *When the Watchers Become the Watched: A Qualitative Inquiry into Police Officer Perceptions of Body-Worn Cameras*, 18 (2018) (M.A. thesis, University of Ottawa) (on file with University of Ottawa) (discussing ambient sounds captured by BWC videos); Diana Miranda, *Body-Worn Cameras 'On the Move': Exploring the Contextual, Technical and Ethical Challenges in Policing Practice*, 32 POLICING & SOC'Y 18, 19 (citing Michael White & James Coldren, *Body-Worn Police Cameras: Separating Fact from Fiction*, PM MAG. (Feb. 12, 2017), <https://icma.org/articles/pm-magazine/pm-article-body-worn-police-cameras-separating-fact-fiction>)).

¹⁴ As mentioned, filmmakers know that certain imagery can cause specific reactions from an audience. Filmmakers intentionally influence an audience's response by utilizing camera techniques and technology to produce specific imagery. See *supra* notes 2–6 and accompanying text. While an officer equipped with a BWC is not necessarily akin to a filmmaker

This Comment focuses on the technical ways in which BWC video fails to provide objective, dispositive, “speaks-for-itself”¹⁵ proof. Specifically, this Comment addresses certain features inherent in BWCs and video that can affect interpretations of video imagery, and considers how footage can lead viewers to make inaccurate factual judgments about the events the video depicts.¹⁶

Part II reviews the perceptual, cognitive, and emotional biases that the presentation of BWC footage at trial is most likely to elicit. Many people think (or hope) that BWC video is objective evidence that provides fact finders with more reliable and complete foundation for judgments than would testimony, which is often imperfect.¹⁷ Judges and jurors, however, approach video footage with their own preconceptions that can bias

shooting a movie, understanding the impact of visual imagery is highly relevant for considering issues posed by BWCs and what emotions may be triggered in a courtroom due to common perceptions of certain imagery:

Most viewers are not consciously aware how lenses impact the look of the images they see on the screen, but after years of watching movies they are familiar with the various cinematic “lens aesthetics” that are part of the visual language of movies. . . . This familiarity with cinematic aesthetics is routinely exploited by filmmakers Specialized lenses can be particularly helpful . . . because they tend to produce images with unusual visual qualities in terms of magnification, focusing, and optical distortion.

MERCADO, *supra* note 2, at 122. See also Neal Feigenson et al., *In the Eyes of the Law: Perception Versus Reality in Appraisals of Video Evidence*, 24 PSYCH., PUB. POL’Y, & L., 93, 94 (2018) (explaining the increased importance of video evidence) (“Video, as compared with other forms of evidence, has unique persuasive power to communicate legally relevant facts. Video is more cognitively and emotionally arousing and vivid than other forms of evidence This property of seemingly direct access leads perceivers to evaluate video with a naïve realism, the sense that what is being conveyed is a complete, objective reflection of events as they really are.” (citing Brad E. Bell & Elizabeth F. Loftus, *Vivid Persuasion in the Courtroom*, 49 J. PERSONALITY ASSESS. 659 (1985); and Richard K. Sherwin, Neal Feigenson & Christina Spiesel, *Law in the Digital Age: How Visual Communication Technologies are Transforming the Practice, Theory, and Teaching of Law*, 12 B.U. J. SCI. & TECH. L. 227 (2006)).

¹⁵ Scott v. Harris, 550 U.S. 372, 373 (2007) (Supreme Court considering video evidence of a police-civilian encounter objective) (“[The Court is] happy to allow the videotape to speak for itself.”).

¹⁶ Jones et al., *supra* note 8, at 711.

¹⁷ Holly Ellingwood, *Vantage Points: Mock Juror Perception of Body-Worn Camera Video Evidence in Cases Involving Police Use of Force* 23 (2019) (Psy.D. thesis, Carleton University) (on file with Carleton University) (discussing the precedent in American and Canadian courts that video evidence speaks for itself); *Harris*, 550 U.S. 372. But see Mary D. Fan, *Justice Visualized: Courts and the Body Camera Revolution*, 50 U.C. DAVIS L. REV. 897, 951 (2017) (quoting CITY OF SAN DIEGO, DP NO. 1.49, SAN DIEGO POLICE DEPARTMENT PROCEDURE 1, 11 (2015)) (“The San Diego Police Department’s policy provides an important caution applicable to courts as well as officers: ‘Video cannot always show the full story nor does it capture an entire scene. . . . Persons reviewing recordings must also be cautious before conclusions are reached about what the video shows. . . .’”).

their perceptions and judgments.¹⁸ Therefore, biases induced by BWC video preclude entirely objective or conclusive proof of the depicted events.¹⁹ Next, Part III explores solutions to reduce such problems, including judicial instructions and the framing of video evidence.²⁰ Finally, Part IV summarizes the key biases and solutions derived from the research.

II. PERCEPTUAL AND COGNITIVE BIASES

Understanding the ways in which events are captured on video and the specifications of the cameras used is important when considering the risk of bias with BWC recordings. The characteristics of video recordings can affect a viewer's perception and interpretation of that event in many possible ways: (1) perceptions of that event, including the intentions and emotions of people involved; (2) attributions of responsibility or blame; and (3) ability to recall what was seen (accurately or otherwise).²¹ Therefore, perceptions of a single event captured by, for example, the lens of a GoPro camera that is tens of feet off the ground, can vary from those caught by a bystander's iPhone camera, a surveillance camera from a nearby store, or the BWC of a police officer involved in the event.

For a variety of reasons, BWC video's first-person perspective tends to prompt different cognitive and emotional responses than videos shot from a third-person perspective do.²² The fast movements of the BWC located on the torso of the officer engaged in an altercation can create blurred motion because the shutter speed cannot maintain video clarity, exaggerating the sense of activity and possibly the threat posed by the

¹⁸ *Video in Legal Decision-Making Webinar Series*, AM. BAR ASS'N (Sept. 6, 2022), https://www.americanbar.org/groups/science_technology/events_cle/video-in-legal-decision-making-webinar-series/.

¹⁹ See discussion *infra* Section II.D.

²⁰ The goal of these interventions is to help jurors and judges who use BWC video evidence to make crucial decisions about criminal guilt or civil liability to use that evidence wisely and make more accurate judgments. See discussion *infra* Part III.

²¹ See Jones et al., *supra* note 8, at 712 (discussing the effect of the camera perspective on audience perception of intent and guilt). See also G. Daniel Lassiter et al., *Illusory Causation: Why It Occurs*, 13 PSYCH. SCI. 299, 304 (2002) (discussing the effect of the camera perspective on recall).

²² See Lennart Jungbauer, *The Effect of Motion Dynamics and POV Shots on Film Viewers' Narrative Engagement, Empathy and Arousal*, 5 (B.A. thesis, Tilburg University) (on file with Tilburg University) (discussing the different cognitive and emotional responses elicited from videos and video games shot in first-person perspective and third-person perspective); see also discussions *infra* Sections II.A.1, II.D.

person with whom the officer is interacting.²³ The “fisheye” or wide-angle lens utilized in many models of BWCs distorts the view of the depicted event, in particular by making people and objects in the center of the image appear closer to the camera, and hence to the officer, than they actually were.²⁴ To appreciate the risks of bias posed by BWC video footage, it is crucial to analyze the underlying sensory and psychological processes specific to each of these distinct properties of BWCs.

A. Camera Perspective Bias

The perspective of BWC footage can affect jurors’ perceptions and interpretations of the event. Perhaps the most prominent psychological phenomenon that can affect viewers’ perception of the BWC video is the camera perspective bias.²⁵ “Camera perspective” refers to the point of view (POV) of the camera and, consequently, the field of view (FOV) observers see when they watch the video the camera has captured.²⁶ “Camera perspective *bias*” refers to the effect of a limited first-person view on the interpretations of what viewers see.²⁷

*Example 1: A confession is captured on video by three cameras. Camera 1’s video footage captures only the suspect. Camera 2 captures both the suspect and the interrogator. Camera 3 captures the suspect from the interrogator’s POV. The perspectives induce viewers to interpret the same event in different ways.*²⁸

²³ Fernando Navarro et al., *Motion Blur Rendering: State of the Art*, 30 COMPUT. GRAPHICS F. 3, 3–4, 17 (2011) (detailing how camera shutter speed can effectuate the motion-blur phenomenon); MERCADO, *supra* note 2, at 83, 95.

²⁴ The features of different cameras and lens types are discussed briefly at the beginning of this Comment and in substantial detail in Gustavo Mercado’s book *The Filmmaker’s Eye*. For information about the distortion feature of wide-angle lenses, see MERCADO, *supra* note 2, at 42–44; and Boivin et al., *supra* note 11, at 137–39.

²⁵ G. Daniel Lassiter & Audrey A. Irvine, *Videotaped Confessions: The Impact of Camera Point of View on Judgments of Coercion*, 16 J. APPLIED SOC. PSYCH. 268, 272, 275 (1986).

²⁶ G. Daniel Lassiter et al., *Further Evidence of a Robust Point-of-View Bias in Videotaped Confessions*, 21 CURRENT PSYCH. 265, 267–68, 274 (2002) (explaining that camera perspective, or camera point of view, changes what the observer sees and, as a result, the observer’s interpretation of the event).

²⁷ *Id.* at 274, 280 (emphasis added) (suggesting that camera perspective bias may be more likely to occur when content in the video for audiences to consider is limited and/or when only one party is within the camera’s focus).

²⁸ This example is derived from the 1986 Lassiter and Irvine study, which suggests that the perspective of a videotaped interrogation may bias judges and/or jurors to perceive a confession as voluntary. Lassiter & Irvine, *supra* note 25, at 272–75.

Researchers have identified several underlying perceptual processes that produce the bias illustrated in Example 1: illusory causation, attention, salience, distance distortion, angle, and self-imagery.²⁹ This research, and more, is discussed below.

1. Camera Perspective Bias: Foundational Research and Principles

In 1986, psychologists G. Daniel Lassiter and Audrey Irvine published findings from their inaugural study on camera perspective bias in the context of videotaped confessions.³⁰ In the study, participants were shown the same interrogation filmed from one of three points of view: (1) suspect-focus; (2) detective-focus; and (3) both-focus.³¹ The suspect-focus POV is where the camera shows only the suspect from behind a detective's shoulder, and the detective-focus POV is where only the detective is visible.³² As the name suggests, the both-focus POV presented the parties equally, with the camera focusing on both the suspect and the detective.³³ When asked to rate the level of coercion or voluntariness of the confession, participants who viewed the suspect-focus video reported lower levels of coercion than those who watched the interrogation from the other perspectives.³⁴

The researchers concluded that “the point of view from which a confession is videotaped can have a considerable impact on observers’ judgments of whether that confession was voluntary or coerced.”³⁵ In this early study, the researchers hypothesized that the suspect-only focus led jurors

²⁹ There are other factors and perceptual processes casually related to camera perspective bias, but this Comment focuses the discussion on these processes.

³⁰ Lassiter & Irvine, *supra* note 25, at 268.

³¹ *Id.* at 269–70 (describing the experiment parameters, stimulus materials, and camera arrangements).

³² *Id.*

³³ *Id.*

³⁴ Lassiter & Irvine, *supra* note 25, at 272 (detailing findings) (“When the camera focused primarily on the suspect, her admission of guilt was judged to be the result of a small degree of coercion; when the camera focused on both the suspect and the detective, it was judged to be the result of a moderate degree of coercion; and when the camera focused primarily on the detective it was judged to be the result of a large degree of coercion.”).

³⁵ Specifically, the results from this experiment showed that judgments of voluntariness by the viewers who watched the video from the third-person POV were much more moderate than the judgments of those who viewed the first-person perspective of either the suspect or detective. *Id.* at 272–73.

to underestimate the amount of pressure that the partially-hidden interrogator actually exerted.³⁶

Lassiter and Irvine, along with other researchers, have since replicated the basic study, and results have consistently shown that participants who view the suspect-focus POV are more likely to judge the confession as voluntary.³⁷ Lassiter and colleagues have found in subsequent studies that camera perspective bias is difficult to eliminate.³⁸ For example, in one study, Lassiter's team informed participants that they would have to justify their assessments of the confession's voluntariness to a judge in the criminal court as a way to give them a heightened sense of accountability for their evaluations of a thirty-minute videotaped confession.³⁹ The researchers concluded that asking these participants to verbalize their reasoning in a "high-accountability" scenario (i.e., to judicial authority) did not mediate the effect of the camera perspective bias overall.⁴⁰

Further, a large body of research indicates that camera perspective bias can affect interpretations of these videos.⁴¹ Mock jurors are more inclined to determine that a suspect's confession—often a critical item of prosecution evidence—was voluntary and, therefore, admissible, based

³⁶ See *id.* at 275 (summarizing the hypothesis) ("[I]t appears that when a videotape of an interrogation is made with the camera focused primarily on the suspect, the external pressures that he or she might have faced are more difficult for observers to detect.").

³⁷ Lassiter et al., *supra* note 21, at 299 (summarizing the results of eleven different experiments). See also G. Daniel Lassiter et al., *Evaluating Videotaped Confessions: Expertise Provides No Defense Against the Camera-Perspective Effect*, 18 PSYCH. SCI. 224, 224 (2007).

³⁸ See Lassiter et al., *supra* note 26, at 276 (discussing failed attempts to eliminate or attenuate point of view bias); Lassiter et al., *supra* note 21, at 304 (discussing the result of one study in which cognitive resources were taxed and recall was eliminated, yet camera perspective bias still influenced subjects' impressions).

³⁹ See G. Daniel Lassiter et al., *Videotaped Confessions: Is Guilt in the Eye of the Camera?*, 33 ADVANCES IN EXPERIMENTAL SOC. PSYCH. 189, 214 (2001) (walking through study parameters) ("[P]articipants . . . saw a brief videotape of . . . an actual retired judge . . . providing some guidelines concerning the determination of voluntariness. The videotape depicts the judge, dressed in his judicial robe, sitting at the bench in the local court house. Seeing the judge like this further conveyed a sense of reality about having to justify their judgments for those in the high-accountability condition. Participants then viewed either the suspect-focus or equal-focus version of the . . . confession used in [other studies]. Because the judge's remarks directed participants' attention specifically to the question of the confession's voluntary status, we made this the sole judgment they would have to justify.").

⁴⁰ Notably, the high-accountability participants transcribed their thoughts about the confession than those participants who did not have to justify their findings to a judicial authority. *Id.* at 214–15.

