




Do body-worn cameras reduce eyewitness cooperation with the police? An experimental inquiry

J. A. Hamm¹  · A. M. D'Annunzio¹ · B. H. Bornstein² · L. Hoetger³ · M. N. Herian⁴

Published online: 10 April 2019
© Springer Nature B.V. 2019

Abstract

Objectives The current research adds to the literature addressing police body-worn cameras (BWCs) by experimentally evaluating their effect on an interaction that has, to date, received relatively little systematic, empirical attention: police–eyewitness interactions. Although research suggests that BWCs generally have positive effects, legal scholars and media professionals have long argued that deploying cameras in this context may backfire, especially by chilling public willingness to speak with police.

Method The current study utilized an online national convenience sample ($N = 508$) to test the effect of four factors that were varied across seven mock interview video conditions on participants' willingness to cooperate, the amount of information provided, accuracy and confidence in an eyewitness identification task, and perceptions like procedural fairness and trust. We hypothesized that the presence and activation of the camera would have positive effects on the interaction.

Results Regarding the factors, the manipulated presence of a recording camera had the most consistent positive impact. Whether the camera was present, and the participant's awareness of the camera and the fact that it was recording were also tested, but these comparisons were less likely to reach statistical significance. Regarding the conditions, the best outcomes were associated with officers who turned on the camera and did not explain why. Conversely, the worst outcomes were associated with officers who turned off the cameras without explanation.

Conclusions Our results suggest that the positive effects of BWCs may extend to police–eyewitness interactions and reveal no evidence of a chilling effect on eyewitness-relevant outcomes.

Keywords Body-worn cameras · Chilling effect · Witness interviews · Trust · Eyewitness identification · Video vignettes

✉ J. A. Hamm
jhamm@msu.edu

Body-worn cameras (BWCs) are small video recording devices that are being increasingly deployed by law enforcement agencies around the world (see Lafayette Group 2015). These devices are, in many ways, extensions of dash-cams that allow for additional documentation of police–citizen interactions. The current study seeks to contribute to the growing literature regarding the impact of this new technology through its focus on the effect of BWCs during a specific kind of interaction—that of an officer seeking information from a witness about a potential crime—using an online, vignette-based, experimental methodology.

The growing empirical BWC literature generally suggests positive impacts for individuals with whom law enforcement interact as a result of an actual or potential infraction (see Crow et al. 2017), but less is known about BWCs in the investigatory context. Other work in this context suggests that factors like attitudes, race, gender, nature of the crime, and neighborhood context matter (e.g., Hawdon and Ryan 2011; Reisig and Lloyd 2009; Tyler and Fagan 2008) but the paucity of scholarly work on BWCs leaves open the question of their potential effect. This means that it remains as possible that the generally positive effects of BWCs also extend to this interaction as it is that the particular features of this context may cause BWC usage to backfire (e.g., Lin 2016, Maury 2016, Miller et al. 2014, Simmons 2015). As noted by Blitz (2015: 13), these cameras change “ephemeral and forgettable actions into permanent and easily shared records.” During involuntary interactions with the police, this may be perceived as a benefit but it may also be that it creates problems for witnesses from whom the police are seeking voluntary cooperation. As these individuals are generally not required to speak with the police, a citizen who is uncomfortable with a recording camera can often simply decline the encounter. There are several possible mechanisms for this potential “chilling effect.” For some, it could be driven by a concern about being identifiable to individuals outside of law enforcement who gain access to the video, for example, via a Freedom of Information Act (FOIA) request. For others, it could simply be that BWCs increase the stakes of the interaction such that witnesses could be more easily held to any statement they make, thereby causing them to no longer feel comfortable enough to speak freely.

The potential negative effects of BWCs on witness-relevant behaviors are likely dependent on several factors. The first, and most obvious, is the presence of the camera itself, but these cameras are not always recording. Although departmental policies often require them to be on during interactions with the public (e.g., IACP 2014; Miller et al. 2014), research suggests that they may only be recording in as little as one-third of citizen encounters for reasons that include malfunction, forgetfulness, and intentional malfeasance (Hedberg et al. 2016; Katz et al. 2015; see also Young and Ready 2016). Thus, a second potentially important factor is whether the camera is recording. It is also important to recognize that regardless of the objective reality regarding the presence or activation of the camera, citizens are not necessarily aware of either. Despite their size and location—typically in the center of an officer’s chest—citizens often report not being aware of the camera (White et al. 2017). Additionally, although some cameras have a traditional “red light,” the design of some cameras makes it virtually impossible for citizens to know whether the device is actively recording. Thus, regardless of whether a camera is actually present or recording, it may be that the citizen’s awareness (or belief) is most determinative of an effect.

