

## **Research on Body-Worn Camera Usage, Kathy Pezdek**

Pezdek, K. (in press). Psychological research on the use of Body-Worn Cameras. In M. K. Miller & B. H. Bornstein (Eds.), *Advances in psychology and law*, Vol. 6. Springer.

### **Psychological Research on the Use of Body-Worn Cameras**

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I thank David Yokum and Tyler Shapland for their review of and suggestions on this chapter and thank Jennifer Sellitti in the New Jersey Public Defenders Office for her help “on the ground.”

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This chapter was written while Kathy Pezdek’s research was funded by a grant from the National Science Foundation, Program in Law and Social Sciences.

**Index Terms**

- Chilling effect
- Civilizing effect
- Dual process theories of information processing
- Evidentiary value
- *Graham v. Conner*
- Judicial outcomes
- Mediation model
- Memory trace strength theory
- Misinformation
- Policing policy
- Post-event information
- Post-event suggestion
- Procedural justice
- Reasonableness criterion
- Self-awareness
- Stress
- The Rialto Study
- Training

**Abstract**

Despite the ubiquitous use of Body-Worn Cameras (BWCs) in law enforcement in the US and elsewhere, only recently have researchers begun to examine the psychological impact of BWCs and how BWC video footage should be used in the legal system. In this chapter, several relevant psychological theories are first introduced to provide a framework for considering how BWCs might influence behavior. These include the principle of procedural justice, the principle of self-awareness, and dual process theories of information processing. The impact of BWCs on five categories of behavior is then examined: (a) civilians' attitudes, complaints, and behavior, (b) officers' attitudes and behavior, (c) evidentiary value of BWC footage, (d) officer training, and (e) the effect of viewing their BWC footage on officers' memory for a use-of-force incident. Based on the research presented, a model is proposed to account for the effect of BWCs on civilian behavior. This model captures the dynamic nature of the interaction between an officer and a civilian, with the officer's behavior mediating the relationship between the effect of the presence of a BWC on civilian behavior, and the officer's behavior affected by both the presence of their BWC and the behavior of the civilian. Where relevant, methodological challenges in doing this research are discussed and relevant forensic and legal policies that relate to the research findings are presented. The chapter ends with a discussion of promising directions for future research.

*Keywords:* Body-Worn Cameras, *Graham v. Conner*, policing, police use-of-force, officer training, memory contamination, procedural justice, principle of self-awareness, citizen complaints against police

**Psychological Research on the Use of Body-Worn Cameras**

No form of technology has been implemented in policing as rapidly and pervasively as the use of Body-Worn Cameras (BWCs), and policing around the world has changed as a result. Adoption of BWCs has been considered by almost every police department in the US. The most recent BWC report from the Bureau of Justice Statistics (Hyland, 2018) reported that in 2016, 60% of local police departments and 49% of sheriff's offices had BWCs that were fully deployed. Further, that same survey reported that about a third of sheriffs' office and local police department without BWCs at the time of the survey, had indicated that they were likely to consider acquiring them within a year. In more recent years, the number of law enforcement officers who routinely wear BWCs has only increased.

The initial appeal of BWCs was that they would (a) influence officers' behavior by increasing their compliance with department policies and (b) influence civilians' behavior by increasing their cooperation with police. And, more recently, in light of public concern in the wake of many high-profile officer involved shootings and the public call for social justice and increased police accountability, the use of BWCs is seen as a promising vehicle for increasing police legitimacy with transparency. This chapter examines the promise and the current reality of BWC adoption and utilization, and psychological principles that are likely to account for these effects.

In this chapter, several relevant theories are first introduced to provide a framework for considering how BWCs might influence behavior. These include the principle of procedural justice, the principle of self-awareness, and dual process theories of information processing. The impact of BWCs on five categories of behavior is then examined: (a) civilians' attitudes, complaints, and behavior, (b) officers' attitudes and behavior, (c) evidentiary value of BWC

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footage, (d) officer training, and (e) officers' memory. Where relevant, methodological challenges in doing this research are discussed and relevant forensic and legal policies that relate to the research findings are presented. The chapter ends with a discussion of directions for future research.