⁴¹ See Lassiter et al., *supra* note 21, at 299 (summarizing the results of the different experiments testing illusory causation) ("[E]valuations of a criminal confession presented on videotape are biased by the camera perspective taken during its initial recording.").

predominantly on a video of the confession that showed the suspect and not the interrogator (i.e., a suspect-focus POV).⁴²

It is reasonable, therefore, to conclude that camera perspective can also affect fact-finders' judgments of responsibility or blame regarding other sorts of events captured on video, such as police using force against civilians. BWCs film from the POV of the officer wearing the camera.⁴³ The BWC is attached to the officer's clothing in the center of the chest or the shoulder or is sometimes mounted on a helmet.⁴⁴ Viewers of BWC footage, therefore, see the event from the officer's perspective, as the camera is attached to the officer and moves with the officer's upper body.⁴⁵ Thus, the video depicts events from the first-person POV of the officer, which usually makes the civilian with whom the officer is interacting more visually salient than the officer, much like a suspect-focus video of an interrogation makes the suspect most visually prominent.⁴⁶

Blameworthiness can have important legal implications. Just as viewers are inclined to judge a confessing suspect as more responsible when they see a suspect-focus (as opposed to a detective-focus or both-focus) interrogation video, so they may be inclined to judge the civilian as more responsible and more blameworthy for events seen in a BWC video as opposed to a video taken from a different perspective.⁴⁷ Particularly, cases involving an officer's use of deadly force hinge on whether the officer reasonably perceived the need to use that level of force.⁴⁸ All

⁴² See Lassiter et al., *supra* note 26, at 281.

⁴³ Boivin et al., *supra* note 11, at 126.

⁴⁴ Aksin, *supra* note 13, at 17. See, e.g., CONN. GEN. STAT. § 296d(6)(b)(2) (2021); R.I. GEN. LAWS § 42-161-2(2) (2022).

⁴⁵ Boivin et al., *supra* note 11, at 126.

⁴⁶ Jones et al., *supra* note 8, at 712, 726 (citing Lassiter et al., *supra* note 21) (referencing research regarding camera perspective bias and visual prominence in the context of videotaped confessions and applying that logic to their own research on visual prominence in the BWC footage context). Visual "prominence" is also referred to as "saliency." *Id.*

⁴⁷ The hypothesis that people tend to view a civilian/suspect less favorably is supported by substantial research on the issue. See *supra* notes 39–46 and accompanying text. See, e.g., Jones et al., *supra* note 8, at 726–28 ("[P]eople hold more favorable ratings of police officer's actions and intent during violent interactions when they see BWC footage than when they see a third-person perspective."). This article concludes that these findings are consistent with the "robust illusory causation effect," meaning perspective bias is to blame. *Id.* at 726. The authors do note, however, that the "effect is not ubiquitous," as video clarity and the level of violence can offset perspective bias. *Id.* at 728.

⁴⁸ The Supreme Court has explained that if an officer has probable cause to believe that a suspect has committed or threatened to commit a violent crime, then deadly force may be used, if necessary. See *Tennessee v. Garner*, 471 U.S. 1, 11–12 (1985) (ruling that the use of deadly force to prevent the escape of a fleeing suspect is not constitutionally unreasonable

things being equal, the more responsibility for creating a “threatening” situation that BWC footage may place on a civilian, the more likely it is that viewers will judge that a police officer reasonably perceived the need to use force for protection.

Camera perspective bias, therefore, relates to several other psychological phenomena, such as the notions of salience and attention.⁴⁹ The example below provides the framework for this discussion:

Example 2: Two observers watch Person A interact with Person B. Observer 1 only watches Person A. Observer 2 watches both Person A and B. Observer 1 rated Person A as being friendlier and more engaging, while Observer 2 rated both parties' friendliness equally.

To fully understand the pervasiveness of camera perspective bias, it is important to understand the several psychological and perceptual processes that may underlie it.

2. Illusory Causation

Camera perspective bias is one form of a more general phenomenon called “illusory causation.”⁵⁰ Illusory causation is the tendency for individuals to erroneously attribute causality to objects that capture visual attention or are most prominent in the visual field.⁵¹

Illusory causation affects an individual's causal attributions during social interactions.⁵² The general principle of illusory causation relates to

where the officer has probable cause to believe that the suspect poses a significant threat of physical harm to the officer or the community).

⁴⁹ Leslie Z. McArthur, *Illusory Causation and Illusory Correlation: Two Epistemological Accounts*, 6 PERSONALITY SOC. PSYCH. BULL. 507, 511–14 (1980) (discussing the results of a study in which subjects watched a videotaped mock trial and the salience of the defendant and the lawyers was changed by altering how long each appeared on screen). *But see* discussion *infra* note 51 (finding no differences).

⁵⁰ Lezlee J. Ware et al., *Camera Perspective Bias in Videotaped Confessions: Evidence that Visual Attention Is a Mediator*, 14 J. EXPERIMENTAL PSYCH. 192, 192–93 (2008) (citing results from a study, *see* Lassiter & Irvine, *supra* note 25, demonstrating that camera perspective bias, like illusory causation, also influences audience judgment of a suspect's guilt).

⁵¹ *See* Jones et al., *supra* note 8, at 726 (“[The] illusory causation effect . . . shows that people perceive stimuli that are salient in their visual fields as being more causal than less visually salient stimuli.” (citation omitted)); Sara Landström et al., *The Camera Perspective Bias: A Case Study*, 4 J. INVEST. PSYCH. OFFENDER PROFILING 199, 200 (2007) (defining “Camera perspective bias” as “assigning unjustifiable causality to a stimulus simply because it is more prominent or salient than other stimuli”).

⁵² Lassiter et al., *supra* note 21, at 304.

attribution theory, which focuses on how people utilize information to reach causal inferences in their environment.⁵³ In one study, observers viewed a casual, two-person conversation and rated each interactant in terms of the amount of causal influence he or she exerted during the exchange.⁵⁴ The first group of viewers faced one participant in the conversation, the second group faced the other, and the control group simultaneously viewed both participants.⁵⁵ Initially, viewers received instructions asking them to give their general impressions of the casual conversation they had observed.⁵⁶ Next, participants rated each person's friendliness, talkativeness, and nervousness and the extent to which they believed that person's behavior resulted from dispositional qualities.⁵⁷ Finally, participants rated the extent to which each person set the conversation's tone.⁵⁸

Results indicated that viewers facing an interactant rated that person's causality higher than the other interactant, likely due to the other person being less salient.⁵⁹ That is, viewers who saw one interactant and not the other viewed the influence the visible interactant had on the conversation as greater than the less salient individual's influence.

Similarly, illusory causation explains how camera perspective bias alters judgments of the voluntariness of confessions. The more prominent the suspect in the visual field, research suggests, the more likely viewers are to attribute causal agency to the suspect.⁶⁰ Thus, viewers will likely perceive the suspect's confession to be voluntary.⁶¹ As a result,

⁵³ Shelley E. Taylor & Susan T. Fiske, *Point of View and Perceptions of Causality*, 32 J. PERSONALITY & SOC. PSYCH. 439, 439 (1975). "Causal inference" refers to the process by which a perceiver adopts a possible explanation for an event. Lassiter et al., *supra* note 26, at 267. See also Lassiter et al., *supra* note 39, at 239 (describing Gilbert's three-stage model of social inference as an underlying basis for the researchers' prediction of the results of their study).

⁵⁴ Taylor & Fiske, *supra* note 53, at 440–41. Example 2 is derived from the Taylor & Fiske study.

⁵⁵ *Id.* at 440.

⁵⁶ *Id.* at 441.

⁵⁷ Participants rated on a nine-point scale the extent to which they believed the interactants' behavior was caused by their disposition and the situation. *Id.*

⁵⁸ Taylor & Fiske, *supra* note 53, at 441.

⁵⁹ *Id.* at 442 ("Control subjects who had equal access to both [subjects] viewed [them] approximately equally in all causal terms. . .").

⁶⁰ This relationship is demonstrated by Lassiter's early studies on camera perspective bias. See Lassiter & Irvine, *supra* note 25, at 272. See also Lassiter et al., *supra* note 21 (illusory causation can result in judgments of blame).

⁶¹ *Id.* at 268 (suggesting that by viewing the suspect and their confession as more voluntary, the viewer is less likely to perceive the coercive pressure from the interrogator caused the confession).

researchers hypothesize that salience, attention, and other cognitive processes cause illusory causation.⁶²

3. Salience

Salience describes the prominence of certain stimuli in the visual field.⁶³ Several studies replicating the early Lassiter study found that varying the distance between the camera and the subject, interrogator, or suspect affected the resulting judgment of voluntariness.⁶⁴

Some researchers suggest that variances in salience can affect how viewers perceive a subject's overall composure.⁶⁵ In one study, researchers asked mock jurors to watch the videotaped testimonies of children and to rate their perceptions of the child's statement, appearance, and veracity.⁶⁶ Among the recordings, the camera angle varied in both distance and focus; some recordings focused only on the child, some only on the interviewer, and some showed both.⁶⁷ Observers who rated the child's appearance in a long-shot condition tended to describe the child as more relaxed and natural compared to other conditions.⁶⁸ Contrarily, observers of the close-up-shot condition viewed the children more critically.⁶⁹ While the more critical attitude did not translate into differences in the "global veracity assessments made," the researchers noted that this may have real-

⁶² See generally Lassiter et al., *supra* note 21, at 299 (citations omitted) (referencing numerous psychological researchers dating back as far as the 1930s) ("Illusory causation occurs when people ascribe unwarranted causality to a stimulus because it is more noticeable or salient than other available stimuli.").

⁶³ Causation is intuitively attributed to the person or object in one's visual field. Shelley E. Taylor et al., *The Generalizability of Salience Effects*, 37 J. PERSONALITY & SOC. PSYCH. 357, 357 (1979).

⁶⁴ Landström et al., *supra* note 51, at 200 (discussing conclusions from different studies) ("The main findings from this line of research are that observers watching a confession with the camera focused on the 'suspect-only' (versus 'suspect/interrogator' focus) perceive it as more voluntary and reliable." (citation omitted)).

⁶⁵ Sara Landström & Pär Anders Granhag, *Children's Truthful and Deceptive Testimonies: How Camera Perspective Affects Adult Observers' Perception and Assessment*, 14 PSYCH. CRIME & L. 381, 390 (2008) (concluding that the camera angle at which adults observe children's appearance and demeanor can affect their perception of the children).

⁶⁶ *Id.* at 384, 387.

⁶⁷ The experimenters used three camera perspectives: the "close-up/child only," the "medium shot/child and interviewer," and the "long shot/child and interviewer." *Id.* at 384 (internal citation and quotation marks omitted).

⁶⁸ *Id.* at 388 ("[O]bservers in the 'long shot/both' condition rated the children as significantly more Natural and Relaxed than did the observers in the other conditions.").

⁶⁹ Landström & Granhag, *supra* note 65, at 388 ("[O]bservers in the 'close-up/child only' condition made significantly higher ratings for *Thinking hard* than did the observers in the other three conditions.").

life implications.⁷⁰ Thus, the more salient the suspect is in any video footage, the more critically an observing juror may view that suspect, which, in turn, may lead to the observer perceiving a confession as more voluntary.

Other studies indicate that more salient visual information is both more readily available and more memorable for the viewer. Researchers replicated the study in which observers watched a casual conversation between two participants.⁷¹ This time, the researchers altered the salience of the visual stimuli.⁷² First, researchers changed some environmental effects, like lighting and movement, to increase the saliency of the subjects.⁷³ Additionally, they asked participants to rate their own dispositions and to note whom they attended to more during the conversation.⁷⁴ The researchers found that participants noticed salient features more often than not, likely due to the fact that those features were more readily available to the participants.⁷⁵ Participants' questionnaires demonstrated that the memorability of the features assisted their ability to recall them.⁷⁶

Therefore, these studies suggest that visual information that is most salient—that is, most easily perceived in the visual field—affects how viewers understand the conversation they are observing.⁷⁷

⁷⁰ *Id.* at 393. It is important to note, however, that this study focused exclusively on perception of child's testimony which may or may not be applicable to the BWC context.

⁷¹ See Taylor & Fiske, *supra* note 53, at 440 (original study); Taylor et al., *supra* note 63, at 359 (replicated study).

⁷² See Taylor et al., *supra* note 63, at 359 (instructing half of the subjects to "engulf[] their visual attention" on one of the interactants and the other half to do the same for the other interactant).

⁷³ The changes in stimuli included changing colors of slides, readjusting the volume of the tape recordings, and bombarding subjects with intentionally over-stimulating audiovisual stimuli. *Id.*

⁷⁴ *Id.*

⁷⁵ *Id.* In this context, I generally mean how visually obvious or unambiguous the features are.

⁷⁶ Taylor et al., *supra* note 63, at 366.

⁷⁷ See *id.* at 366–67 (discussing results in the context of bias) ("[T]he fact that salience effects occurred even when subjects had taken in virtually none of the verbal information exchanged in the scenario indicates that a very low degree of verbal attention can still produce biased attributions of causality to a visually salient person. . . . [W]e conclude that salience effects do generalize more engrossing and involving situations. . . . The fact that salience effects continue to emerge in interesting, involving, and arousing conditions also makes more plausible the argument that salience may mediate consequential social perceptions.").

4. Attention

Visual attention is the cognitive process that determines the selection of important information in the environment.⁷⁸ Visual attention is measurable in several ways, such as by tracking eye movements.⁷⁹ Researchers hypothesize that many biases result from visual attention and salience.⁸⁰ For example, researchers suggest that visual attention affects camera perspective bias:⁸¹

Example 3: Person A and Person B stand in a room. Observer A is instructed to watch Person A and Observer B is instructed to watch both Person A and Person B. Observer A then rated Person A more adversely (less favorably) than Person B. Observer B rated both parties equally.

As applied to the interrogation footage context, the underlying idea suggests that whichever individual—detective or suspect—is more salient by virtue of camera perspective presumably captures more of the viewer’s attention, which can result in biased evaluations.⁸²

Indeed, visual attention has been considered a critical cognitive process that occasions the camera perspective bias.⁸³ In one study, viewers observed a videotaped confession with altered visual content.⁸⁴ The alteration occurred naturally by varying the camera perspective and resulted in a finding that camera-angle variance can bring about biases.⁸⁵ This

⁷⁸ See generally Kwangbai Park & Jimin Pyo, *An Explanation for Camera Perspective Bias in Voluntariness Judgment for Video-Recorded Confession: Suggestion of Cognitive Frame*, 36 L. & HUM. BEHAV. 184, 185 (2011) (“[V]isual attention is the critical mediator to produce the camera perspective bias.”).

⁷⁹ E.g., Ware et al., *supra* note 50, at 192–94 (citing J.L. ANDREASSI, *PSYCHOPHYSIOLOGY* (4th ed. 2000); and R.M. STERN ET AL., *PSYCHOPHYSIOLOGICAL RECORDING* (2nd ed. 2001)) (“[S]hifts in visual attention were assessed using eye tracking. The specific technique employed was electrooculography . . . As the eyes move, EOG records electrical potential changes by means of electrodes placed on adjacent tissue, which are then used to determine the direction and duration of an observer’s eye fixations.”).

⁸⁰ *Id.* at 192 (citing Lassiter et al., *supra* note 26; and Taylor & Fiske, *supra* note 53) (“Psychological science has shown that as the visual conspicuousness of a person increases, he or she may be incorrectly perceived to have a more causal role in an outcome simply because his or her actions are more salient to observers.”).

⁸¹ See *id.* at 193 (summarizing results of Lassiter et al., *supra* note 21).

⁸² Lassiter & Irvine, *supra* note 25, at 269 (presuming that the camera will capture more of the viewer’s attention, which in turn results in biased evaluations).

⁸³ Ware et al., *supra* note 50, at 193.

⁸⁴ *Id.* at 194.