Current study

To address this gap in the literature, the current study experimentally manipulated camera presence, whether it was recording, and the camera's salience across seven versions of an otherwise identical, video-taped scenario. In the first two conditions, the officer simply requested the participant's cooperation as a witness while not wearing (*C1*) or wearing (*C2*) a recording BWC. In the remaining conditions, salience was increased via one of five statements. In *C3* and *C4*, the officer drew attention to the camera by citing a department policy requiring the officer to not have (*C3*) or have (*C4*) the camera recording before asking for cooperation. *C5* and *C6* increased salience through statements in which the officer simply noted that he was turning off (*C5*) or turning on (*C6*) the camera without explanation. The final condition generally repeated *C4* but also included a statement about the applicability of FOIA (*C7*). This served as an ecologically valid method of increasing the salience of not only the camera, but also the fact that, in some situations, these videos may be available to individuals outside of law enforcement. Following the majority of the empirical literature on BWCs, we expected that we would not find evidence of a chilling effect. Instead, we hypothesized that (*H1*) camera presence, (*H2*) camera activation, (*H3*) participant awareness of the camera's presence, and (*H4*) participant awareness of the camera's activation would improve willingness to help the officer, the amount of information provided, the accuracy of the information, and perceptions of the particular officer and the police generally.

Method

Participants

Data were collected using an online national convenience sample via Mturk (see Hamm et al. 2017; Pickett et al. 2018). The sample included 508 participants who self-reported as 55% male and 71% White. Fifty-one percent of the sample did not complete college (37% discontinued their education after a bachelor's degree), and 72% reported making less than \$60 k/year (39% reported making less than \$30 k/year). Overall, the sample was skewed somewhat liberal politically, with 22% reporting that they are were conservative on social issues (14% neutral), 34% on economic issues (16% neutral), and 26% in general (19% neutral).

Materials and survey

Upon providing informed consent, participants saw a 16 second video of a White, college-aged man suspiciously attempting to open a car door (see Fig. 1). The video was shot from the point of view of the participant, out of the front window of a home in a residential neighborhood of East Lansing, Michigan. The video begins with the man left of the center of frame, walking to a vehicle in the center of the frame. He looks around, peers into the car, and unsuccessfully attempts to open the door before looking around again and walking toward the right of the frame. The video was shot in portrait



Fig. 1 Screen shot of the suspicious behavior video

orientation on an iPhone in order to provide a video that would be most familiar to the greatest number of participants.

Participants then saw one of seven videos of a middle-aged, White officer standing just inside the front door of the same house as the previous video (see Fig. 2). The officer stands in the center of the frame and requests the participant's cooperation as a witness. In the first condition (*C1-no camera*; $n = 83$), the officer is not wearing a body camera and delivers the control statement, in which he simply states his name, his department, and that there were reports of cars being broken into the previous day. He then asks whether the participant is willing to tell him about "anything suspicious [they] might have seen." In the second condition (*C2-camera*; $n = 69$), the officer delivers the same statement, this time while wearing a body camera that is recording, but he makes no mention of its presence. In the third condition (*C3-camera off, policy*; $n = 76$), he delivers the same statement while wearing the body camera but also notes that he is required by department policy to inform the participant that the camera is off and is not recording. The fourth condition (*C4-camera on, policy*; $n = 67$) mirrors *C3-camera off, policy* in that the officer states that the camera is turned on and is recording. In the fifth and sixth conditions, the officer delivers the control statement after taking a brief moment to turn off (*C5-camera turned off*; $n = 74$) or turn on (*C6-camera turned on*; $n = 64$) the camera while simply stating aloud that he is doing so. In the final condition (*C7-*

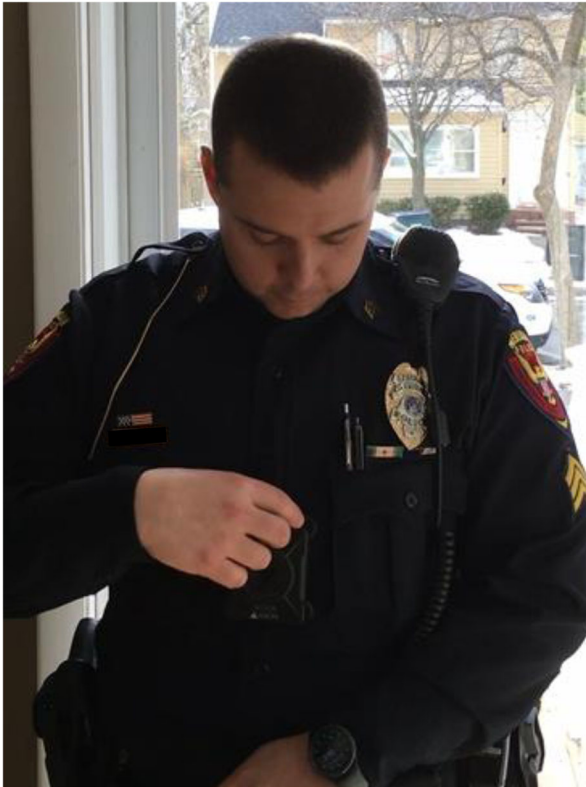


Fig. 2 Example screen shot of the officer video (from C5-camera turned off)

camera on, FOIA; $n = 75$), the officer, while wearing a camera, delivers the same statement as in the fourth condition but also states that the video collected by the camera would be subject to the Freedom of Information Act, “which would mean that, in general, [the department] would be required to provide it upon request.”