This chapter presents a detailed analysis of the subtopics mentioned above. In doing so, however, an exhaustive literature review is not reported, but rather a review that captures the primary themes and findings of representative psychological research on each topic. Although there are now numerous studies assessing the influence of implementing BWCs, this work is not often conducted from a psychological perspective. For example, within the fields of Criminology and Police Science, research on this topic has focused on how police use-of-force is affected by (a) the social dynamics of police-citizen encounters, (b) the demographics of officers who are more likely to use excessive force, (c) the climate of policing and (d) the subculture of police organizations. Although each of these factors is likely to be impacted by the implementation of BWCs, this research does not assess the impact of BWCs from a psychological perspective; that is the focus of this chapter. Several thorough reviews of BWC research from these other perspectives are available (see for example Lum et al., 2019; Maskaly et al., 2017; White, 2014).

### **Relevant Psychological Theories**

Several theories are introduced here to provide a framework for considering how BWCs might influence behavior. These include the principle of procedural justice, the principle of self-awareness, and dual process theories of information processing. These theories are derived from different disciplines, and shed light on various aspects of the effects of BWCs.

***Principle of Procedural Justice.*** One of the primary principles upon which the implementation of BWCs relies is the principle of procedural justice. Procedural justice refers to

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the idea that people regard the justice system more in terms of the perceived fairness of the *process* and how they were treated than the perceived fairness of the *outcome*. Consequently, it is important that the criminal justice system frequently demonstrates the legitimacy of their process to the public. Within the police force, this means that in interactions with the public, officers should (a) give people in the community a voice by emphasizing listening and responding to their concerns, (b) explain police policies and practices in interactions with civilians, and (c) treat the public with courtesy, dignity and respect (Tyler & Huo, 2002). Many research studies have demonstrated the value of procedural justice policing. Wood et al. (2020), for example, evaluated a large-scale training program in procedural justice policing in the Chicago Police Department. They reported that over 2-years, there was a 10% reduction in complaints against the police and a 6.4% reduction in the use-of-force. One interpretation of the proposed effectiveness of BWCs is that they foster procedural justice by enhancing perceptions of police transparency.

***Principle of Self-Awareness.*** A second interpretation of why wearing a BWC should influence the behavior of both officers and civilians relies on the principle of self-awareness. This is the notion that people behave differently when they think they are being observed, specifically when they are observed as participants in a research study. Although this is often referred to as the Hawthorne Effect, in fact, the original studies at the Western Electric Company's Hawthorne plant were confounded by other variables and were not replicated (see for example, Roethlisberger & Dickson, 1939). In a recent systematic review of the Hawthorne Effect, McCambridge et al. (2014) reported that of the nineteen research studies included in their review, most but not all found an effect of being observed on outcome measures, but the effect sizes were generally small. The effect appeared more consistently in studies in which conformity and social desirability were involved, rather than, for example, health outcomes. The social

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psychological account of the mechanism underlying this effect is that awareness of being observed engenders beliefs about the situational expectations; conformity and social desirability then lead to behavior change in the direction of these expectations (McCambridge et al., 2014).

According to the mechanism proposed above to account for the principle of self-awareness, the presence of a BWC on an officer would be predicted to affect the behavior of both the officer and involved civilians. However, critical to this interpretation of civilian behavior is whether civilians even notice that an officer is wearing a BWC. As will be discussed in later sections of this chapter, McClure et al. (2017) and others have reported that community members interacting with officers generally do not remember if the officer was wearing a BWC and if it was activated. These findings raise questions about the ability of the self-awareness mechanism to account for the effect of BWCs on civilians' behavior in any specific incident. Later in this chapter, a model is proposed that better accounts for the effect of BWCs on the behavior of officers and civilians.