⁸⁵ Since camera angle influences the subject of the viewer’s visual attention, it can be inferred that camera angle variance contributes to these biases. See *id.* (discussing conclusions)

study group replicated the original Lassiter studies, in which participants viewed an interrogation with either a suspect-focus⁸⁶ or detective-focus⁸⁷ and then rated their perceptions of voluntariness.⁸⁸ The researchers measured visual attention by using electrooculography.⁸⁹ In another study group, participants also viewed an interrogation, but the camera's perspective of the interrogation put the suspect and the detective on the far left and far right of the screen, respectively.⁹⁰ In this group, the researchers assigned each participant to one of the following four focus-instruction conditions: (1) attend-to-suspect condition; (2) attend-to-detective condition; (3) attend-to-both conditions; and (4) no-instruction control condition.⁹¹

The researchers found that participants who received the attend-to-suspect-focus instructions unsurprisingly paid more visual attention to the suspect and less to the detective; the inverse was true for participants who received the attend-to-detective instructions.⁹² Participants who received attend-to-both instructions, as well as participants in the no-instruction control group, allocated their attention equally between both targets.⁹³ Further, researchers found that visual attention contributed to camera perspective bias because a majority of the attend-to-detective participants rated the interrogation as coercive.⁹⁴

The results from the first study group, however, indicate that visual attention alone does not account for the entire effect of camera perspective

("As a whole the results of these experiments provide the strongest evidence to date that visual attention is indeed a mediator of the camera perspective bias.").

⁸⁶ *Id.* at 193–94 (emulating Lassiter et al., *supra* note 21) ("[I]n a suspect-focus videotaped confession the front of the suspect and part of the back of the detective is visible.").

⁸⁷ Ware et al., *supra* note 50, at 193–94 (indicating that in a detective-focus videotaped confession the front of the detective and part of the back of the suspect is visible).

⁸⁸ *Id.* at 195 (noting that the questions asked participants to rate on a nine-point scale the voluntariness, coercion, and trickery that took place in the interview).

⁸⁹ *Id.* at 193–94 (indicating that electrooculography records electrical potential changes by means of electrodes placed on adjacent tissue to determine the direction and duration of the observers' eye fixations).

⁹⁰ Here, meaning that the equal-focus confession was the only version included. *Id.* at 197.

⁹¹ See Ware et al., *supra* note 50, at 197 (noting that aside from these instructions, the experiment followed the aforementioned procedure identically). Example 3 is derived from the Ware et al. study.

⁹² See *id.* (summarizing results).

⁹³ *Id.* ("[D]uration of fixation on the suspect . . . and on duration of fixation on the detective . . . were both significant.").

⁹⁴ The researchers recognized that the findings of their experiments, when read together, "at least tentative[ly] support . . . the argument that visual content does contribute to the camera perspective bias in evaluations of videotaped confessions." *Id.* at 198.

on voluntariness judgments.⁹⁵ The researchers suggest that, due to the lack of variance in videotaped confession evidence, the viewer's fixed attention contributed to the resulting camera perspective bias.⁹⁶ As this Comment will later discuss, calling a viewer's attention to stimuli, often through verbal framing, serves as a possible solution to camera perspective bias.⁹⁷ Nonetheless, the researchers' study supports the conclusion that attention and salience relate to the effect of camera perspective bias.⁹⁸

Additional research studies investigated attention in videotaped confessions and sought to clarify whether cognitive framing would lead to camera perspective bias.⁹⁹ In "Experiment 1," juror-eligible adults viewed a confession.¹⁰⁰ One group viewed suspect-focus video footage, while another group viewed detective-focus footage.¹⁰¹ The experiment replicated the camera perspective bias, and the researchers concluded that the suspect-focus participants rated the confession as more voluntary than the detective-focus participants.¹⁰² In "Experiment 2," however, participants did not view any video footage. Instead, they heard the audio tracks from Experiment 1 and received instructions either to judge the voluntariness of the suspect's confession or to judge the coerciveness of the detective's interrogation.¹⁰³ Interestingly, the "cognitive framing" of each participant's listening experience produced the same biased interpretations of the voluntariness of the confession as in Experiment 1.¹⁰⁴ Finally, in "Experiment 3," the researchers asked the participants in the suspect-focus group to make coerciveness judgments and asked participants in the

⁹⁵ Ware et al., *supra* note 50, at 196.

⁹⁶ *Id.* at 199 (noting that the researchers' suggestion here relies on evidence obtained through previously conducted studies on videotaped confessions).

⁹⁷ See Park & Pyo, *supra* note 78, at 186. See also discussion *infra* Part III (describing verbal framing of video evidence).

⁹⁸ Ware et al., *supra* note 50, at 198–99 (concluding that both visual attention and salience affect camera perspective bias and discussing policy implications of such a finding).

⁹⁹ Park & Pyo, *supra* note 78, at 186 (describing experiment settings) ("The second hypothesis is that voluntariness judgment for a confession recorded on an audio tape would be higher when an observer is framed to make a voluntariness judgment than when an observer is framed to make a coerciveness judgment.").

¹⁰⁰ *Id.* at 187.

¹⁰¹ *Id.* This study did not include an equal-focus group.

¹⁰² *Id.* at 188 (rating "the likelihood of a voluntary confession in the suspect-focus video as higher than those viewing the detective-focus video").

¹⁰³ The differing instructions were the "cognitive-frame conditions." Participants asked to judge voluntariness were the "voluntariness-frame," and participants asked to judge coerciveness were the "coerciveness-frame." Park & Pyo, *supra* note 78, at 189.

¹⁰⁴ *Id.*

detective-focus group to make voluntariness judgments.¹⁰⁵ Here, the camera perspective bias disappeared in Experiment 3.¹⁰⁶

The researchers conducting Experiments 1–3 hypothesized that cognitive framing resulted in the participants forming different cognitive expectations prior to viewing the footage.¹⁰⁷ As a result, researchers concluded that cognitive framing may exacerbate or counter the effect of camera perspective in biasing viewers' interpretations of videotaped confessions.¹⁰⁸

Illusory causation, salience, and attention represent three of the most prominent explanations for why camera perspective bias occurs. Viewers make causal judgments based on visual information that is most salient and thus captures their attention.¹⁰⁹ BWCs, which attach to a police officer's shirt, capture the actions of suspects and other civilians and the state of the scene, all from the officer's point of view. Because viewers rarely see the officer in the shot, judges and jurors likely make causal judgments based largely on the people and circumstances they can see, i.e., not police officers.

Lassiter's research, for example, demonstrated that viewers who only see suspects in footage will likely rate confessions as voluntary.¹¹⁰ In the context of BWC footage, this may translate to a viewer being more likely to see a civilian's actions as voluntary or blameworthy. The civilian in BWC footage is most salient, as the individual likely fills most of the FOV. The consequence, therefore, is that jurors will easily observe the facial expressions and movements of the civilian, likely resulting in jurors forming causal judgments based only on the civilian's actions. As the

¹⁰⁵ See *id.* at 190 (explaining that the researchers used both camera focus and cognitive framing in Experiment 3, combining the variables of Experiments 1 and 2).

¹⁰⁶ *Id.* at 191 ("In this experiment, absolutely no effect of camera perspective was found on the voluntariness judgments for the video-recorded confession filmed in different camera focuses The guiltiness judgment was not different either between the two conditions in this experiment.").

¹⁰⁷ Park & Pyo, *supra* note 78, at 190 (proposing that bias should disappear when instructions given to viewers are framed to oppose the camera focus).

¹⁰⁸ See *id.* at 191–92 ("[C]amera perspective bias may occur because a particular camera focus conveys an implicit suggestion of a particular cognitive frame in which the task of viewing a video-recorded confession/interrogation is initially represented."). Park & Pyo notably qualify the study's applicability to the United States, as the experiments took place in Korea, and acknowledge potential factors (e.g., cultural) that may be relevant to understanding the psychology behind the bias. *Id.* at 191.

¹⁰⁹ Lassiter et al., *supra* note 21, at 299.

¹¹⁰ See *id.* at 304 ("[A] person's literal point of view affects how he or she initially registers, or extracts, information from an observed interaction, which in turn affects his or her judgments regarding the causal influence exerted by each interactant.").

aforementioned research suggests, this may result in jurors viewing a civilian's actions more critically than they would if they had been able to see the entire interaction.

The civilian is inherently more salient in the FOV of BWC footage. The BWC, attached to the officer's torso, records unfolding events from the POV of the officer. Because BWCs establish the civilian, other witnesses, or environmental circumstances as most salient, it follows that the viewer's attention will gravitate toward those features. Notably, the officer is not salient because they are outside the camera's view. In a hypothetical case on excessive force, in which one officer's BWC footage is the sole or potentially dispositive evidence presented at trial, it would be difficult for a jury to discern the extent of the officer's use of force based on a FOV capturing only the officer's arms. The hypothetical juror would need to critically consider what the camera does not show.

Additional research should be conducted to better understand the impact of perspective in the hypothetical context detailed above.¹¹¹ Researchers could potentially conduct a study to collect and compare viewer opinions of officer actions presented from different POVs. In such a study, one group could view an officer-civilian interaction from a BWC POV, while other groups could view the same interaction from the POV of a

¹¹¹ Results from one article that assessed the evidentiary impact of BWC video on the outcomes of excessive force cases suggests that there are meaningful advantages for defendants where the footage is complete:

The cases with bodycam evidence decided to date reveal, among other things, that . . . defendants win[] summary judgment motions in close to eighty percent of cases with complete bodycam videos but less than one-third of the cases with partial videos; . . . [BWC] evidence improves defendants' likelihood of success on summary judgment in excessive force cases only if the video is complete; . . . defendants are actually more likely to prevail on summary judgment in excessive force cases without any [BWC] evidence than in cases with a partial bodycam video; and . . . summary judgment motions are filed and adjudicated more quickly in excessive force cases with bodycam videos (especially complete videos) than cases without bodycam evidence.

Mitch Zamoff, *Assessing the Impact of Police Body Camera Evidence on the Litigation of Excessive Force Cases*, 54 GA. L. REV. 1, 7 (2019). Still, the author notes that "approximately one-third of all bodycam videos submitted in support of defense summary judgment motions in excessive force cases *do not capture the entire incident* at issue in the lawsuit. . . ." *Id.* (emphasis added). See also *id.* at 36–42 (discussing issues surrounding incomplete video evidence). The data clearly demonstrates that complete footage benefits a defendant; yet, members of law enforcement see a disproportionately high success rates in court compared with non-officer defendants. See *id.* at 40 tbl.2 ("Law enforcement defendants prevail on summary judgment nearly four out of every five times when they have the benefit of a complete bodycam record of the encounter that gave rise to the lawsuit."). The author briefly considers whether bias is a contributor to law enforcement-positive outcomes. See discussion *id.* at 18–19, 40.

witness, a surveillance camera, or other types of footage. Participants could then share their perceptions of each interactant based on factors such as aggression, voluntariness, blameworthiness, etc. A study primarily focused on these variables may yield results that provide clearer insight into the impact of video evidence perspective on the minds of jurors.

Until such measurable data exists, we can apply inferences to cases involving the alleged use of excessive force based on current, comparable research. It is reasonable to infer that, if viewers only observe an officer's BWC footage, the camera perspective will likely incline viewers to attribute more causal responsibility to the more-salient actor in view—the civilian—and less to the less-salient, out-of-view officer.

5. Memory-Based and Perceptual-Based Cognition

The dichotomy between memory-based processing and perception-based processing poses an additional challenge in understanding illusory causation.¹¹² Memory-based processes are cognitive processes through which individuals form opinions upon perceiving stimuli and retrieve relevant information from long-term memory to supplement their perceptions.¹¹³ Perception-based processes, on the other hand, involve the initial processes of “selecting, organizing, and interpreting information” by “select[ing] stimuli that pass through our perceptual filters” and “organiz[ing] [the stimuli] into our existing structures and patterns.”¹¹⁴ In regard to camera perspective bias, this dichotomy elicits questions about whether a viewer forms opinions primarily supplemented by long-term memory or whether the perceptual process is selective when interpreting information. The distinction may have implications for jurors who perceive BWC footage at trial and subsequently engage in a comprehensive analysis of the evidence to reach a verdict.

Early studies of illusory causation focused on the relationship between memory processes and salience.¹¹⁵ Some researchers believed

¹¹² See generally Susan T. Fiske et al., *Structural Models for the Mediation of Salience Effects on Attribution*, 18 J. EXPERIMENTAL PSYCH. 105, 105, 123 (1982) (seeking to determine the effects of salient stimuli and exaggerated schema relevant to recalling salient stimuli on the causal judgments one makes when perceiving such stimuli).

¹¹³ Young Mie Kim & Kelly Garrett, *On-Line and Memory-Based: Revisiting the Relationship Between Candidate Evaluation Processing Models*, 34 POL'Y BEHAV. 345, 345–46 (2012) (noting that an individual using a memory-based process can form opinions at the time of judgment).

¹¹⁴ ANDREA NIOSI, INTRODUCTION TO CONSUMER BEHAVIOR, § I.3 (2021) (ebook).

¹¹⁵ E.g., Fiske et al., *supra* note 112, at 107 (testing for recall as a mediator of salience effects). See, e.g., McArthur, *supra* note 49, at 514 (“The recall explanation for illusory

salient information to be more memorable than non-salient information, leading participants to ascribe greater causality to more salient information.¹¹⁶ Others focused on the way information is picked up *through* illusory causation, rather than on illusory causation as a mechanism that requires recall from memory.¹¹⁷

Researchers in the latter group argued that initially-perceived visual information affects the comprehension and organization of information created by the ongoing interaction, which, almost immediately thereafter, causes judgments and reactions consistent with the effects of illusory causation.¹¹⁸ In one study, participants either watched the suspect-focus or the detective-focus interrogation video.¹¹⁹ The researchers sought to measure the impact of an observer's behavior segmentation—i.e., the observer's identification of meaningful portions or segments of information within an interaction—on observer perception.¹²⁰ The rate of segmentation corresponded with the suspect-focus group's perception of the confession's voluntariness.¹²¹ Another study placed half of the participants into a group that was required to count backward aloud while watching the video to

correlation effects holds that salient actor behavior pairs are more apt to be recalled or, at least, are more available in memory than other actor-behavior pairs, which yields the perception that the salient actors and behaviors are more correlated than they really are.”).

¹¹⁶ See, e.g., Fiske et al., *supra* note 112, at 122 (describing multiple experiments in which researchers manipulated attention and measured potential mediators of its effects on judgments of causality). With respect to the Fiske et al. study, the first experiment focused on visual recall of salient stimuli. Researchers hypothesized that this might lead to prominence in causality judgments, but results showed that total visual recall had miniscule effects on causal judgments. See *id.*

¹¹⁷ *Id.* at 123. Fiske et al. notes that this academic model was used by researchers Smith and Miller in 1979, who posited “that attributions occur directly at encoding, creating memory representation that integrally includes attributions,” and that this “causal relationship” constitutes “the basis for *both* attributions and recall.” *Id.* (citing Eliot R. Smith & Frederick D. Miller, *Salience and the Cognitive Mediation of Attribution*, 37 J. PERSONALITY & SOC. PSYCH. 2240 (1979)). McArthur also favored this view. See *id.*

¹¹⁸ Fiske et al., *supra* note 112, at 123. The authors write that “two competing explanations come to mind in considering [their] results,” one being the model of attribution-based encoding that Smith, Miller, and McArthur favored. This model argues that attributions are not dependent on recall. See *id.*; McArthur, *supra* note 49, at 517.