Following the video manipulation, all participants completed a brief questionnaire. Participants first saw a yes/no question asking whether they would be willing to talk to the officer. Ninety-three percent of the complete sample indicated that they were willing and were then asked to describe what they saw in an open-ended text box (550pixels by 100pixels). These responses provided the basis for four variables that were coded by the research team: *word count*, *suspect details*, *setting details*, and *behavior details*. Participants then completed measures regarding their willingness to help (*comfort answering* and *willing to testify*) and their perceptions of law enforcement in general and the officer specifically (*trust police*, *officer trustworthiness*, and *officer procedural fairness*; see Table 1). Finally, participants responded to two questions regarding their awareness of the body camera in the video (*camera noticed*) and, if there was a camera, whether it was recording (*camera recording*).

In the next portion of the survey, participants completed an eyewitness identification task, which took the form of a six-image, sequential, target-absent lineup. The images were full frontal, head-and-shoulders shots of men wearing everyday clothes and smiling. The foil images were drawn from a database of college-aged, White males

Table 1 Descriptive and frequency information

Variable	Item Wording	Item/Scale Statistics		
		Mean	SD	Range
<i>Comfort answering</i>	How comfortable do you feel answering the officer's question?	5.85	1.53	1–7
<i>Willing to testify</i>	Regardless of how helpful it would be, how willing would you be to testify in court regarding what you saw?	5.32	1.56	1–7
<i>Word count</i>	[count of the words used in the participant's response to the officer]	25.65	17.98	0–97
<i>Suspect details</i>	[count of the discrete details provided regarding the suspect]	2.30	2.02	0–8
<i>Setting details</i>	[count of the discrete details provided regarding the setting]	0.39	0.56	0–2
<i>Behavior details</i>	[count of the discrete details provided regarding the suspect's behavior]	2.02	1.57	0–6
<i>EWID accuracy</i>	[0/1 variable indicating whether any positive identification was made]	0.63	0.48	0–1
<i>EWID conf.</i>	How confident are you in your decision?	4.03	1.14	1–6
<i>Trust police</i>	T1: I am generally comfortable being vulnerable to the judgment of police in my community. T2: I would be comfortable letting the police in my community handle a specific situation that was important to me. T3: I am generally comfortable with police in my community making decisions to maintain order.	5.13	1.40	0–7
<i>Officer trustworthiness</i>	Tw1: This officer would care about people like me. Tw2: This officer would have the skills needed to do his job well. Tw3: This officer would always try to do the right thing.	5.52	1.18	0–7
<i>Officer procedural fairness</i>	PF1: This officer would treat me with respect. PF2: This officer would listen to what I say. PF3: This officer would make decisions based on the facts and not on his opinion.	5.69	1.12	0–7

used in previous research (e.g., Bornstein et al. 2013). Ten potential images were pretested for similarity alongside an image of the target; the six closest images were used in the current task. For each picture, participants were asked to indicate whether they believed that the individual was the same as the one in the video. As the lineup was target-absent, participants who identified anyone were coded as “incorrect” (0) in the binary identification variable (*EWID accuracy*) while participants who did not identify anyone were coded as “correct” (1). Participants also rated their confidence in each determination (whether correct or not), on a one to six scale where one indicated

that the participant was “not at all confident” and six indicated that the participant was “extremely confident” in their response. The *EWID confidence* variable represented each participant’s average confidence in their eyewitness identification determinations for all six foils. Correlations among all study variables are reported in Table 2.

Data availability statement The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Results

Hypothesis testing

We first evaluated the data in light of our four hypothesized factors (see Table 3 for the distribution of the study participants across factors and conditions). As noted above, the first two factors were manipulated variables that indicated whether a camera was present in the video (*camera*) and whether the camera had been activated (*camera on*). The second two were measured variables that indicated whether participants reported noticing a camera (*camera noticed*) and whether the participant reported believing that the camera was activated (*camera recording*). Table 4 reports the group means, effect sizes, and significance for tests of association with each variable and suggests that *camera on* had the most robust effects. Specifically, when a camera was present and recording (*camera on* = yes), participants reported higher comfort answering, used more words in their response, and reported more positive perceptions of the officer. They also reported marginally higher confidence in their determinations in the eyewitness task. Notably, the mere presence of a camera and whether the participant noticed the camera was activated were associated with fewer significant differences. When they were significant, however, those differences were in the same direction as for *camera on*. No significant differences were identified as a function of whether the camera itself was noticed.