***Dual Process Theories of Information Processing.*** A third class of psychological theories relevant to the effect of BWCs on officers and civilians is dual process theories of information processing. There are numerous dual process theories of information processing; here I will focus on the theory developed by Tversky and Kahneman, derived from in their 1974 paper (Tversky & Kahneman, 1974). Prior to this work, the process of thinking and decision making was considered to be a rational process, one that was effortful, requiring the allocation of attention and associated with the subjective experience of agency, choice, and focused attention. With the discovery by Tversky and Kahneman (1974) that people frequently use heuristics and biases for thinking and decision making, another avenue for thinking and decision making was revealed. Simplifying several decades of research on this topic following their 1974 paper,

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Tversky and Kahneman proposed a dual process theory for thinking and decision making. The rational process described above is called System 2 processing. The alternative is System 1 processing, which operates quickly and automatically with little effort or subjective experience of voluntary control. It is this System 1 processing that frequently utilizes heuristics and biases. Although System 1 processing is fast and efficient, it produces systematic errors as well.

In a high stress situation, common to a police use-of-force incident, it would be predicted that an officer involved would rely more on System 1 than System 2 processing. This is because dangerous interactions typically demand a fast response, and the officer is more likely to be making a decision in the face of uncertainty about what is likely to transpire. On the other hand, a civilian at the scene of a dangerous interaction is more likely to rely on System 2 processing. This is because the civilian, particularly the perpetrator, would be expected to have an action plan and thus be behaving with less uncertainty. Consequently, the civilian would have a greater opportunity for relatively more effortful rational processing. This would be true as well for anyone viewing the BWC footage of a use-of-force incident afterward. With this as a background, it is important to recognize that during a use-of-force incident, a police officer and a civilian involved in the same interaction are likely to be processing the interaction differently and making different decisions about how best to proceed. These information processing differences, rather than conscious ill-intentions, can frequently be used to account for differences in the judgments and decisions of police officers and civilians.

### **The Effect of BWCs on Civilians' Attitudes, Complaints, and Behavior**

Few studies have assessed the effect of BWCs on the behavior of civilians in the presence of police officers. The few studies on this topic have involved responses of civilians to questions about hypothetical situations regarding whether the presence of a BWC on a police officer would



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affect their willingness as victims and witnesses to cooperate with the officer and provide evidentiary information. The results of several studies on this topic are reported in the section of this chapter that follows regarding the evidentiary value of BWCs. Several other studies on the effects of BWCs on civilians' attitudes and behavior have been conducted using surveys, and these will be reported here.

Several large national surveys have indicated wide public support for the use of BWCs by police, with the level of support ranging from a low of 85% (Sousa et al., 2018) to a high of 93% (Morin et al., 2017). In these surveys, among the multiple perceived benefits of BWCs were: (a) increased police transparency and legitimacy, (b) reduction in use-of-force, (c) reduction in frivolous citizen complaints and lawsuits, and (d) facilitation of evidence gathering at crime scenes, including recording interviews with witnesses and victims. However, respondents in these surveys also raised concerns about implementing BWCs including privacy issues, possible public reluctance to provide evidence to the police, and the costs and time associated with managing BWC video footage.

In a recent survey, Miethe et al. (2019) examined factors that moderated attitudes toward the use of BWCs in policing. One of the most consistent finding was that support for BWCs was higher among people who reported higher personal involvement in social institutions and more positive beliefs about procedural fairness. This finding is consistent with the above discussion regarding procedural justice, and suggests that incorporating BWCs in policing is likely to foster public perceptions of procedurally just policing. Few demographic factors were related to attitudes toward BWCs with the exception that respondents younger than 30 years of age were less supportive of the use of BWCs by police and Black and Latinx respondents were less supportive than White respondents of BWC use in local neighborhood patrols. Similar findings

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regarding more limited support for BWCs in policing by younger people and non-White people were reported by Crow et al, (2017).

Critically, it is important to note that there are several limitations with using surveys to research the effects of BWCs on civilians' attitudes and behavior. First, most people never have direct contact with police officers, whether police officers are wearing BWCs or not. Thus, civilians' responses to surveys on this topic simply represent their speculations about hypothetical situations that they most likely never experienced. The validity of these responses is thus questionable.