¹¹⁹ Lassiter et al., *supra* note 21, at 301.

¹²⁰ *Id.* at 299 (describing the merits of the procedure) (“All four studies described here employed the behavior-segmentation technique developed by Newton (1973, 1976). . . . [T]he segmentation procedure has been used successfully to investigate the possible role of perceptual processing in a variety of social judgment effects.”).

¹²¹ *Id.* at 301–02, 304. It is important to note, however, that none of the four studies manipulated the segmentation rate. According to the researchers, this means that whether changes in segmentation rate were actually responsible for the observed instances of illusory causation (as the evidence suggests) is not definitely conclusive. See *id.*

create “cognitive load.”¹²² The cognitive load did not negate the effect of the camera perspective on causality judgments.¹²³ In other words, illusory causation occurred even when the observers were under cognitive load.

These results suggest that illusory causation, or assigning greater causal responsibility to the more salient object, is based in perception (immediate judgments) and not the product of (altered or misinformed) memory.¹²⁴ In other words, bias seems to occur because the camera perspective influences what is most visibly salient, and, in turn, viewers extract information from the limited perspective available.¹²⁵

Other researchers have theorized that when a perceiver pays more attention to a certain feature in the surrounding environment, the viewer has more information about that feature than those features to which less attention was paid.¹²⁶ Naturally, people attend differently to features of their social environments.¹²⁷ The perceiver also retains more information about the more salient features.¹²⁸ Further, the same research indicates that the sensory process is subconscious,¹²⁹ suggesting that an intentional framing of a video may contribute to the effect of the bias.

Because there is disagreement among researchers on whether salient information and, more broadly, illusory causation, are memory-based or perceptual-based processes, future studies should control for various conditions to isolate whether causal judgments occur during the perception of the event or after. The results could inform decisions on jury instructions or framing, as I will discuss later in this Comment.

¹²² “Cognitive load,” or better stated, “overload” refers to oversupplying the amount of working brain memory being used to decrease brain (processing) efficiency. *See id.* at 303.

¹²³ Lassiter et al., *supra* note 21, at 303–04.

¹²⁴ *Id.* at 304.

¹²⁵ *See* Boivin et al., *supra* note 11, at 129 (citing Lassiter et al., *supra* note 26).

¹²⁶ Taylor & Fiske, *supra* note 53, at 439–40, 445.

¹²⁷ *Id.* at 442. Researchers examined the information recalled about each interactant in order to see if differential retention of information mediated POV effects. Their analysis of the study data suggested that it did not. *See id.*

¹²⁸ *Id.* at 445 (“Where one’s attention is directed in one’s environment influences what information is perceptually salient. Perceptually salient information is subsequently overrepresented when one imputes social or causal meaning to one’s perceptual experience.”).

¹²⁹ *See id.* (“[A] perceiver, even a highly sophisticated adult perceiver, is to some extent bound by the literal nature of the sensory experience he seeks to transcend when he is interpreting the environment of which he is a part.”). *See also* Taylor et al., *supra* note 63, at 367 (arguing that the responses are unintentional or unlearned, and occur automatically due to stimulus qualities).

6. Self-Imagery

Viewers of first-person POV footage comprehend unfolding events from the perspective of the person with the camera.¹³⁰ Cinematographers regularly use over-the-shoulder (OTS) and POV shots to give a viewer the sense of being in the scene.¹³¹ This promotes a feeling of identity with the character with whom they share a perspective.¹³² In psychology, the phenomenon through which viewers identify with the first-person perspective (in this discussion, the viewers identify with the person holding the camera) is frequently described as “self”-imagery.¹³³

Lassiter and others have theorized that imagery—the cognitive process of picturing an image in one’s head¹³⁴—is an underlying mechanism that contributes to the higher ratings of voluntariness of confessions.¹³⁵ In one study that expanded upon Lassiter’s earlier experiments, researchers showed participants an image of an alleged sexual assault victim before they watched either a suspect-focus or detective-focus version of a videotaped confession.¹³⁶ The researchers divided the participants into two groups: a conceptual interference group and a perceptual interference group.¹³⁷ Researchers asked the conceptual interference group to complete a cognitive task—to recite an eight-digit number—while they watched the

¹³⁰ See generally Edward Branigan, *Formal Permutations of the Point-of-View Shot*, 16 SCREEN 54, 55 (1975) (“The POV shot is a shot in which the camera assumes the position of a subject in order to show us what the subject sees.”).

¹³¹ *Id.* at 58–59. See, e.g., MERCADO, *supra* note 2, at 61 (explaining how OTS shots exaggerate distance).

¹³² Branigan, *supra* note 130, at 63 (“The sustained viewpoint of the continuing POV tends to implicate the viewer in the experience or fate of the character.”).

¹³³ See Gurjog Bagri & Gregory V. Jones, *The Role of First-Person Perspective and Vivid Imagery in Memory for Written Narratives*, 34 EDUC. PSYCH. IN PRAC. 229, 231, 239 (2018); Kai Vogeley & Albert Newen, *Mirror Neurons and the Self-Construct*, in MIRROR NEURONS AND THE EVOLUTION OF BRAIN AND LANGUAGE 135–38 (Maksim I. Stamenov & Vittorio Gallese eds., 2002); Thomas S. Duval & Paul J. Silvia, *Self-Awareness, Probability of Improvement, and the Self-Serving Bias*, 82 J. PERSONALITY SOC. PSYCH. 49, 50 (2002) (“People spontaneously strive to understand the world by making attributions for events. Attributional processes are influenced by motivational principles. Rather than randomly attributing events to any possible cause, people instead prefer to connect effect events to a plausible cause.” (citation omitted)).

¹³⁴ Jennifer J. Ratcliff et al., *Camera Perspective Bias in Videotaped Confessions: Experimental Evidence of its Perceptual Basis*, 12 J. EXPERIMENTAL PSYCH. 197, 198 (2006) (“[V]isual mental imagery occurs when a visual short-term memory representation exists but the stimulus is no longer physically present, an experience often described as ‘seeing with the mind’s eye.’”).

¹³⁵ *Id.* at 197–98, 200.

¹³⁶ *Id.* at 198.

¹³⁷ *Id.*

confession.¹³⁸ In the perceptual interference group, the researchers told the participants to visualize the crime victim, as seen earlier in the photo, during the interrogation.¹³⁹

The researchers found that participants in the conceptual interference group, who watched the interrogation from a suspect-focus POV, were more likely to judge the confession as voluntary.¹⁴⁰ This result surprised the researchers because they expected the participants in the perceptual interference group, imagining the victim in their heads, to view the suspect more negatively, thereby motivating them to judge his incriminating statements to be particularly voluntary.¹⁴¹ The opposite happened.¹⁴² The researchers deduced that this may have been, in part, because “the perceptual processing responsible for the typical divergence in judgments associated with different camera perspectives was disrupted, [so] the divergence in judgments would also be diminished.”¹⁴³

While the purpose of the study was to test the difference between cognitive and perceptual processes during an interrogation,¹⁴⁴ the conclusion related to the observer’s emotions and subsequent judgments could be generalizable to the idea of self-imagery. If observers—say, a jury watching footage of the interrogation—view a suspect in a negative light due to personal, cultural, or other biases related to self, then they might draw conclusions “not based on fact and to the disadvantage of the suspect-defendant.

The concept of self-imagery has been more reliably researched in other disciplines. Education researchers, for example, have found that techniques by which students enable visualization and first-person

¹³⁸ Ratcliff et al., *supra* note 135, at 198–99 (“This number rehearsal task is a frequently used technique designed to strain or disrupt higher order thought processes . . . that importantly has been shown not to activate early visual cortex. . . . Therefore, it serves as a reasonable comparison by which to evaluate any effect of the imagery task on evaluations of the videotaped confession.”).

¹³⁹ *Id.* at 198.

¹⁴⁰ *See id.* at 200 (summarizing results).

¹⁴¹ *Id.* at 202 (“The act of holding the image of the purported rape victim in mind could arguably have had a direct, rather than a perceptually mediated, effect on participants’ judgments of the suspect and his confession. For example, visualizing the victim could have led participants to empathize with, or derogate, the victim and therefore correspondingly react more harshly, or leniently, toward the suspect.”).

¹⁴² *See* Ratcliff et al., *supra* note 135, at 202 (“[P]erceptual interference participants were relatively less harsh toward the suspect (compared with conceptual interference or control participants) when they viewed the suspect-focus version of the confession but were relatively less lenient when they viewed the detective-focus version.”).

¹⁴³ *Id.* at 202–03.

¹⁴⁴ *Id.* at 198.

perspective improve memory and reading comprehension.¹⁴⁵ In particular, research shows that a student who reads a story written from a first-person perspective is more likely to identify the characters' feelings, goals, and needs, which may lead to better reading comprehension and recollection.¹⁴⁶ A viewer may, therefore, have improved memory and recall of an event seen in a video recorded from a first-person perspective. The viewer may also identify more with the camera holder's feelings, goals, and motivations.

Applying the research to this discussion; when people view footage shot from a first-person perspective, they identify with the person from whose perspective they perceive the footage.¹⁴⁷ When that person attempts a task or assumes a role, the first-person perspective may encourage viewers to take on that role, known as an "agency" role.¹⁴⁸ Viewers in an "agency role" feel the responsibility and determination to fulfill that role.¹⁴⁹ Regarding Lassiter's studies, this may mean that the condition group who viewed the confession from the perspective of the interviewer subconsciously identified with the goals and objectives of that interviewer.¹⁵⁰ Relatedly, due to self-serving bias, we often attribute positive events and successes to our own character or actions and blame negative results on external factors.¹⁵¹

The concept of self-imagery could have implications for jurors who view BWC footage. Jurors see the footage from the officer's perspective and may subconsciously feel as though they are acting as the officer. This could lead to more generous judgments of an officer's actions. For example, a juror might believe an officer was justified in using force to accomplish a goal that resonates with the juror who "takes on" the goals of the officer. Future research should aim to determine whether a viewer of BWC footage frequently takes on the first-person perspective of the

¹⁴⁵ Bagri & Jones, *supra* note 133, 232 (discussing various research revealing how this visualization strategy resulted in improved comprehension for children, as well as disabled adolescents).

¹⁴⁶ *Id.* at 231–32, 239.

¹⁴⁷ Branigan, *supra* note 130, at 63.

¹⁴⁸ See Vogeley & Newen, *supra* note 133, at 138–47.

¹⁴⁹ *Id.* at 138.

¹⁵⁰ See Lassiter et al., *supra* note 26, at 274 (explaining the results of the detective-focus study group by reasoning that point of view bias led the viewers to perceive the confession as less voluntary, likely because they took on the role of the suspect); Lassiter et al., *supra* note 21, at 301 (reasoning the same under different study conditions and variables).

¹⁵¹ Duval & Silvia, *supra* note 133, at 49 ("The self-serving attributional bias—attributing success internally and failure externally—appears for many psychologists to have achieved the status of an empirical fact.").

officer and, therefore, feels agency or resolves to complete the tasks of the officer. If researchers find support for this, it could have vast implications for the efficacy of using the first-person perspective of law enforcement footage. If viewers of BWC footage subconsciously feel as though they are the officer, self-serving bias may cause them to attribute erroneous causality to negative events or, conversely, to consider positive events as a job well done by the officer.

B. The Effect of Movement and Motion Blur

Another quality of BWCs that can influence perception is movement. This includes both the movement of persons or objects seen in the video and the movement of the camera itself. Unlike fixed surveillance cameras or dashboard cameras, BWCs move around, more like hand-held devices, due to the movement of the officer on whom the camera is mounted.¹⁵² These movements may be especially sudden and erratic when the officer engages in an unfolding hands-on encounter with another person. The movement of the camera, the person holding the camera, and the subjects being recorded can all cause distortions in the resulting video. Particularly rapid movement can cause the image to appear blurred.¹⁵³ Even without motion blur, fast movements by the person holding the camera and/or the person being recorded can cause confusion for the viewer.

Foundational research on the psychophysics of the human eye explains why humans have a limited ability to view and understand objects in motion.¹⁵⁴ The process of “seeing” is as follows: light passes through the cornea, the lens focuses the light on the retina, photoreceptor cells turn light into electrical signals, and finally, the optic nerve carries electrical signals to the brain, which converts the signals into images.¹⁵⁵ When images move faster than the speed at which our eyes generally can transmit the light to our brain, we may not consciously register those images.¹⁵⁶

¹⁵² See Miranda, *supra* note 13, at 21, 23 (discussing how the BWC’s placement can inherently result in problems related to the officer’s bodily movements).

¹⁵³ Navarro et al., *supra* note 23, at 3. See also *supra* notes 10–11 and accompanying text (discussing motion blur in the context of filmmaking).

¹⁵⁴ Mary C. Potter et al., *Detecting Meaning in RSVP at 13 ms per Picture*, 76 *ATTEN., PERCEPT., & PSYCHOPHYS.* 270, 270 (2014) (describing limitations) (“Our eyes move to take in new information three or four times a second, and our understanding of the visual input seems to keep pace with this information flow . . .”).

¹⁵⁵ *Id.* at 271; *How the Eyes Work*, NAT’L EYE INST. (Apr. 20, 2022), <https://www.nei.nih.gov/learn-about-eye-health/healthy-vision/how-eyes-work>.

¹⁵⁶ Potter et al., *supra* note 154, at 271 (describing this scenario) (“It has been estimated that reentrant loops connecting several levels in the visual system would take at least 50 ms to

Motion blur is the name of the phenomenon that occurs when video images appear blurry due, in part, to the rapid motion of their subject.¹⁵⁷ Motion blur manifests as a visible trail along the trajectory of the object; it results from the combination of relative motion and light integration taking place in the recording device.¹⁵⁸ Motion blur in video generally occurs in two ways: (1) when the objects move faster than the shutter speed of the camera, which blurs the actual video; and (2) when the objects move faster than the observer can visually process.¹⁵⁹ When the hasty movement of the cameraperson or the subject(s) blurs objects in video footage,¹⁶⁰ it becomes challenging for a viewer to discern what occurred in that footage.

Cinematographers and computer-graphic designers leverage the limits of the human eye's ability to process objects in motion to create a sense of urgency or haste in films.¹⁶¹ Filmography techniques that manipulate movement can include rapid movement of the cameraperson and/or the actors (which may result in motion blur or fuzzy imagery) and the use of wide-angle lenses that seem to accelerate movement (relying on speed bias, which makes actors appear to move more quickly than they actually do).¹⁶² Camera movement can augment or diminish the speed distortions caused by lenses and editing.¹⁶³

Computer graphics researchers have also extensively studied motion perception with the aim of creating computer games and experiences in which characters quickly move from scene to scene to create a sense of excitement, urgency, or haste for the player.¹⁶⁴ Some of these researchers

make a round trip Thus, when people view stimuli for 50 ms or less with backward pattern masking . . . the observer may have too little time . . . before earlier stages of processing are interrupted by the subsequent mask." (citation omitted)); Duyck et al., *Motion Masking by Stationary Objects: A Study of Simulated Saccades*, *I-PERCEPTION*, May–June 2018, at 1–2.