Pairwise condition comparisons

We next conducted a series of tests to compare the seven conditions on each of the witness-relevant outcomes (see Table 5). Regarding *comfort answering*, mean responses were most positive in *C6-camera turned on* and were statistically significantly higher than both *C2-no camera* and *C5-camera turned off*. No significant comparisons were identified for *willing to testify*. Regarding participant responses to the officer’s inquiry, the highest mean numbers of words and suspect details were reported in *C4-camera on, policy*, especially as compared to *C1-no camera*; *C3-camera off, policy*; and *C5-camera turned off*, all of which elicited significantly fewer words and suspect details. *C7-camera on, FOIA*, also elicited significantly fewer words than *C4-camera on, policy*. *Behavior details* revealed a similar pattern of means, but only *C4-camera on, policy* and *C5-camera turned off* were significantly lower. The pattern of means for *setting details*, however, was considerably different, with *C2-camera* eliciting the highest mean number of details, but this was only significantly higher than *C7-camera on, FOIA*.

Table 2 Construct correlations heat map

	1	2	3	4	5	6	7	8	9	10
1. <i>Comforting</i>										
2. <i>Willing to Testify</i>	.45**									
3. <i>Word Count</i>	.35**	.19**								
4. <i>Suspect Details</i>	.31**	.18**	.63**							
5. <i>Setting Details</i>	.19**	.09*	.39**	.32**						
6. <i>Behavior Details</i>	.29**	.17**	.69**	.41**	.30**					
7. <i>EWID Accuracy</i>	-.06	-.13**	.12**	.14**	.13**	.12**				
8. <i>EWID Confidence</i>	.17**	.11*	.02	.08	.02	.01	-.24**			
9. <i>Trust Police</i>	.55**	.49**	.22**	.16**	.07	.17**	-.12**	.11*		
10. <i>Officer Trustw.</i>	.54**	.47**	.28**	.23**	.12**	.20**	-.04*	.16**	.73**	
11. <i>Officer Proc. Fair.</i>	.54**	.43**	.32**	.26**	.20**	.25**	-.03*	.15**	.70**	.90**

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Stronger correlations are shaded darker.

Table 3 Study conditions by camera, camera on, camera noticed, and camera recording

Condition	Number	Camera (manipulated)		Camera on (manipulated)		Camera noticed (measured)			Camera recording (measured)			
		No	Yes	No	Yes	No	Do not know	Yes	No camera	No	Do not know	Yes
<i>C1-no camera</i>	83	100%	0%	100%	0%	12%	84%	4%	11%	4%	82%	4%
<i>C2-camera</i>	69	0%	100%	0%	100%	16%	77%	7%	12%	4%	80%	4%
<i>C3-camera off, policy</i>	76	0%	100%	100%	0%	5%	3%	92%	3%	80%	5%	12%
<i>C4-camera on, policy</i>	67	0%	100%	0%	100%	5%	13%	82%	6%	2%	15%	78%
<i>C5-camera turned off</i>	74	0%	100%	100%	0%	3%	43%	54%	3%	37%	47%	14%
<i>C6-camera turned on</i>	64	0%	100%	0%	100%	5%	34%	61%	3%	9%	44%	44%
<i>C7-camera on, FOIA</i>	75	0%	100%	0%	100%	4%	7%	89%	3%	1%	5%	91%

For the measured variables, “do not know” responses recorded as “No.” “No camera” responses coded as missing

Table 4 Witness response mean differences by camera, camera on, camera noticed, and camera recording

Response	Camera (manipulated)			Camera On (manipulated)			Camera Noticed (measured)			Camera Recording (measured)		
	No	Yes	η^2 /sig.	No	Yes	η^2 /sig.	No	Yes	η^2 /sig	No	Yes	η^2 /sig
<i>Comfort answering</i>	5.62	5.90	.004	5.69	5.99	.01*	5.80	5.90	.001	5.81	5.97	.003
<i>Willing to testify</i>	5.19	5.34	.001	5.22	5.40	.003	5.25	5.37	.002	5.23	5.46	.01
<i>Word count</i>	24.07	25.96	.002	23.85	27.17	.01*	24.43	26.65	.004	26.11	25.80	< .001
<i>Suspect details</i>	2.19	2.32	.001	2.13	2.44	.01	2.22	2.36	.001	2.33	2.32	< .001
<i>Setting details</i>	0.43	0.38	.001	0.38	0.39	< .001	0.41	0.37	.001	0.40	0.37	.001
<i>Behavior details</i>	2.12	2.00	.001	2.00	2.04	< .001	1.96	2.07	.001	2.08	1.99	.001
<i>EWID accuracy^a</i>	63%	63%	< .001	64%	62%	.001	64%	62%	.001	66%	58%	.01
<i>EWID confidence</i>	3.95	4.04	.001	3.91	4.12	.01+	3.98	4.07	.002	3.91	4.12	.01+
<i>Trust police</i>	4.80	5.20	.01*	4.96	5.28	.01*	5.10	5.16	.001	5.08	5.20	.002
<i>Officer Trustw.</i>	5.33	5.56	.01	5.37	5.65	.01*	5.48	5.56	.001	5.45	5.63	.01
<i>Officer Proc. Fairn.</i>	5.51	5.72	.01	5.53	5.82	.02*	5.60	5.76	.01	5.60	5.84	.01*