Second, even if a civilian had directly interacted with a police officer, it is very unlikely that they even noticed whether the officer was wearing a BWC. The gear that most police officers wear weighs almost 30 pounds. In addition to a BWC, this gear includes at least their ballistic vest, radio (often mounted on their shoulder), cellphone, gun, pepper spray, Taser, baton, two pairs of handcuffs, and flashlight. In the context of all of this other gear, an officer's BWC, often mounted on their chest or shoulder, is not especially salient to observers. This point has been supported by several research studies. McClure et al. (2017) interviewed community members who had interacted with officers between one and two weeks after the encounter. When asked whether the officer had been wearing a BWC, 43% did not remember. Of the 57% of respondents who indicated that they remembered whether the officer was wearing a BWC, only half of these remembered correctly. In a similar study, White et al. (2017) interviewed 249 civilians from their Spokane study who had had BWC-recorded encounters with police officers. Only 28.5% were aware that a BWC had been present during the encounter. If civilians are generally not aware when an officer is wearing a BWC, this suggests that if the presence of a BWC affects the behavior of civilians, it is because of the interactive effect that the BWC has on

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the officer and is not likely to be a direct effect of the BWC on civilians. In other words, the BWC improves the officer's behavior, and it is this improvement in the officer's behavior that reduces potential conflict between the officer and civilian. This thesis will be further developed in the proposed model presented later in this chapter.

### **The Effect of BWCs on Officers' Attitudes and Behavior**

Advocates and critics of BWC technology have argued that one of the major potential benefits of BWCs is their "civilizing effect," leading to improved behavior by both police officers and civilians. Numerous studies have been conducted with police departments as they implement BWCs. These studies vary in terms of the rigor of their research design and the adequacy of their sample size for statistical power. A representative sample of these studies will be reported here with discussion of the methodological strengths and weaknesses included.

The first randomized controlled trial (RCT) study of BWC implementation was conducted in Rialto, California by then-Chief William Farrar as his thesis research at Cambridge University. This study became known as the Rialto Study. The results were published by Ariel et al. (2015). All 54 frontline officers in the Rialto Police Department participated in this study. Starting in February 2012, on a weekly basis, officers were randomly assigned to a shift for that week in which they were to wear a BWC or a shift in which they were not to wear a BWC. *Thus, the shift and not the officer was the unit of analysis in this study.* While this is not an ideal research design, given the size of the police department, this design was necessary to obtain a sufficiently powered experiment to detect the presence of any effects.

Two outcome measures were used in the Rialto Study. In terms of frequency of use-of-force by police officers, although there were few use-of-force incidents during the 12-month period of this study, 17 occurred in the no-BWC control condition and 8 occurred in the BWC

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condition. This represents a difference between a mean rate of .78% and .33% per 1,000 police-public contacts. There was also a significant reduction in the frequency of use-of-force incidents from 67 in the 12 months prior to the study to 25 during the study period. In terms of the frequency of complaints against officers, only 3 complaints were filed against officers during the 12-month period of this study, thus no conclusions can be drawn regarding the impact of BWCs on this factor. However, there was a significant reduction in complaints filed against officers from 24 in the 12 months prior to the study to 3 in the 12 months during the study period. These results support the beneficial effects of BWCs on improving police behavior. It is important to note that the presence of BWCs was manipulated within officers in this study; over the duration of the study, officers were assigned to wear their BWCs on half of their shifts with no BWC for the other half of their shifts. Thus, the possibility exists that there was a “spillover effect” from each officer’s BWC shifts to their no-BWC control shifts and vice versa. If so, then the results obtained in this study could either underestimate or overestimate the true beneficial impact of BWCs.