¹⁵⁷ Navarro et al., *supra* note 23, at 3.

¹⁵⁸ *Id.* ("Motion blur . . . is the result of the combination of relative motion and light integration taking place in film and electronic cameras.").

¹⁵⁹ *See id.* at 4, 10 ("The resulting interactions between light, diaphragm, shutter exposed media, and object motion produce motion blur.").

¹⁶⁰ *Id.* at 3.

¹⁶¹ *E.g.*, MERCADO, *supra* note 2, at 93 (discussing film director Richard Eyre's use of this phenomenon to "reflect a character's haste during a pivotal scene").

¹⁶² These techniques can create "a multitude of dynamic variations that can support complex narrative meanings." *See id.* at 83. For example, in Christopher Nolan's film, *BATMAN BEGINS* (Warner Bros. Pictures 2005), a combination of film techniques creates a feeling of suspense as Batman races to retrieve an antidote that will save his love interest, who has taken a hallucinogenic toxin. *Id.*

¹⁶³ *Id.*

¹⁶⁴ *E.g.*, Paolo Burelli, *Game Cinematography: From Camera Control to Player Emotions*, in *EMOTION IN GAMES* 4, 10–12 (Kostas Karpouzis & Georgios N. Yannakakis eds.,

have also attempted to discover ways to reduce the motion biases that occur in virtual reality goggles—which can cause motion-sickness-like symptoms—to create a more stable viewing experience for wearers.¹⁶⁵ So, the motion blur effect can be desirable in some situations, like those in which video game software engineers intend for a character's rapid motion to evoke a particular feeling, but it can cause unpleasant sensations for some who interact with the software.

The perception of motion in footage can also influence cognitive interpretations of what the viewer sees. Psychology researchers have identified several causal impressions that occur when people observe visual stimuli in motion.¹⁶⁶ When viewers see objects in motion interacting with each other, they intuitively draw causal inferences about the relationship between the objects.¹⁶⁷ One such impression is the “traction effect”: the impression that an object in motion appears to pull or tow another behind.¹⁶⁸ In one study, observers viewed computer-generated shapes (five opaque rectangles) which began to move at constant speeds.¹⁶⁹ The rectangular shapes never touched and did not move as a result of any other shape in the visual field.¹⁷⁰ Subjects reported a strong impression that the top object was pulling the others, despite the fact that the objects never came into contact with one another.¹⁷¹

While this study involved computer-generated shapes, researchers have discussed implications for the nonvirtual world.¹⁷² Phenomenal

2016); Jenny C.A. Read & Iwo Bohr, *User Experience While Viewing Stereoscopic 3D Television*, 57 *ERGONOMICS* 1140, 1150 (2014).

¹⁶⁵ See articles cited *supra* note 164.

¹⁶⁶ Peter A. White & Alan Milne, *Phenomenal Causality: Impressions of Pulling In the Visual Perception of Objects in Motion*, 110 *AM. J. PSYCH.* 573, 573 (Winter 1997) (detailing author-researcher Albert Michotte's prior extensive study of phenomenal causality).

¹⁶⁷ See *id.* (explaining the phenomenon by example in which subjects watched computer-generated images of rectangles move at quick, constant speeds) (“[Subjects reported a] strong impression that the top [rectangle] was pulling the others, despite the fact that the objects never came into contact or approached each other, moved in different planes, and had no visible connection.”).

¹⁶⁸ *Id.* at 574, 576 (explaining the phenomenon and the purpose of their study—to explore the three important variables of the pulling effect: speed of motion, distance between the two when both are moving, and reversal or nonreversal of direction of motion).

¹⁶⁹ *Id.* at 573.

¹⁷⁰ White & Milne, *supra* note 166, at 573.

¹⁷¹ *Id.*

¹⁷² *Id.* at 598. White and Milne explain why this phenomenon may be unique to the human mind as a result of technological advances:

[I]t seems unlikely that the pulling impression could be attributed to an inborn visual mechanism. Such a mechanism would have to develop on an evolutionary time scale, but whereas the human-made world is full of things that pull other things via

causality—the subjective impression of causal relations in the perception of visual stimuli—may make objects appear to push and pull each other, when in fact, they do not.¹⁷³ Later studies have suggested that phenomenal causality is a result of difficulty estimating speed, in addition to the overall difficulty of estimating objective movement.¹⁷⁴ These studies, however, do not directly address phenomenal causality when viewing two people in motion, as may be the case in BWC footage.

Cognitive psychologists have identified several biases that impact the uptake of visual information, including speed bias and the aforementioned traction effect. “Speed bias” acknowledges that humans are notably inept at estimating the actual speed of objects in motion.¹⁷⁵ In one experiment testing speed bias, researchers showed participants short clips portraying real-life events of people in motion.¹⁷⁶ The researchers randomly set each video to play either faster or slower than the speed at which it was actually recorded.¹⁷⁷ They asked participants to adjust the clip to the “natural speed.”¹⁷⁸ Participants showed a tendency toward speed underestimation; that is, they selected a “natural speed” for the videos, which was far faster than the actual speed.¹⁷⁹ When researchers introduced auditory manipulations, the participants still struggled to accurately adjust the speed, suggesting that audio cues do little to alleviate speed bias.¹⁸⁰

Psychologists and scholars should further research the perception of motion and speed bias in video. Jurors and judges would benefit from being more informed on the complications of viewing BWC footage because several challenges can arise when observers view motion in BWC

connecting links, the world of nature is not . . . Human hands also pull things by direct manipulation and this has presumably been the case throughout our evolutionary history. There might be good adaptive reasons for developing innate mechanisms for perceiving various kinds of manual manipulation of objects, perhaps including pushing, pulling, grasping, and lifting.

Id.

¹⁷³ *Id.* at 593, 600 (describing the link between phenomenal causality and the pulling effect).

¹⁷⁴ See Federica Rossi et al., *Speed Biases with Real-Life Video Clips*, 12 FRONT. INTEGR. NEUROSCI., no. 11, 2018, at 1, 14 (studying how stimulus-specific errors in estimating speed provide support for visual biases more generally).

¹⁷⁵ *Id.* at 1 (explaining how humans can be easily fooled by video and often generate a wrong or biased impression of speed).

¹⁷⁶ *Id.* at 3 (clips displaying waves at the seashore, people jumping, dribbling a soccer ball, and a first-person perspective of a walk down a crowded street).

¹⁷⁷ Researchers “randomized initial speed,” and observers never saw the video at original speed. *Id.*

¹⁷⁸ Rossi et al., *supra* note 174, at 3.

¹⁷⁹ See *id.* at 6.

¹⁸⁰ *Id.* at 9.

footage. First, any quick motion of the BWC, the officer, or a civilian on camera can cause motion blur or generally fuzzy footage. As motion or speed increases and the images become fuzzy or blurry, the general perception and accuracy of viewing decreases.¹⁸¹ This can be confusing to view and can make it difficult to determine what exactly occurred. In addition, the motion blur effect could cause jurors to misjudge the movement of a civilian when it appears the motion was more rapid than it actually was. The motion can also cause jurors to feel a sense of haste or urgency when they watch the footage, similar to the sense of urgency intentionally crafted in computer games or movies.¹⁸² This may lead a juror to perceive the situation as more contentious than it actually was and could have implications in a use-of-force case because a juror may misjudge the officer's force as either reasonable or excessive.¹⁸³

Additionally, the traction effect in video combined with speed bias has implications for BWC footage evidence. If the officer and civilian move in the same direction, a viewer may mistakenly believe that they are pushing or pulling each other when in fact, they are moving independently.¹⁸⁴ Jurors who see a civilian physically interact with an officer are much more likely to decide that the officer's use of force was reasonable.¹⁸⁵ Due to speed bias, a juror may overestimate the speed of the civilian's motion or perceive a sense of uneasiness or haste, which could lead to a judgment that the civilian acted erratically or moved quickly and, therefore, that the officer's actions were justified regardless of what actually happened. Further, research suggests that when viewers watch confusing visual information, they may explain inconsistencies with already

¹⁸¹ See Navarro et al., *supra* note 23, at 3.

¹⁸² See, e.g., MERCADO, *supra* note 2, at 83, 93 (discussing purposely generated urgency and haste in cinema); Burelli, *supra* note 164, at 4, 10–12 (discussing purposely generated urgency and haste in video games).

¹⁸³ See generally Morgan A. Birck, *Do You See What I See? Problems with Juror Bias in Viewing Body-Camera Video Evidence*, 24 MICH. J. RACE & L. 153, 165–66 (2018) (“Images, more than text, are more closely correlated with emotion. If police video can heighten the sense of danger to the officer, a juror may view the video with a heightened sense of their own danger, and thus place a thumb on the scale in favor of the officer.”).

¹⁸⁴ See White & Milne, *supra* note 166, at 573, 598 (discussing the pulling effect generally and how humans subconsciously interpret motion in the human world through this phenomenal causality effect).

¹⁸⁵ Jurors tend to have the preconceived belief that “police officers are under constant threat of attack.” See generally John P. Gross, *Judge, Jury and Executioner: The Excessive Use of Deadly Force by Police Officers*, 21 TEX. J. ON C.L. & C.R. 155, 170. Coupled with the camera perspective bias discussed previously, this belief causes jurors to be more likely to attribute a greater amount of cause to the salient civilian.

available cognitive information.¹⁸⁶ This may include other biases (e.g., confirmation or attribution) that distort the perception of reality.¹⁸⁷

C. Distortions Caused by Wide-Angle Lenses

“Objects in mirror may be closer than they appear.” Inscribed on vehicle side-view mirrors, this reminder warns drivers of visual distortions that occur due to the large field of view these mirrors provide. While designers rationalize this wide FOV as a safety feature to allow drivers to see more, the convexity of the glass distorts the image so that objects in the center of the field appear smaller and closer than they actually are.¹⁸⁸ Similarly, wide camera angles with fisheye lenses have a variety of uses in film and photography but are also commonly used in surveillance cameras and BWCs.¹⁸⁹ This wide FOV allows these cameras to record more space and potential subjects.¹⁹⁰ Yet, wide-FOV lenses also induce perceptual distortions that can bias how viewers interpret the resulting footage.¹⁹¹

By way of background, researchers have identified several underlying perceptual mechanisms that explain the occurrence of distortions

¹⁸⁶ See Rossi et al., *supra* note 174, at 13–14 (“Regardless of the precise nature of the underlying mechanism, the fact that observers can systematically misjudge the speed of real-life clips may have important consequences.”).

¹⁸⁷ *Id.* at 14. See also Kendra Cherry, *What Is the Confirmation Bias*, VERYWELL MIND (Nov. 10, 2022), <https://www.verywellmind.com/what-is-a-confirmation-bias-2795024> (defining “Confirmation bias” as “[C]ognitive bias that favors information that confirms your previously existing beliefs or biases”); Patrick Healy, *The Fundamental Attribution Error: What It Is & How to Avoid It*, HARV. BUS. SCH. (June 8, 2017), <https://online.hbs.edu/blog/post/the-fundamental-attribution-error> (defining “Attribution bias” as “an individual’s tendency to attribute another’s actions to their character or personality, while attributing their behavior to external situational factors”).

¹⁸⁸ See Michael J. Flannagan et al., *Distance Perception in Driver-Side and Passenger-side Convex Rearview Mirrors: Objects in Mirror are More Complicated Than They Appear*, 1–2 (July 1997) (unpublished report) (on file with the University of Michigan) (detailing the design of side-view car mirrors and how they distort distance and size).

¹⁸⁹ See Matthew Cook, *Body Worn Cameras as a Silver Bullet, Vol 2: Quality*, AMPED BLOG (June 24, 2015), <https://blog.ampedsoftware.com/2015/06/24/body-worn-cameras-bwcs-as-a-silver-bullet-vol-2-quality-2/> (describing the effects of wide-angle camera lenses on BWCs).

¹⁹⁰ See Fausta Fiorillo, *Testing GoPro for 3D Model Reconstruction in Narrow Spaces*, 5 ACTA IMEKO 64, 65 (2016) (“[T]he wide-angle optic is an advantage in the acquisition phase of images. Indeed, this type of lens increases the field of view and thus decreases the number of shots to carry out.”).

¹⁹¹ See *id.* (describing the distortional drawbacks of fisheye camera lenses) (“[T]he use of fisheye camera is less common for photogrammetric purposes, leading to a loss of output precision. In the present case study, the strong distortion effects are accentuated owing to the very small distances to the objects.”).

when viewing wide-angle footage. The fundamental explanation for distortions caused by a wide FOV involves the geometry and physics of the human eye.¹⁹² Relevant characteristics include the surface area of the eye, the surface area of the retina, binocular vision, and rotational ability.¹⁹³ When one views an image or footage in which the focal length has been increased beyond what the eye typically sees, the image appears distorted and dissimilar to the way humans normally see the world.¹⁹⁴ This is because the geometry of the camera lens is different than the geometry of human eyes.

The FOV characteristics of wide-angle lenses are also relevant to distortion. Wide-angle lenses typically have a FOV of between 100 and 180 degrees.¹⁹⁵ The standard model BWC has a FOV of 143 degrees.¹⁹⁶ To compare, the average human eye with normal vision has a FOV of between 60 and 90 degrees.¹⁹⁷ The BWC, therefore, produces an image that has more than double the visual field of the human eye.

To accommodate this wide FOV, the camera introduces a number of distortions relative to ordinary vision. First, the image produced is convex (non-rectilinear), in contrast to the straight line (rectilinear) manner by which the human eye sees.¹⁹⁸ Depending on the lens of a BWC, the images it produces could contain dramatic distortions such as equisolid angles (which compress certain objects) or orthographic angles (which create

¹⁹² Distortions were introduced in detail earlier in this Comment. *See generally supra* Part I, notes 2–6 and accompanying text.

¹⁹³ Helga Kolb, *Facts and Figures Concerning the Human Retina*, in *THE ORGANIZATION OF THE RETINA AND VISUAL SYSTEMS 1* (Helga Kolb et al. eds., 2005); Ali Abdulkarim et al., *Giving Definition to See-Through Phenomenon of Binocular Vision*, *OPHTHALMOLOGY TIMES* (July 25, 2018), <https://www.opthalmologytimes.com/view/giving-definition-see-through-phenomenon-binocular-vision> (“Binocular vision is experienced whenever one is looking at a distance with a close vertical object in the foreground. Individuals with binocular vision see through the object.”).

¹⁹⁴ Scott A. Kuhl et al., *HMD Calibration and Its Effects on Distance Judgments*, *ACM TRANS. APPL. PERCEPTION*, Aug. 2009, at 6 (explaining that pincushion distortion—a distortion that occurs as a result of magnification beyond what the human eye is accustomed—causes straight lines to appear curved).

¹⁹⁵ Boivin et al., *supra* note 11, at 137.

¹⁹⁶ *Id.* *See also* Axon Body 2 Product Specifications, AXON, <https://global.axon.com/products/body-2> (last visited Feb. 15, 2023) (describing specifications for cameras commonly used as police BWCs).