+ $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

^a Percentages for EWID accuracy indicate the percent of the sample that was accurate

Table 5 Witness response by study condition LSD comparisons

Response	Complete Sample	C1-no camera	C2-camera	C3-camera off. policy	C4-camera on. policy	C5-camera turned off	C6-camera turned on	C7-camera on, FOIA
<i>Comfort</i>	5.85	5.63 ^a	5.94	5.87	5.90	5.57 ^b	6.33 ^{ab}	5.84
<i>Answering</i>								
<i>Willing to Testify</i>	5.32	5.19	5.49	5.41	5.40	5.05	5.44	5.28
<i>Word Count</i>	25.65	24.07 ^a	26.46	24.09 ^b	30.52 ^{ab,c}	23.34 ^c	26.39	25.51
<i>Suspect Details</i>	2.30	2.19 ^a	2.52	1.97 ^b	3.01 ^{ab,c,d}	2.23 ^c	2.41	1.87 ^d
<i>Setting Details</i>	0.39	0.43	0.48 ^a	0.34	0.40	0.36	0.33	0.27 ^a
<i>Behavior Details</i>	2.02	2.12	1.96	2.09	2.31 ^a	1.77 ^a	2.05	1.85
<i>EWID Accuracy¹</i>	63%	63%	64%	65%	63%	66%	55%	64%
<i>EWID Conf.</i>	4.03	3.95	4.13 ^a	4.10 ^b	4.22 ^c	3.70 ^{ab,c,d}	4.06	4.09 ^d
<i>Trust Police Officer</i>	5.13	4.80 ^{ab,c}	5.34 ^{u,d}	5.25 ^b	5.20	4.84 ^{u,d,e}	5.46 ^{c,e}	5.14
<i>Trustw. Officer Proc. Fairn.</i>	5.52	5.33 ^a	5.69 ^b	5.58 ^c	5.49	5.20 ^{b,c,d,e}	5.83 ^{u,d}	5.60 ^e
	5.69	5.51 ^a	5.78 ^b	5.75 ^c	5.71 ^d	5.32 ^{b,c,d,e,f}	6.10 ^{u,e}	5.76 ^f

Note. Values with matching superscript are statistically significantly different at $p < .05$. Numerically higher values within rows are shaded darker. ¹Percentages for *EWID accuracy* indicate the percent of the sample that was accurate.

EWID accuracy was not significantly different across conditions but *EWID confidence* did vary such that participants were least confident in their determination in *C5-camera turned off*. This result was significantly lower than *C2-camera*; *C3-camera off, policy*; *C4-camera on, policy*; and *C7-camera turned on, FOIA*. Regarding the attitudinal measures, trust, trustworthiness, and procedural fairness were all highest in *C6-camera turned on*. For trustworthiness and procedural fairness, values were lowest in *C5-camera turned off*. For trust, values were also relatively low in *C5-camera turned off* but were numerically lowest in *C1-no camera*.

Discussion

The current study provides a first laboratory-controlled, experimental evaluation of the effects of BWCs in the investigatory context. As with most of the previous literature, this study also suggests that, when the camera has an effect, that effect is usually positive. Instead of chilling cooperation, present and recording BWCs typically increased comfort with talking to the officer, positive perceptions, and confidence in the eyewitness identification. However, these effects were not entirely consistent. Regarding our hypothesized factors, the most consistent effects were identified for whether the camera was activated (*H2*). Participants who were randomly assigned to see a recording camera were significantly more comfortable answering, provided responses with more words, and reported more positive perceptions of the police. Confidence in the eyewitness identification was also marginally higher but did not reach traditional levels of statistical significance. Awareness of the camera's activation (*H4*) was also associated with numerically higher values on most of those variables, but only procedural fairness reached statistical significance. Although not significant, awareness of activation was the only factor that came close to being associated with *EWID accuracy* ($p = .11$) and, notably, the direction of the effect suggested that awareness of a recording camera actually decreased accuracy. The presence of a camera (*H1*) only had a significant effect on trust in the police, and awareness of the camera itself (*H3*) was not marginally or significantly associated with any differences in witness responses.