Two questions follow from the results of the Rialto Study reported above by Ariel et al. (2015). First, do the effects reported with the initial implementation of BWCs persist beyond the 12-month duration of the study? Specifically, do officers (and civilians) become desensitized to the presence of BWCs, limiting their effectiveness over time? Sutherland et al. (2017) assessed this question by extending data collection from the original Rialto Study for three years. Just prior to the beginning of this second study, the Rialto Police Department issued BWCs to all frontline staff. During the three-year post-experimental study, despite the significant increase in the number of arrests compared to the period of initial BWC implementation, there was a significant decrease in both the number of use-of-force incidents reported and the number of

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complaints filed against police. The initial drop in incidents of use-of-force and complaints against police with the implementation of BWCs did not fade over time; it persisted over the subsequent three-year period when all officers were wearing BWCs.

The second question that follows from the above two studies is whether these findings regarding the effectiveness of BWC implementation are somehow idiosyncratic to Rialto, California, or if these findings generalize to other police departments. Subsequent to the original study by Ariel et al. (2015), there have been several studies of the impact of BWC implementation in numerous other police departments here and abroad, using a variety of different research designs. Ariel et al. (2016) implemented an RCT design using a methodology identical to that used in the Rialto Study in a dozen other jurisdictions in the United States and the United Kingdom. They reported a consistent reduction in complaints against the police with the implementation of BWCs. However, regarding incidents of use-of-force, the results were inconsistent across jurisdictions; use-of-force increased with BWCs in some jurisdictions and decreased in others, with some of these effects significant and others not. One serious limitation with these studies is that the sample size per study was insufficient to achieve adequate statistical power. This is problematic because it precludes any decisive conclusions about the true effect of BWC implementation.

Positive results of implementing BWCs were reported in a large RCT study conducted in the Las Vegas Police Department by Braga et al. (2018). For the one year duration of the study, 218 officers were assigned to wear BWCs and 198 were assigned to the no-BWC control condition. Officers assigned to the BWC condition made more arrests and issued more citations than those in the no-BWC control condition. Nonetheless, in the BWC condition, there were

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fewer use-of-force reports and fewer complaints against officers than in the no-BWC control condition.

On the other hand, statistically nonsignificant (and very small) effects of BWCs on incidents of police use-of-force and complaints against police were reported by Yokum et al. (2019). This was an RCT study that involved more than 2,000 police officers from the Metropolitan Police Department in Washington, DC, between 2015 and 2016, with half of the officers within each unit assigned to wear a BWC and half not assigned to wear a BWC. In the Rialto Study by Ariel et al. (2015), randomization was at the level of shift rather than officer. Their design raises concerns about within-officer spillover given that across the duration of the study, each officer participated in both BWC and no-BWC shifts. The design of Yokum's study precludes this criticism, but raises concerns about a different possible spillover effect; that is, between officers in the BWC versus control conditions, in light of the fact that both conditions occurred within each unit. The authors assessed this possibility by comparing incidents as a function of whether all, none, or a mix of the officers responding to the scene were wearing BWCs. Spillover would be more likely to occur for incidents when a mix of officers were wearing BWCs compared to when none were. The effects were null in this analysis. These issues highlight the difficulty designing an assessment of the utility of BWCs in real police departments. Each research design, even RCT research designs, has its limitations.

Results similar to those reported by Yokum et al. were reported by Braga et al. (2018) in an RCT study conducted in the Boston Police Department (BPD) in 2015. For the one-year duration of the study, a total of 140 officers were assigned to wear BWCs; 141 other officers were assigned to the no-BWC control condition. The two BWC conditions were assigned between (not within) the 10 BPD districts. Consequently, both between-officers and within-

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officer spillover effects would have been minimized. The researchers reported no significant differences between the two BWC conditions in complaints against officers or police use-of-force. However, it is interesting to note that the overall city-wide incidence of both complaints against officers and police use-of-force decreased in Boston from the years 2014 to 2016. This suggests that the effect of BWC adoption might be a general effect and not an effect specific to any officer-civilian interaction. This suggestion will be explored below. However, in light of the nation-wide police protests and civil unrest in the past several years, researchers should be reluctant to make causal inferences about the use of BWCs from year-to-year changes in crimes and police behavior.