¹⁹⁷ Boivin et al., *supra* note 11, at 137; William R. Sherman & Alan B. Craig, *The Human in the Loop*, *SCIENCE DIRECT* (2018), <https://www.sciencedirect.com/topics/physics-and-astronomy/retina> (explaining and demonstrating the overall receptive field of the human eye).

¹⁹⁸ Boivin et al., *supra* note 11, at 137–38. In photography, a rectilinear lens is a photographic lens that yields images in which straight features, such as the edges of walls and buildings, appear with straight lines. Non-rectilinear lenses produce curved lines. *Rectilinear Lens*, *DBPEDIA*, https://dbpedia.org/page/Rectilinear_lens (last visited Feb. 19, 2023).

higher distortion at the edge of the image and a highly compressed center).¹⁹⁹ The most common distortions created by BWCs include curvilinear compression of objects in the center of the FOV and exaggeration of the background and objects in the periphery of the FOV.²⁰⁰ Objects, or people, in the center of the FOV, appear closer and smaller than they actually are, while background objects appear larger and farther away than they actually are.²⁰¹

1. Consequences of Distortions

A variety of disciplines study lens distortions and their impacts on viewers, and depending on the desired viewer experience or outcome, wide-angle lenses can be advantageous. In photography, researchers tested GoPro ultrawide lens distortions in narrow spaces.²⁰² The wide-angle can capture adventurous scenes from the perspective of, say, the GoPro wearer skiing down a mountain. In educational fields, researchers analyzed whether surgeons' use of wide-angle GoPro cameras for recording in the operating room could be useful as a teaching tool.²⁰³ For surgeons, the wide-angle offers attention to detail in the center of the field and allows the viewer/learner to see how to perform the surgery successfully.

On the other hand, wide-angle distortions present potentially detrimental effects, particularly in the context of inducing bias.²⁰⁴ Researchers have identified cognitive mechanisms that explain distortions present

¹⁹⁹ Boivin et al., *supra* note 11, at 139; *Classification of Fisheye Mappings*, PAUL BOURKE (June 2017), <http://paulbourke.net/dome/fisheyetypes> (“[E]quisolid [angles] maintain an equal area for each pixel. That is a pixel projected through the lens into the scene has the same solid angle irrespective of where on the lens it is. Orthographic lenses are limited to +90 degrees by definition.”).

²⁰⁰ Boivin et al., *supra* note 11, at 137–39; Cook, *supra* note 189 (describing this feature of the fisheye lenses on BWCs as “barrel distortion,” which has the effect of producing imagery appearing as though it “has been mapped around a sphere”).

²⁰¹ See Boivin et al., *supra* note 11, at 136; Cook, *supra* note 189 (“[B]arrel distortion appears in the middle of the lens’ focal length range and is worst at the wide-angle end of the range.”).

²⁰² See Fiorillo et al., *supra* note 190, at 65, 68 (testing the practicality of using an ultrawide fisheye GoPro camera in a narrow space).

²⁰³ E.g., Akshay Gopinathan Nair et al., *Surgeon Point-of-View Recording: Using a High-Definition Head-Mounted Video Camera in the Operating Room*, 63 INDIAN J. OPHTHALMOLOGY 771, 771 (2015) (testing the usefulness of a wide-angle GoPro fixed to a surgeon’s head while operating).

²⁰⁴ See, e.g., Boivin et al., *supra* note 11, at 137. See generally Patricia L. Alfano & George F. Michel, *Restricting the Field of View: Perceptual and Performance Effects*, 70 PERCEPTUAL MOTOR SKILLS 35, 36 (1990) (detailing the work of researchers who had previously studied the drawbacks of wide-angle lenses).

when viewing a wide-angle focus. “Pincushion distortion” is the distortion that occurs when an observer views a FOV wide enough to curve lines that human eyes normally perceive as straight.²⁰⁵ Saliency explains why biases form when an individual views wide-angle footage.²⁰⁶ Camera perspective bias explains why humans have a general tendency to pay more attention to images that take up more space in their FOV.²⁰⁷

Additionally, cognitive psychologists have measured the consequences of the wide field of view on motor function, perceptual accuracy, and other visual-spatial tasks.²⁰⁸ In one study, researchers tested whether a decrease, or smaller FOV, in peripheral vision would negatively impact participants’ performance of visuomotor activities (walking, reaching, and forming a cognitive map).²⁰⁹ The researchers gave participants lens-corrected binoculars with different FOVs: 9 degrees, 14 degrees, and 22 degrees.²¹⁰ The control group, on the other hand, wore uncorrected binoculars with a FOV of 60 degrees, replicating the human eye FOV.²¹¹

The researchers then further divided the groups into a cognitive map group and a perceptuomotor group.²¹² The cognitive map group formed a cognitive map, or mental representation, of a room.²¹³ The researchers gave participants in the perceptuomotor group a schema walking-path test or an eye-hand coordination task.²¹⁴ The tests measured the groups’

²⁰⁵ Kuhl et al., *supra* note 194, at 6–7 (“When this imagery has pincushion distortion, these lines are curved and, depending on where people look, may make the effective horizon appear higher or lower in the scene.”).

²⁰⁶ See discussion *supra* Section II.A.3.

²⁰⁷ See discussion *supra* Section II.A; G. Daniel Lassiter et al., *Videotaping Custodial Interrogations: Toward a Scientifically Based Policy*, in *POLICE INTERROGATIONS AND FALSE CONFESSIONS: CURRENT RESEARCH, PRACTICE, AND POLICY RECOMMENDATIONS* 143, 144 (Lassiter & Meissner eds., 2010) (“[F]actors that may not be truly causing a person’s behavior have been shown nonetheless to be perceived as causal simply because they are more visually prominent or salient to observers than other factors.”).

²⁰⁸ E.g., Alfano & Michel, *supra* note 204, at 35 (“The role of peripheral vision in competent performance of the adult visuomotor activities of walking, reaching, and forming a cognitive map of a room was examined using goggles which limited the scope of the normal field of view.”).

²⁰⁹ *Id.* at 37–38 (describing the goggles participants used and the tasks assigned to participants).

²¹⁰ *Id.* at 37.

²¹¹ *Id.*

²¹² Alfano & Michel, *supra* note 204, at 37 (describing each group’s assignments, which were made randomly).

²¹³ *Id.* at 37–38.

²¹⁴ *Id.* at 37, 39 (describing study events or tasks) (“For the *Winding Path Task*, subjects walked through a 12-in. wide winding path formed on the floor by black tape. They walked to the end of the 38-ft. path, turned around and walked back to the starting point, for a total walk of 76 ft. with 12 left and 12 right turns Subjects [in the *Eye-Hand Coordination Task*] were

accuracy at either creating the cognitive map or performing the motor tasks.²¹⁵ Further, participants rated their feelings of disorientation on a five-point rating scale.²¹⁶

Researchers found that restricting the FOV led to perceptual and visuomotor decrements in all tasks.²¹⁷ Groups with a smaller FOV took more time, made more errors, and formed more misperceptions than subjects performing the same tasks with a full field of view.²¹⁸ Specifically, subjects with a smaller FOV were less able to judge the size of two objects placed at different distances.²¹⁹ This study did not describe the underlying mechanisms that cause these phenomena to occur. The study also exclusively analyzed the restriction of the FOV effect on motor tasks (the cognitive mapping included cognition but also had motor-like qualities).²²⁰

Restricting FOV decreases cognition and perceptual accuracy, but it is not necessarily the case that a wider FOV increases those skills. An extremely wide FOV, however, may so distort an image that perceptual accuracy decreases.²²¹

In one study, researchers manipulated distances and other visual distortions in head-mounted displays to test whether these variations affected wearers' distance perception and other variables.²²² One group of

to scan the rectangles and the outlines, choose a rectangle to place in one of the outlines, pick up the rectangle and with one movement, place it on its matching outline. Each time subjects placed a rectangle on its matching outline, the paper was removed, and the next outline paper placed before the subject until all four rectangles had been placed.”).

²¹⁵ Alfano & Michel, *supra* note 204, at 38–39 (explaining that data were collected on subjects' accuracy in performing these tasks).

²¹⁶ *Id.* at 38, 40 (“[S]ubjects were asked to describe their experience and to rate their perceptions of dizziness, unsteadiness, and disorientation while viewing the room.”).

²¹⁷ *Id.* at 44 (explaining findings as described above).

²¹⁸ *See id.* (describing that restricted-FOV subjects also “experienced bodily discomfort not experienced by those with a full field of view”).

²¹⁹ *See* Alfano & Michel, *supra* note 204, at 44. In the hand-eye coordination task, restricted-FOV subjects “slowly moved their hands forward and side to side (while making head movements) as they approached the outline in which the rectangle was to be placed,” indicating to the researchers that they had difficulty judging the sizes.

²²⁰ *See id.* at 36, 44–45 (“In the present study the role of peripheral visual information for competent performance is examined.”).

²²¹ *See* Kuhl et al., *supra* note 194, at 8–9. “Minification and magnification change several visual cues that contain absolute distance information,” which, as the authors go on to explain, include the following: (1) reduction of visual angle between objects and increase in perceived distance, (2) making objects seem smaller and more distant, and (3) binocular convergence, which makes objects appear more distant. *Id.*

²²² *Id.* at 3 (stating the purpose of the experiments).

participants viewed a baseline image with a FOV close to that of a human eye.²²³ The other three groups had modified FOVs, either wider than the baseline (0.70x minified) or narrower (1.43x and 2.00x magnified).²²⁴ Results showed a statistically significant difference between the baseline group and the minified (0.70x) and magnified (2.00x) groups.²²⁵ The participants who viewed a wider FOV overestimated the actual distance to the target.²²⁶ Whether in a virtual reality environment or the real world, distance distortion that results from a wider FOV is the same.

Another study suggested that observers prefer viewing imagery in a natural manner. In this study, researchers showed observers still images of natural scenes that varied in image disparity, convergence distance, and focal length, which is often utilized to describe video footage and is similar to FOV for moving images.²²⁷ The participants rated their impression of the depth and naturalness of the photos.²²⁸ The results indicated that observers preferred images with focal lengths that most closely correlated to the FOV of the human eye.²²⁹ An increase in focal length contributed to a decrease in the accuracy of the perception of depth.²³⁰ This study focused on focal length, which is not precisely analogous to FOV. Additionally, the sample size was only 12 participants.²³¹ Nonetheless, the results support a preference for a more natural focal length.

In sum, the results of these studies are relevant when considering BWC footage usage. The results illustrate how wide-angle FOVs have potential (and beneficial) usages, but mechanically, wide-angle FOVs will produce visual distortions that impact observers. The results also indicate certain visual preferences of observers, which suggest that nonconformity

²²³ The researchers utilized a virtual environment and instructed participants to walk down a virtual hallway. The participants in the baseline group viewed a virtual environment suited to the level of the human eye. *Id.* at 9.

²²⁴ *Id.* (describing the conditions of the minified and magnified groups).

²²⁵ Interestingly, there was “no significant change” for a fourth group with 1.43x magnification. Kuhl et al., *supra* note 194, at 10.

²²⁶ *See id.* at 10 (“The results of the minification [wider FOV] . . . found that minification increases judged distances to targets on the floor in hallway environments. Unlike previous work, the present work also demonstrates that magnification [narrower FOV] has the opposite effect on distance judgments.”).

²²⁷ Mikko Kytö, *Depth Perception of Augmented and Natural Scenes Through Stereoscopic Systems* (Nov. 12, 2013) (Ph.D. dissertation, Aalto University), in 25 DOCTORAL DISSERTATIONS SERIES 47, 66 (2014).

²²⁸ *Id.* at 66 (participants rated on a seven-point scale, with seven being the highest).

²²⁹ *Id.* at 44, 67.

²³⁰ *See id.* at 38 (“[I]ncreasing the focal length causes the cardboard effect, which makes objects look unnaturally thin.”).

²³¹ Kytö, *supra* note 227, at 67.

to these preferences may be detrimental to eliciting a positive response to video footage.

BWC video, therefore, appears to impose several disadvantages on civilians in a courtroom context. Consider the following example:

Example 4: Video footage shows an officer approaching a civilian on a sidewalk. The viewer sees the encounter as if they are the officer. The officer and civilian exchange remarks. The civilian verbalizes disapproval of the officer's inquiries. A struggle ensues. The officer grabs hold of the civilian. The final frame shows the back of the civilian and the officer placing handcuffs on the civilian.

Here, a wide-angle lens affects the perceived distance between the officer and the civilian throughout the encounter. Initially, the civilian might have appeared farther away from the officer than he or she actually was. As the officer approached, the civilian would then have appeared in the center of the frame, seeming larger and closer than in reality. The distance between the officer and the civilian would have seemed to shrink more quickly than it actually did due to the relationship between focal length distortions from farther to progressively closer distances.

Depth distortions existing under Example 4 present potential consequences. Such distortions may well lead viewers of the video to believe that the officer needed to rush forward or to more quickly resort to force to apprehend the civilian, which in turn could bias viewers toward concluding that the officer's own perception regarding the need to use force was reasonable. In actuality, this may not be how the officer or a bystander would have seen the unfolding situation. As the distance between the officer and the civilian shrank, the civilian would have appeared to be much larger and closer in the BWC footage than he or she actually was (or would have appeared to someone standing nearby). If the officer and civilian had touched or engaged in a physical struggle, the civilian would have taken up most of the FOV, appearing larger still if the BWC was equipped with a fisheye or curved lens and making the civilian seem more aggressive, forceful, or threatening.²³² As a consequence, the viewer may

²³² This visual impact—causing civilians to seem larger, for example—compounds other biases that a viewer may have. See, e.g., Neil Hester & Kurt Gray, *For Black Men, Being Tall Increases Threat Stereotyping and Police Stops*, 115 PSYCH. & COGNITIVE SCI. 2711 (2018) (“Three studies reveal the downsides of height in Black men. Study 1 analyzes over 1 million New York Police Departments stop-and-frisk encounters and finds that tall Black men are especially likely to receive unjustified attention from police. Then, studies 2 and 3 experimentally

more easily justify the officer's use of force to address that perceived danger to the disadvantage of the civilian.

The "objects in mirror may be closer than they appear" warning is a helpful caution to drivers. The words alter the expectations based on the mirror's distorted view and guide the ways it may affect the driver's perception and interaction with surrounding objects on the road. Jurors who view BWC footage that is distorted by a wide-angle lens may similarly make false presumptions about the distance, aggressiveness, and, ultimately, the blameworthiness of the person(s) with whom the officer wearing the BWC interacted. Jurors should receive a similar warning.

D. Other Biases

In addition to features of BWC video already discussed, other perceptual and cognitive biases can affect jurors' and judges' uptake of video evidence. A viewer's social identity is one of the most impactful sources of bias. Jurors' racial, ethnic, and linguistic identities are believed to influence the way they perceive and judge.²³³

Racial identity is particularly significant in the context of police-civilian interactions. For example, studies have shown that Black defendants are less likely to be convicted by predominantly Black juries.²³⁴ Conversely, research indicated that Black defendants are more likely to be convicted by predominantly White or Hispanic juries.²³⁵

Further, attitudes regarding the police vary depending on racial identity. Black Americans generally hold more negative attitudes against the police and higher levels of distrust due, in part, to the disproportionate

demonstrate a causal link between perceptions of height and perceptions of threat for Black men, particularly for perceivers who endorse stereotypes that Black people are more threatening than White people."); Birck, *supra* note 183, at 162.