Thus, our study suggests that, as might be expected, whether the camera is recording matters more than whether it is present but, somewhat surprisingly, that its actual activation might matter more than its perceived activation. Because activation was manipulated, all participants were correctly categorized into *camera on*. *Camera recording*, however, only refers to the participants' reported awareness and, as shown in Table 4, most participants responded that they did not know whether the camera was recording (these responses were coded as "no"; see Table 3). For most conditions, this was the largest percentage of responses, but when it was not, the majority of responses were accurate (e.g., 80% of participants in *C3-camera off, policy* correctly reported that the camera was not recording). Overall, 87% of participants who did not see a recording camera were accurate, but only 58% of those who did see a recording camera were. Thus, the primary discrepancy between the manipulated and measured indicators of activation is the relatively higher percentage of participants who saw a recording camera but indicated that that it was not recording or, more typically, that they did not know. Our results, therefore, suggest that despite the common assumption that cameras must be noticed to have an effect, (reported) awareness of the presence of a

camera may not be the most important factor, especially as recording cameras do not appear as memorable as non-recording cameras (see also White et al. 2017). In the field, it would stand to reason that such a result could suggest that the primary effect of cameras is on officers and not the public. This would be in line with a procedural fairness-based mechanism for the effect of BWCs (see Hedberg et al. 2016) as it could mean that officers who know that their camera is recording act more positively and thus elicit more positive responses from the public, regardless of whether the individual is aware of the recording camera. In our study however, these differences in officer behavior were controlled by creating brief conditions that did not vary other than in the statements delivered. Additionally, direct tests of the effect of the factors and conditions on witness responses as mediated by procedural fairness or trustworthiness failed to show any significant mediations (results for these analyses are available upon request from the first author). Thus, although likely creating more questions than it answers, the current study adds to BWC literature by suggesting that, in place of a simple, procedural fairness-based rationale, the mechanism of the effects of BWCs is complicated.

Policy approaches

The pairwise comparisons provide a more nuanced look at BWCs in this context by permitting comparisons across specific policy approaches. As discussed above, our results suggest that present and recording BWCs have generally positive effects, at least in hypothetical police–witness interactions. In particular, *C6-camera turned on* generally fared best, and these more positive responses were most likely for perceptions of the police. In this condition, the officer stopped at the beginning of the encounter to turn on the camera and stated that he was doing so. Thus, this condition would have increased the salience of a recording camera, but it is worthy of note that the other two conditions in which salience was increased (*C4-camera on, policy* and *C7-camera on, FOIA*) were more neutral. Indeed, for the most part, these two conditions were not appreciably different from *C2-camera*, in which the officer simply wore, but did not mention, an activated body camera. The relatively lower ratings for *C7-camera on, FOIA* suggest a negative effect of being reminded that the footage may be made available to individuals or organizations that request it. Regarding *C4-camera on, policy*, the most obvious contrast with *C6-camera turned on* was the source of the decision to have the camera recording, such that in *C4-camera on, policy*, the camera was on by policy, whereas in condition six, the officer appears to have individually decided to turn it on. Were these situations to happen in the field, the most likely reason for an officer to turn on their camera in either instance would be department policy, but the way it was presented here may have obscured that. Thus, it is possible that the reason *C6-camera turned on* was so positive was that the participant attributed the decision to turn on the camera to the officer himself and therefore interpreted it as a signal of the officer’s character.

The approach that typically received the most negative responses was *C5-camera turned off*. In this condition, the officer took a brief moment at the beginning of the encounter to turn off his camera, while stating that he was doing so. Policy approaches

to assuaging concerns about BWCs and witness might require officers to turn off their cameras before interacting with these citizens, but our results suggest that this may be problematic, especially for perceptions of trust, trustworthiness, and procedural fairness. Evaluation of the video for this condition does not suggest any meaningful rationale for why the officer would turn off the camera and may have even suggested that there was good reason for the officer to keep the camera on. In practice, turning off a camera would often be an action based in policy, but in this condition, this was not stated. Instead, these participants may have also interpreted the behavior as an individual decision by the officer to turn off the camera and, therefore, as a signal of the officer's desire not to be monitored. It is important to note that empirical support for this potentiality is beyond the data collected here but comparisons with the condition in which the camera was turned off and the reason was stated (*C3-camera off, policy*) do reveal significantly more positive responses for trust, trustworthiness, and procedural fairness. Confidence in the participant's determination during the eyewitness task was also particularly low when the camera was turned off without explanation but concerns about officers' character seem unlikely to have driven this effect as it is not clear why these concerns would elicit lower confidence.