### **Proposed Model Integrating Research Regarding How BWCs Affect Behavior of Officers and Civilians**

What conclusions can be drawn from the research on the effect of BWCs on the behavior of officers and civilians? It is clear from the research reviewed above, that the effects of BWCs on police use-of-force and civilian complaints against police are small; the large effects of implementing BWCs that were initially anticipated have not been borne out. It is also clear that the principle of self-awareness is insufficient to account for the effect of BWCs on the behavior of officers and civilians. Further, the mixed research findings do not seem to be related to differences across studies in the research design utilized, the adequacy of the sample size, or the nature of the BWC intervention. A model is proposed here to frame the effect of BWCs on police officers and civilians within the context of the interaction between these two dynamic groups rather than focusing on police officers and civilians as two static independent groups, which characterizes most of the previous research.

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According to the proposed model, the presence of a BWC on a police officer does not have a substantial direct effect on a civilian with whom they are interacting. This is because, as argued above, members of the public do not generally notice when an officer is wearing a BWC or when it is activated (McClure et al., 2017; White et al., 2017). Further, this is especially likely to be true in a stressful situation, when executive functioning is impaired (Diamond, 2013); when civilians are interacting with police, this is likely to be a high stress situation. Thus, although civilians might be generally aware that the police in their area have adopted BWCs, it is unlikely that they will specifically notice whether the officer they are interacting with has a BWC on or if it is activated. This would account for the finding reported above by Braga et al. (2018) in their 2015 study in the Boston Police Department. They reported that although there was not a significant difference in complaints against officers or police use-of-force between officers randomly assigned to wear a BWC and those in the no-BWC condition, both of these indices decreased city-wide in Boston between 2014 and 2016. It is possible that there was a general awareness that the Boston Police Department was starting to implement BWCs in 2015, and this general awareness was sufficient to change public behavior. Again, however, researchers should be reluctant to make causal inferences about the use of BWCs from year to year changes in crimes and police behavior, especially in light of the nation-wide police protests and civil unrest in the past several years.

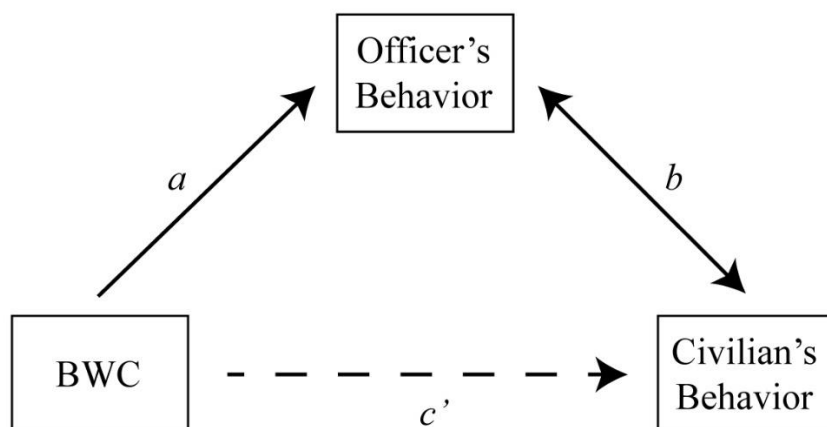
On the other hand, although a civilian is not likely to notice if an officer they are interacting with is wearing a BWC, the officer is more likely to be aware of the fact that their BWC is on and activated. This view is supported by the results of Huff, et al. (2020) who reported that BWC activation produced different effects than BWC assignment alone. For example, in this large-scale RCT study of 436 Phoenix police officers, whereas BWC assignment



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alone was not associated with civilian complaints, BWC activation significantly reduced civilian complaints. Further, although the frequency of arrests and complaints were not affected by BWC assignment alone, there were significantly more arrests and fewer complaints in incidents involving officers who were assigned BWCs and activated them.