²³³ See Mark D. Bradbury & Marian R. Williams, *Diversity and Civilian Participation: The Effect of Race on Juror Decision Making*, 45 ADMIN. & SOC'Y 563, 568–70 (2013) (discussing juror bias) ("The implicit motivation behind strategic efforts [of attorneys] to shape jury composition by race, gender, or any other demographic characteristic is the belief that the decision making of jurors is partly a function of such latent characteristics. . . . [P]ublic opinion in the wake of high-profile cases, such as the first criminal trial of O.J. Simpson, indicates a persistent belief that the race of the accused in relation to the race of jurors may affect the jury's disposition." (citation omitted)).

²³⁴ See discussion and cases cited *id.* at 569, 576. See also William J. Bowers et al., *Crossing Racial Boundaries: A Closer Look at the Roots of Racial Bias in Capital Sentencing When the Defendant Is Black and the Victim Is White*, 53 DEPAUL L. REV. 1497, 1531–32 (2004). The Bowers et al. article, while focusing on Black defendants, provides a wealth of research, analysis, and evidence showing how certain biases influence jurors.

²³⁵ Bradbury & Williams, *supra* note 233, at 571, 575–76.

policing of Black communities.²³⁶ Prior negative experiences with police officers also correlate to a negative opinion of the police.²³⁷ These differences in identity can, and do, impact perceptions at trial because jurors' attitudes towards police correlate to how harshly or generously they judge police testimony and practices.²³⁸ Identities, therefore, likely influence the jurors' perceptual processing of evidence displaying police-civilian interactions.

The jury-selection process aims to mitigate biases of jurors or, as studies have discussed, "to shape jury composition by race, gender, or any other demographic characteristic" that could influence how a juror considers the circumstances of a case.²³⁹ Although a more detailed discussion of the social identities of jurors is beyond the scope of this Comment, it is

²³⁶ See Danyelle Solomon, *The Intersection of Policing and Race*, CTR. FOR AM. PROGRESS (Sept. 1, 2016), <https://www.americanprogress.org/article/the-intersection-of-policing-and-race/> (poll results reporting that a majority of African American respondents (76%) believed that "there was a problem with the justice system when it comes to law enforcement and race"); NAT'L ACADS. OF SCIS., ENG'G, & MED., PROACTIVE POLICING: EFFECTS ON CRIME AND COMMUNITIES 263 (Nat'l Acads. Press 2018) ("There is a large and persistent gap in the level of trust that non-White people have in law enforcement as compared to White people More than half of Black officers, compared with just 17[%] of White officers, agreed or strongly agreed that White[] [citizens] received 'better treatment' than Black[] [citizens].") (citations omitted)).

²³⁷ See, e.g., NAT'L ACADS. OF SCIS., ENG'G, & MED., *supra* note 236, at 263 ("68[%] of White respondents viewed the police favorably, while 40[%] of Black respondents reported favorable views. Black respondents (73%) were more likely to say that the police are too quick to use force than were White respondents (35%), and Black respondents were more likely to say that police tactics are generally too harsh (56% versus 26% for White respondents)."). See also Hester & Gray, *supra* note 232 (research showing taller Black men face increased stereotyping by police).

²³⁸ Bowers et al., *supra* note 234, at 1532 ("We have seen . . . that the racial composition of the jury, more specifically the number of white men and black men on the jury, strongly affects the sentence imposed."). The Bowers et al. research reveals how juror biases meaningfully influence or impact, among other considerations, verdict and sentencing recommendations:

[W]hite male jurors were far more likely than African-American male jurors to think of the African-American defendant as dangerous to others and far less apt than their black counterparts to see the defendant as sorry for what he did. . . . African-American male jurors were significantly more likely than others to imagine themselves in the situation of the defendant's family, to imagine themselves as a member of the defendant's family, to be reminded of someone by the defendant, and less likely than others to see the defendant's family as different from their own. . . . [T]he . . . evidence shows that white jurors . . . are much less receptive to arguments and evidence of mitigation than African-American jurors who served on the same black-defendant/white-victim cases.

Id.

²³⁹ Bradbury & Williams, *supra* note 233, at 567–68.

highly relevant when analyzing the perceptual processes that contribute to jury decision-making.

III. SOLUTIONS

To achieve justice, fact finders should assess evidence, facts, and information as accurately and fairly as possible. Yet, this Comment has discussed how systemic perceptual, cognitive, and emotional biases distort decision-makers' assessments of facts seen in BWC footage.

When viewing BWC footage related to a case or incident, inherent cognitive and perceptual biases alter interpretations of the event. Camera perspective may alter jurors' perceptions of causality.²⁴⁰ Motion blur may portray a civilian as more hostile or events as more contentious than they actually were.²⁴¹ Wide angles may distort the perceived distance between the police officer and the civilian.²⁴² Fact finders susceptible to biases evaluate the actions of officers and civilians as depicted in the footage, in part, when determining liability or guilt.²⁴³

When viewing a videotaped interrogation, does the suspect appear to give his or her statements voluntarily? When viewing footage of an incident between a civilian and law enforcement, whose actions first constituted a threat to the other? How close was the civilian to the officer when the officer reached for a weapon? Was it reasonable for the officer to believe that there was a threat of imminent danger? The answers to these and other questions often drive the ultimate judgments of liability or guilt. What can be done about the biases and distortions inherent in BWC footage so that jurors and judges who see this type of evidence are best equipped to make accurate, just decisions?

Courts and attorneys could implement several possible methods to mitigate the biases associated with BWC videos. Judges could give instructions to bring awareness to the biases. Experts could testify about the unique specifications of footage produced by BWCs. Prosecution and defense counsel could verbally frame the footage to highlight pertinent

²⁴⁰ Jennifer K. Elek et al., *Knowing When the Camera Lies: Judicial Instructions Mitigate the Camera Perspective Bias*, 17 LEGAL & CRIMINOL. PSYCH. 123, 124 (2012); Park & Pyo, *supra* note 78, at 191–93; Boivin et al., *supra* note 11.

²⁴¹ See *supra* Section II.B (discussing the impact motion blur may have on viewers of BWC footage); Navarro et al., *supra* note 23 (explaining the motion blur phenomenon in detail).

²⁴² See discussion and application of the research *supra* Part II. See also MERCADO, *supra* note 2, intro. at xiii (detailing the different purposes of using a variety of camera angles).

²⁴³ Lassiter et al., *supra* note 26, at 274–75. See generally *id.* at 268 (explaining how camera perspective influences interpretation of interrogation events).

details and distortions of those details. The following is a discussion of psychological research and some practical examples supporting each method, as well as the related benefits and drawbacks.

A. Jury Instructions

Jury instructions may mitigate the biases inherent in BWC footage, although the effectiveness of such instructions is questionable. In general, jury instructions are given by judges to help jurors evaluate the evidence and make legal decisions based on that evidence.²⁴⁴ The judge has wide discretion on whether and when to introduce jury instructions.²⁴⁵ Cautionary instructions are instructions given to jurors to ensure that some aspect of the trial, some evidence introduced, testimony made, or action involving a party or other personnel does not influence the jurors in an inappropriate way or encourage a mistaken or false impression.²⁴⁶ Cautionary instructions can remind the jury that there are particularized issues

²⁴⁴ See, e.g., *Pena-Rodriguez v. Colorado*, 580 U.S. 206, 228–29 (2017) (citing 1A K. O'MALLEY ET AL., *FEDERAL JURY PRACTICE AND INSTRUCTIONS* §§ 10:01, 20:01 (6th ed. 2008)) (explaining the purpose and benefits of thoughtful jury instructions) (“Trial courts, often at the outset of the case and again in their final jury instructions, explain the jurors’ duty to review the evidence and reach a verdict in a fair and impartial way, free from bias of any kind. Some instructions are framed by trial judges based on their own learning and experience. Model jury instructions likely take into account these continuing developments and are common across jurisdictions. . . . Instructions may emphasize the group dynamic of deliberations by urging jurors to share their questions and conclusions with their colleagues.”). There are many forms of jury instructions. Charging instructions include information about the relevant law and how to arrive at a decision. See *How Courts Work*, AM. BAR ASS’N (Sept. 9, 2019), https://www.americanbar.org/groups/public_education/resources/law_related_education_network/how_courts_work/juryinstruct/. The judge will point out that their instructions contain interpretation of the relevant laws that govern the case and that the jurors are required to adhere to these laws in making their decision. *Id.* Pattern instructions are boilerplate jury instructions that are approved by a state court, bench committee, or bar association. E.g., Jud. Council, *Current Criminal Pattern Jury Instructions*, U.S. CT. OF APPEALS FOR THE ELEVENTH CIR. (Mar. 10, 2022), <https://www.ca11.uscourts.gov/sites/default/files/courtdocs/clk/FormCriminalPatternJuryInstructionsRevisedMAR2022.pdf>; Crim. Jury Instruction Comm., *Connecticut Criminal Jury Instructions*, CONN. JUD. BRANCH (2023), <https://jud.ct.gov/JI/Criminal/Criminal.pdf>.

²⁴⁵ See Crim. Jury Instruction Comm., *supra* note 244, § 2.5-1 (“[T]he trial court retains the discretion ‘to give a cautionary instruction to the jury . . .’” (citation omitted)); *Boyle v. United States*, 556 U.S. 938, 946 (2009).

²⁴⁶ Crim. Jury Instruction Comm., *supra* note 244, § 2.5-1 (“[C]autionary instruction[s] [are given] to the jury whenever the court reasonably believes that a witness’ testimony may be particularly unreliable because the witness has a special interest in testifying for the state and the witness’ motivations may not be adequately exposed through cross-examination or argument by counsel.” (internal citation and quotation marks omitted)). See, e.g., *State v. William C.*, 103 Conn. App. 508, 516–20, (2007) (providing cautionary instructions); *State v. Torres*, 57 Conn. App. 614, 620 (2000) (providing the same).

associated with a certain type of evidence and can advise them how to deduce appropriate judgments from that evidence where biases may be present.²⁴⁷ Cautionary instructions have benefits and drawbacks²⁴⁸ but could help jurors more accurately assess footage.

Psychology studies have explored whether jury instructions might alleviate the biases that result from BWC footage. Although studies have shown that camera perspective bias persists despite forewarning,²⁴⁹ more recent findings suggest that instructions based on the “flexible correction model” could help reduce the effect of bias.²⁵⁰ In one study based on the flexible correction model, researchers asked whether judicial-like instructions could help combat the positive-officer bias that BWCs induce.²⁵¹ Participants viewed BWC, dashcam, or bystander video of a police-civilian interaction and were either instructed on the camera perspective bias or not.²⁵² The footage, which imitated a BWC video, depicted an incident during which an officer conversed with an intoxicated person who refused to cooperate.²⁵³ The police officer then beat the intoxicated person with a baton.²⁵⁴ The instructions were as follows:

One last thing before you view the videos, please be aware that body camera footage has been found to bias viewers’ judgments. Specifically, research has demonstrated that encounters recorded via the body camera led people to believe that the officer’s actions were less intentional and that the officer is less deserving of punishment. One reason this might occur is

²⁴⁷ See *Achieving an Impartial Jury (AIJ) Toolbox*, AM. BAR ASS’N 1 (2015), https://www.americanbar.org/content/dam/aba/publications/criminaljustice/voirdire_toolchest.pdf; Crim. Jury Instruction Comm., *supra* note 244, at § 2.10-3B (suggesting general instructions for addressing bias and prejudice). See, e.g., *Torres*, 57 Conn. App. at 620.

²⁴⁸ See *Achieving an Impartial Jury (AIJ) Toolbox*, *supra* note 247, at 15–16 (“[A]s efforts got underway to draft an instruction on implicit bias, it became obvious that the drafting of such language was challenging. In addition to questions about form, length, wording, or how much time would be involved, 59 fundamental questions were raised as to whether a judge’s highlighting of the notion of implicit bias would do more harm than good.”).

²⁴⁹ For example, results from one of the aforementioned Lassiter et al. studies addressing videotaped interrogations showed that mock juries with additional context or warnings about camera biases failed to curb certain biases. See Lassiter et al., *supra* note 26, at 276, 282–85. See also Boivin et al., *supra* note 11, at 137–39 (discussing this matter with respect to BWCs in detail).

²⁵⁰ Flexible correction model instructions describe the camera perspective bias and the direction and magnitude of the bias. See Elek et al., *supra* note 240, at 125.

²⁵¹ Jones et al., *supra* note 8, at 718.

²⁵² *Id.* at 719.

²⁵³ *Id.* at 714.

²⁵⁴ *Id.*

because people are unable to see the actions of the officer, who is mostly not recorded and thus not shown in the footage. Research has demonstrated that most people are unaware that they are affected by this bias. So, we ask that while viewing the video, you keep in mind these research findings.²⁵⁵

After watching the videos, participants answered three questions about the intentionality of the officer's actions. How responsible was the officer or civilian for the encounter? What caused the officer's behavior? And to what extent should the officer or civilian be punished?²⁵⁶

Results indicate that BWC footage can lead viewers to perceive officers more favorably than if the viewers saw the same encounter from a camera perspective that captured both the officer and civilian.²⁵⁷ Surprisingly, however, the judicial-like instructions about camera perspective bias did not have a statistically significant effect on the dependent variables (voluntariness, causality, and responsibility of the officer or civilian).²⁵⁸ These results may be limited, in part, by the fact that the researchers did not find camera perspective bias in the participants' ratings at all (where participants viewed different perspectives with no instructions).²⁵⁹ Future research should analyze different types of instructions to see whether more specific, detailed-versus-general instructions might affect participants' viewing.

Precedent has also influenced the use of certain instructions.²⁶⁰ There are few examples of judicial instructions in police use-of-force cases in relation to evidence actually captured by BWCs,²⁶¹ though many examples exist of judicial instructions concerning BWC footage at trial that include instructions related to a lack of evidence due to an officer's failure to turn on the camera.²⁶²

²⁵⁵ Jones et al., *supra* note 8, at 720.

²⁵⁶ *Id.*

²⁵⁷ See generally *id.* at 714–18 (walking through the processes, methodologies, and results of the studies).

²⁵⁸ *Id.* at 13.

²⁵⁹ Jones et al., *supra* note 8, at 717.

²⁶⁰ *E.g.*, United States v. Blixt, 548 F.3d 882, 890 (9th Cir. 2008) (holding that supplemental instructions to the jury may be proper when counsel's arguments to the jury are legally erroneous or inflammatory); Rasanen v. Doe, 723 F.3d 325, 337 (2d Cir. 2013) (holding that a jury instruction regarding the justifications for the use of deadly force was required in an excessive-force action); Pena-Rodriguez v. Colorado, 580 U.S. 206, 206, 228–29 (2017) (explaining the importance of jury verdicts and suggesting how jury instructions may help to mitigate bias).