A second potential policy approach to addressing BWC privacy concerns might simply be to not have a camera at all during these encounters, but our data again suggest that this may not be optimal. *C1-no camera* also received relatively negative ratings, but it is important to note that it was less likely than *C5-camera turned off* to be significantly lower than the other conditions. Notably, the other condition which could help assuage privacy concerns, *C3-camera off, policy*, was more neutral. Although never eliciting the most positive responses, this condition was consistently perceived more positively than either *C5-camera turned off* or *C1-no camera*. Thus, it seems that if departments want to address privacy or other concerns with BWC usage, explaining that the camera is not recording by policy appears to create fewer problems than not explaining or not having a camera at all.

Limitations and implications

The results have clear implications for BWC deployment but are tempered by three important methodological limitations. First, our use of a low-level offense with a relatively homogenous sample likely serves to negate other important predictors of witness cooperation. Our majority White sample did include a variety of education and income levels but generally reported levels of trust, trustworthiness, and procedural fairness above the mid-point (approximately 10–20% of the sample reported means below the mid-point) suggesting that we at least failed to include those with an orientation away from cooperation with the police. Second, in the interests of prioritizing experimental control, our study does not recreate all of the particularities of citizen–police interactions. The stakes of interacting with our video officer are simply not comparable with those of interacting with the police in the field nor does the study allow for the influence of situation variables like previous relationships between the suspect and the witness or neighborhood level effects. This limitation also overlaps with our third, which is that none of our participants were actually being recorded. Thus, all of our participants would have understood that none of their responses would be played in court or subject to FOIA.

Together, these limitations likely suggest that the results of the current research probably represent a ceiling for the potential effect of BWCs, such that in the “real world,” other concerns may be more important (see for example the “liberation hypothesis”; Kalvin & Zeisel, 1966). Nonetheless, the fact that our results are largely consistent with research on BWCs using other methods which also generally find positive effects of camera presence and/or activation does suggest that they merit some confidence. Thus, although limited by its lack of ecological validity, the current research contributes to this literature a stringently controlled test of the effects of a witness experiencing a camera during a computer-mediated, video encounter with an officer. As a result, and unlike previous research, our approach allows for a direct test of counterfactual situations without concern about confounds like changes in the setting or the officer’s tone: We were able to test what would have happened if, in a given situation, the officer had worn or not worn the camera, turned the camera on or off, and provided or not provided an explanation, with or without a mention of FOIA. Thus, although these results should not be taken as definitive, they do contribute to an increasingly complete picture of the impact of BWC deployment generally. Specifically, this work suggests that, at least during a hypothetical police–witness interaction, the existence of a camera does not appear to have negative effects, and whether the camera is recording may be important for more positive outcomes. Our results further suggest that increasing the salience of the recording camera is beneficial, but that not all methods are equally effective. In our research, participant responses were generally most positive when the officer deliberately turned on the camera. Noting a department policy requiring the officer to disclose that the camera was recording was also generally perceived positively, but the benefit of this approach beyond that of simply having a camera was generally negligible.

Conclusion

In summary, the current research echoes the generally positive results regarding BWCs, finding little evidence of a chilling effect on witnesses, at least in this hypothetical encounter. Real witnesses will likely have different stakes and potentially different concerns in speaking with police on camera, but our research suggests that when BWCs impact witnesses, that effect is generally positive. We therefore stand with the majority of the research evaluating this new technology and are cautiously optimistic about its deployment.

Acknowledgements The authors gratefully acknowledge Assistant Chief Ken Plaga and Officer Richard Grillo of the Meridian Township Police Department and Dr. Adam Zwickle for their help in designing and filming the condition videos. The authors are also grateful to Drs. Caitlin Cavanagh, Justin Nix, Sean P. Roche, and Scott Wolfe for their collegial support and feedback in the preparation of this manuscript.

Data availability statement The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflicts of interest.

References

- Blitz, J. (2015). Police body-worn cameras: Evidentiary benefits and privacy threats. *Wake Forest Journal of Business and Intellectual Property Law*, 1.
- Bornstein, B. H., Laub, C. E., Meissner, C. A., & Susa, K. J. (2013). The cross-race effect: Resistant to instructions. *Journal of Criminology*, 2013, 1–6. Article ID 745836. <https://doi.org/10.1155/2013/745836>.
- Crow, M. S., Snyder, J. A., Crichlow, V. J., & Smykla, J. O. (2017). Community perceptions of police body-worn cameras: The impact of views on fairness, fear, performance, and privacy. *Criminal Justice and Behavior*, 20(10), 1–22.
- Hamm, J. A., Trinkner, R., & Carr, J. D. (2017). Fair process, trust, and cooperation: Moving toward an integrated framework of police legitimacy. *Criminal Justice and Behavior*, 44(9), 1183–1212.
- Hawdon, J., & Ryan, J. (2011). Neighborhood organizations and resident assistance to police. *Sociological Forum*, 26, 897–920.
- Hedberg, E. C., Katz, C. M., & Choate, D. E. (2016). Body-worn cameras and citizen interactions with police officers: estimating plausible effects given varying compliance levels. *Justice Quarterly*, 1–24.
- International Association of Chiefs of Police (2014). Model policy for body-worn cameras. Retrieved from http://www.theiacp.org/model-policy/model_policy/body-worn-cameras/.
- Kalvin, H., & Zeisel, H. (1966). *The American jury*. Boston: Little, Brown, and Company.
- Katz, C. M., Choate, D. E., Ready, J. R., & Nuño, L. (2015). Evaluating the impact of officer worn body cameras in the Phoenix police department. Phoenix, AZ: Center for Violence Prevention & Community safety, Arizona State University.
- Lafayette Group (2015). Major Cities Chiefs and Major Counties Sheriffs Survey of Technology Needs – Body Worn Cameras. Retrieved from <https://assets.bwbx.io/documents/users/iqjWHBFdfxIU/rvnT.EAJQwK4/v0>
- Lin, R. (2016). Police body worn cameras and privacy: retaining benefits while reducing public concerns. *Duke Law & Technology Review*, 14(1), 346–365.
- Maury, K. J. (2016). Police body-worn camera policy: balancing the tension between privacy and public access in state law. *Notre Dame Law Review*, 92(1), 479–512.
- Miller, L., Toliver, J., & Police Executive Research Forum (2014). Implementing a body-worn camera program: recommendations and lessons learned. Washington, DC: Office of Community Oriented Policing Services.
- Pickett, J. T., Nix, J., & Roche, S. P. (2018). Testing a social schematic model of police procedural justice. *Social Psychology Quarterly*, 81, 97–125.
- Reisig, M. D., & Lloyd, C. (2009). Procedural justice, police legitimacy, and helping the police fight crime: Results from a survey of Jamaican adolescents. *Police Quarterly*, 12, 42–62.
- Simmons, K. C. (2015). Body-mounted police cameras. A primer on police accountability vs. privacy. *Howard Law Journal*, 58, 881–890.
- Tyler, T. R., & Fagan, J. (2008). Legitimacy and cooperation: why do people help the police fight crime in their communities? *Ohio State Journal of Criminal Law*, 6, 231–277.
- White, M. D., Gaub, J. E., & Todak, N. (2017). Exploring the potential for body-worn cameras to reduce violence in police-citizen encounters. *Policing*, 1–11.
- Young, J. T. N., & Ready, J. (2016). A longitudinal analysis of the relationship between administrative policy, technological preferences, and body-worn camera activation among police officers. *Policing*, 12, 27–42.

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

J. A. Hamm, PhD, MLS: Joe is an assistant professor, jointly appointed in Michigan State University's School of Criminal Justice (primary) and Environmental Science and Policy Program. His work focuses on conceptualizing, measuring, and modeling public trust in governmental entities like the police, courts, and natural resource authorities.

A. M. D'Annunzio , MPP: Alec is a recent graduate of Michigan State University, holding degrees in Criminal Justice and Public Policy. His main academic interests surround examining legislative and judicial impacts on the American Criminal Justice System. As part of his studies, Alec performed extensive BWC policy research in a professional capacity within the Michigan Legislature.

B. H. Bornstein , PhD, MLS: Brian is a professor of psychology and courtesy professor of law at the University of Nebraska-Lincoln. His major research areas are eyewitness memory and jury decision-making.

L. Hoetger , PhD, JD: Lori graduated from the University of Nebraska-Lincoln School of Law in 2014 and is currently practicing as a public defender in Omaha, Nebraska. Lori completed her PhD in Social Psychology at UNL where her research focused on legal decision-making in both adolescents and adults.

M. N. Herian , PhD: Mitch currently serves as Senior Research Associate at the University of Nebraska Bureau of Business Research. He has a wide range of applied research interests. He has published several articles on perceptions of fairness, trust in authorities, and cooperation.

Affiliations

J. A. Hamm¹ · **A. M. D'Annunzio**¹ · **B. H. Bornstein**² · **L. Hoetger**³ · **M. N. Herian**⁴

¹ School of Criminal Justice, Michigan State University, 557 Baker Hall, E. Lansing, MI 48824, USA

² Department of Psychology, University of Nebraska-Lincoln, 238 Burnett Hall, Lincoln, NE 68588-0308, USA

³ Douglas County Public Defender's Office, 1819 Farnam Street H05 Civic Center, Omaha, NE 68183, USA

⁴ Bureau of Business Research; College of Business, University of Nebraska, 730 N. 14th Street, Lincoln, NE 68588-0405, USA