²⁶¹ See, e.g., cases cited *supra* note 260.

²⁶² See CONN. GEN. STAT. § 29-6d(c)(1)–(2) (2022) (“Police officers shall activate the body-worn camera while interacting with the public in a law enforcement capacity . . .”).

Given the biases inherent in BWC footage discussed throughout this Comment, it is crucial that judicial instructions for BWC footage are considered. Cautionary instructions could inform the jury about the biases inherent in BWC footage. Based on psychological research on BWC biases and patterned on Connecticut's Civil Jury Instructions Manual,²⁶³ I have drafted one example of a jury instruction that a judge could give to the jurors in a civil trial before BWC footage is presented:

Ladies and gentlemen of the jury, you are about to view video footage evidence that is from a police body-worn camera (BWC). Before you view the video evidence, there are a few important things to note:

First, psychological evidence has demonstrated that footage of encounters recorded via body camera has led people to believe that the officer's actions were less intentional and that the officer is less deserving of punishment. One reason this might occur is that people are unable to see the actions of the officer, who is mostly not recorded and thus not shown in the footage.

Further, research has demonstrated that people are frequently unaware that they are affected by this bias. So, while viewing the video, keep in mind these research findings.

Research has also demonstrated that the wide-angle lens used in the video you are about to see has led people to believe that objects appearing in the footage are closer to the officer wearing the BWC than may be the case in reality. This occurs because the wide-angle lens creates a distortion by which objects or people in the center of the frame appear closer to the camera than they actually were.

Finally, research has demonstrated that the movement of the camera in BWC footage has led people to believe that there was more movement occurring at the time of the recording than was actually taking place. Please keep in mind that BWCs are frequently attached to an 'officer's body and may move around while recording.²⁶⁴

²⁶³ Civil Jury Instruction Comm., *Connecticut Civil Jury Instructions*, CONN. JUD. BRANCH (Jan. 18, 2022), <https://jud.ct.gov/Ji/Civil/Civil.pdf>. This suggested format pertains to civil trials but could also apply to criminal trials. Compare *id.*, with Crim. Jury Instruction Comm., *supra* note 244.

²⁶⁴ This instruction was created by the author and is used both as an example of an instruction that considers biases and as a proposition for an instruction that can be further expanded or built upon.

Judges should issue these instructions in three scenarios. First, the instructions should be issued before the presentation of BWC footage. They should be re-issued as a reminder for the jury after the presentation of evidence. Lastly, the instructions should be heard before jury deliberation.

The proposed instructions are modular; a judge should include, omit, expand upon, or consolidate the applicable portions as needed. While no pattern BWC instructions exist in Connecticut,²⁶⁵ legal scholars, legislators, and researchers should work together to create effective jury instructions that address the unique challenges of perception created by BWC footage.

Jury instructions may mitigate BWC biases in several ways. First, psychological research concludes that many of these biases are subconscious.²⁶⁶ Therefore, jury awareness of the potential bias enables them to consider it when they watch and interpret the video. Second, people tend to assign disproportionate weight to video evidence and to believe their own subjective interpretations that the video is an accurate representation.²⁶⁷ Jurors who understand that their interpretations of video evidence are not infallible may be more receptive to fellow jurors' differing interpretations. Jurors may then come to a more reasoned, collective decision about what happened, which is what deliberations ideally are intended to accomplish. Third, jury instructions, all things considered, are easy to prepare and deliver. If a template exists, a judge can easily introduce it in the courtroom. If a template does not exist, a judge can find one from another

²⁶⁵ There is no official prescribed or suggested pattern instruction governing BWC evidence in the Criminal or Civil Jury Instruction Manuals. See Crim. Jury Instruction Comm., *supra* note 244; Civil Jury Instruction Comm., *supra* note 263.

²⁶⁶ E.g., Lassiter et al., *supra* note 26, at 283; Bowers et al., *supra* note 234, at 1531–32. See, e.g., Crim. Jury Instruction Comm., *supra* note 244, § 2.10-3B (“In recent years, the phenomenon of unconscious bias has been widely studied The prevailing view among researchers is that everyone has unconscious biases that affect their views and behaviors, although how best to identify, measure and neutralize these biases remains open to debate.”); Andrew J. Wistrich & Jeffrey J. Rachlinski, *Implicit Bias in Judicial Decision Making: How It Affects Judgment and What Judges Can Do About It*, in ENHANCING JUSTICE: REDUCING BIAS 87–130 (Sarah E. Redfield ed., 2017).

²⁶⁷ Boivin et al., *supra* note 11, at 129, 137 (“[T]he perception/retention of details [by BWC video viewers] was the same [in one experiment] . . . regardless of the version of the video viewed. An implication of these results is that people assigned to evaluate the appropriateness of an intervention (e.g., members of a committee monitoring police misconduct) might have biased perceptions”); Alana Saulnier et al., *The Effects of Body-Worn Camera Footage and Eyewitness Race on Jurors’ Perceptions of Police Use of Force*, 37 BEHAV. SCI. & L. 732, 734, 747 (2019).

court or jurisdiction to reference. Alternatively, trial judges can present cautionary instructions on an ad hoc basis.

Jury instructions also have several potential disadvantages. With respect to the literature available, several studies question the effectiveness of jury instructions.²⁶⁸ Further, due to the timing of certain jury instructions (delivered after jurors see footage), there can be tension between what jurors see during trial and the instructions they hear after the fact.²⁶⁹ Also, verbose psychological and legal terminology in jury instructions may confuse the average juror.²⁷⁰ Even if simplified into plain language, the instructions could still cause confusion. Confusion regarding instruction language could incentivize parties to challenge the validity or alleged prejudicial effects of jury instructions on appeal.

Lastly, there is currently no template for cognitive or psychological jury instructions. Creating templates from scratch could be costly and time-consuming, as it might involve a committee appointment, drafts, and proposals to state legislatures, all of which could take years. On the other hand, investing the resources to create a pattern jury instruction for the interpretation of video evidence could save time later, as judges could reliably use the pattern instructions in future cases involving BWC footage.

B. Expert Witnesses

Expert testimony could also mitigate the challenges posed by BWC biases. Expert testimony includes opinions stated during a trial or deposition by a witness who is an expert on a subject relevant to the lawsuit or criminal case.²⁷¹

²⁶⁸ See, e.g., Wistrich & Rachlinski, *supra* note 266, at 106–08; *id.* at 107 nn.93–94 (citing research that shows different outcomes to jury training and instructions about bias); Elek et al., *supra* note 240, at 125, 130–31. See also Mauricio J. Alvarez et al., “It Will Be Your Duty...:” *The Psychology of Criminal Jury Instructions*, in 1 ADVANCES IN PSYCHOLOGY AND LAW 119–58 (Monica K. Miller & Brian H. Bornstein eds., 2016) (evaluating how juries understand jury instructions and types of criminal jury instructions).

²⁶⁹ Wistrich & Rachlinski, *supra* note 266, at 107 n.94 (citing and comparing discussions in Elizabeth Ingriselli, *Mitigating Jurors’ Racial Biases: The Effects of Content and Timing of Jury Instructions*, 124 YALE L.J. 1690, 1729 (2015); and JENNIFER K. ELEK & PAULA HANNAFORD-AGOR, CAN EXPLICIT INSTRUCTIONS REDUCE EXPRESSIONS OF IMPLICIT BIAS? NEW QUESTIONS FOLLOWING A TEST OF A SPECIALIZED JURY INSTRUCTION (2014)).

²⁷⁰ See discussion and studies cited in Ingriselli, *supra* note 269, at 1716 n.115. See, e.g., *id.* at 1737–738, n.198; Elek et al., *supra* note 240, at 125.

²⁷¹ By way of review, a witness who may testify as a qualified expert based upon their “knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise” if certain criteria are met. FED. R. EVID. 702. In sum, an expert’s scientific, technical, or other specialized knowledge must be helpful to a trier of fact in understanding the facts of

Based on the brief literature reviewed,²⁷² academics from many fields have studied and researched the biases associated with BWC footage, and these researchers could present expert testimony to explain the underlying cognitive-perceptual processes in a jury trial incorporating BWC footage. For example, an expert who specializes in the perceptual processes that underlie wide-angle distortions could explain how viewing an image captured by a wide-angle lens creates distance distortion. The expert could then analyze the footage in that specific case and state an opinion about whether distances seem distorted in the footage. Expert testimony analyzing BWC footage, therefore, can offer several advantages. While it may take time and resources to find an expert who is a good fit and to familiarize the expert with the facts of the case, such costs have the potential to be worthwhile. In addition, expert testimony, like jury instructions, would make jurors conscious of the biases that BWC footage can induce. Improving awareness in this manner could help jurors make more accurate judgments about footage.

On the other hand, expert testimony on BWC footage also presents some drawbacks. Like jury instructions, expert testimony may confuse the jury. Cognitive psychologists and other experts in the field have technical knowledge and experience related to the complex mechanisms of biases and distortions. The use of technical expertise and language could confuse the lay juror, who may have a limited understanding of or limited experience with the technical vocabulary.²⁷³ The party who introduces the expert must ensure that the testimony is succinct and digestible. This preparation would require more time and effort.

the case and evidence, and the testimony must be based upon reliable scientific research. *Id.* See also *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579 (1993) (prescribing threshold test for the admission of expert testimony).

²⁷² See generally scholarship cited *supra* Part II.

²⁷³ Experienced and knowledgeable attorneys and expert witnesses, however, will (or should) know that preparation and a developed strategy are required to effectively convey the science to a lay jury. Jury confusion in this context is worth noting, most importantly, to highlight and increase awareness of the issue. Indeed, many of the experts identified in this Comment have published research that specifically targets how interested parties can use the data collected to improve outcomes in the legal environment. *E.g.*, Lassiter & Irvine, *supra* note 25, at 272–75 (warning against the effects of camera perspective bias on individuals making character-based judgments); Lassiter et al., *supra* note 26, at 270–71 (addressing further the potential and undesirable biases introduced by video evidence in trial settings); Boivin et al., *supra* note 11, at 136–39 (assessing the potential impacts of camera perspective bias introduced by police-POV video footage); Wistrich & Rachlinski *supra* note 266, 105–115 (providing suggestions to combat prevalent biases in the justice system with a focus on race and the responsibility of the judiciary).

Jurors who see BWC footage prior to hearing the expert's testimony about perceptual processes may have a difficult time properly weighing the testimony's value. Such a juror may struggle to reevaluate what has already been seen. The order of presentation of expert testimony and BWC footage is critical; for example, experts may need to play the footage as they give their testimony. Lastly, opposing counsel could present a different expert whose testimony conflicts with that of the first expert. Experts do not substantially dispute the general existence of certain phenomena in cognitive and perceptual psychology, but some disagree about the processes, mechanisms, and effects of the biases formed when individuals watch BWC video footage, about biases that are inherent to BWC video, or both.²⁷⁴ This "battle of the experts" increases the chance that expert testimony could confuse the jury.²⁷⁵ In addition to these limitations, expert witnesses can be costly.

C. Other Solutions

Trial lawyers can directly address the biases that BWC videos engender by verbally framing the presentation of BWC footage and/or directing jurors' and judges' attention to the aspects that are prone to cognitive and perceptual biases.

Counsel should utilize verbal framing to call jurors' attention to biases inherent in BWC footage. Prior to the presentation of the BWC video, counsel can verbally frame it by affirmatively stating certain aspects of the footage that jurors should pay special attention to, acknowledge as problematic, or ignore completely. For example, a prosecutor in a use-of-force case can call jurors' attention to the wide-angle lens bias by saying, "Keep in mind, when you watch this footage, that the wide-angle lens makes things in the center of the frame appear closer than they actually are."

Verbal framing can include other cognitive techniques as well. The use of certain terminology before the presentation of BWC footage may mitigate the effects of biases. The integration of verbal framing in trial

²⁷⁴ See generally Jones et al., *supra* note 8, at 711–13 (citing Yael Granot et al., *Justice is Not Blind: Visual Attention Exaggerates Effects of Group Identification on Legal Punishment*, 143 J. EXPERIMENTAL PSYCH. 2196 (2014)). See, e.g., Birck, *supra* note 183, at 169 (citing Mary D. Fan, *Justice Visualized: Courts and the Body Camera Revolution*, 50 U.C. DAVIS L. REV. 897, 951 (2017)).

²⁷⁵ See Jones et al., *supra* note 8, at 718 (acknowledging limitations presented by showing video footage to non-experts, such as jurors, who generally lack relevant specialized knowledge).

presentation is relatively easy. Verbal framing techniques may provide benefits similar to those of expert testimony without the cost of hiring an expert witness.²⁷⁶ The effectiveness of verbal framing is supported by research.²⁷⁷

Counsel should also seek to present various perspectives in order to show a more complete picture of the incident. For interactions recorded by BWCs, the presentation of additional footage from multiple perspectives may not be possible. The prevalence of surveillance footage,²⁷⁸ however, and witnesses carrying cellphones increases the opportunities to introduce multiple perspectives of a recorded incident into evidence. Counsel could present surveillance or cellphone footage and call jurors' attention to the fact that these types of footage may give a more accurate impression of the distance, movement, or speed of the officer or civilian.

IV. CONCLUSION

Every video is a product of the camera that filmed it and reflects, to some extent, the distinctive qualities of that camera. As discussed, BWC videos, an increasingly common and important type of courtroom evidence, depict events in ways that can bias viewers' perceptions and interpretations.

The consequences identified in this Comment have been deeply investigated by researchers. Camera perspective bias, due to the location of the BWC on the officer's uniform, can lead viewers to overattribute causal responsibility to the person with whom the officer is interacting and to under attribute intentionality to the officer. Motion blur, due to the often-frenetic movement of the BWC during an interaction, can exaggerate the volatility and apparent danger of the situation. Distance distortion, caused by the BWC's wide-angle lens, can make the confronted person appear closer and more threatening to the officer than he or she actually was. These features may hinder a legal fact finder's ability to accurately understand the recorded events or unreasonably bias the fact finder's interpretations of BWC video evidence and disadvantage civilian-suspect.

²⁷⁶ Park & Pyo, *supra* note 78, at 186, 192–93.

²⁷⁷ See experiments and research cited *id.* at 192. See also *id.* (citing James N. Druckman, *Using Credible Advice to Overcome Framing Effects*, 17 J. L., ECON., & ORG. 62, 62 (2001) (“[S]ome widely known framing effects greatly diminish and sometimes disappear when participants are given access to credible advice about how to decide.” (internal quotation marks omitted))).

²⁷⁸ Fan, *supra* note 274, at 928–38.

Given the abundance and accessibility of the scholarship, there are tested tools available to assist in achieving fairness in the law. Jury instructions and expert testimony could increase awareness of the issues and educate jurors and judges about the potential biases and their impacts on judgments. Still, there is room for improvement. Continuous research and reporting on the psychological mechanisms that cause these biases could help drafters of instructions and experts better explain the effects of BWC videos to an audience (or jury). Similarly, continuous and honest reporting by legal scholars can influence stakeholders, policymakers, and judicial authorities to balance the scales. These research developments and the information captured, if utilized, will lead to more accurate, less biased fact-finding surrounding this increasingly important type of evidence.