In this model, it is proposed that it is the officer's awareness of the presence of the BWC that impacts their own behavior, decreasing confrontation and increasing adherence to police guidelines. It is then this change in the officer's behavior that mediates the effect of the BWC on civilian behavior, and it is then the civilian's behavior that determines whether use-of-force is considered warranted by the officer. The proposed model, depicted in Figure 1, captures the dynamic nature of this interaction between an officer and a civilian, with the officer's behavior mediating the relationship between the effect of the presence of a BWC on civilian behavior, and the officer's behavior affected by both the presence of the BWC and the behavior of the civilian. It is proposed that the presence of the BWC has a relatively small direct effect on civilian behavior, depicted by the dashed line,  $c'$ , in Figure 1. This model suggests that future research that seeks to document the impact of BWCs on civilians' behavior, without looking at the mediating effect of officers' behavior, is not likely to be sufficiently sensitive to detect true effects.



*Proposed Mediation Model for the Effect of BWCs on Behavior of Officers and Civilians.*

The indirect path between the impact of BWCs and civilian behavior is indicated by unidimensional path  $a$  and the bidirectional path  $b$ . Path  $c'$ , a relatively weaker path, is the direct effect of the BWC on civilian behavior after the indirect path has been removed.

This model also has implications for policy changes that would promote a stronger direct effect of BWCs on civilian behavior, something that should be desirable for police officers. This would likely occur if a civilian in a police interaction was made aware of when a BWC is present and activated, for example, by having the officer simply verbally stated that their BWC was activated. This, in fact, occurred in another phase of the previously discussed study by McClure, et al. (2017). They compared the effects of BWC implementation against a no-BWC condition and used two BWC conditions. One group of officers was assigned BWCs with no other changes in policing. The other group of officers was assigned BWCs and was instructed to inform community members at the time of their first contact, using a script specifying, “I would like to inform you that our interaction is being recorded.” In their study, this script was added to

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enhance procedural justice perceptions of police and not awareness of the presence of the BWC, the factor recommended here. The outcome measure was public satisfaction with police encounters, using several elements of procedural justice. McClure and colleagues reported that the use of the script significantly improved public satisfaction with police encounters; the presence of the BWC alone did not.

Many police leadership organizations (Miller et al. 2014), and civil rights groups (see for example, the amicus letter submitted by The Leadership Conference on Civil and Human Rights, 2017), advocate allowing minimal officer discretion regarding when officers should activate their BWCs. Similarly, Stanley (2015), in a statement by the ACLU, advocated strict limits on officers' ability to choose which encounters to record. However, unfortunately, most police departments have a "one-party" consent law that does not require citizen advisement. Relevant here is also the issue of the specific point at which an officer should be required to turn on their BWC. In many police departments, officers have discretion when to turn on their BWC. For example, this is specified in the NYPD policies as the point at which the officer considers that an interaction is "with persons suspected of criminal activity." However, many interactions start with people who are not initially "suspected of criminal activity," and it is important to capture this context for what might transpire later in the interaction. If officers are required to activate their BWCs in all interactions with the public, this would also require citizen advisement of BWC activation in all interactions with the public. A compromise solution, endorsed by the Police Executive Research Forum (see Miller et al, 2014), is to give officers the discretion not to record when doing so would be "unsafe, impossible or impractical." However, when an officer terminates their BWC recording, it is suggested that they be required to document their reason for doing so, either on their BWC recording or in writing. The point here is that determining the

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most effective uses of BWCs cannot be made without considering the development of corresponding policing policy.

### **The Evidentiary Value of BWCs**

Moving forward, perhaps one of the most promising potential contributions of the use of BWCs is for its investigative and evidentiary value. Much information can be collected on BWCs, information that is less likely to be volunteered by victims and witnesses and less likely to be available later other than by hearsay. Further, this information has the potential to be more compellingly presented to triers of fact because it is an objective first-person account presented with vivid audio and visual detail. A BWC recording of an interaction between an officer and a civilian can also be valuable for capturing the state of mind of each participant. The importance of capturing an officer's state of mind at the time of an incident will be discussed later in this chapter in the context of assessing the "reasonableness" criterion, defined as being "judged from the perspective of a reasonable officer on the scene" (*Graham v. Conner*, 1989, p. 396). The "reasonableness" criterion is the basis for assessing whether an officer's use-of-force was justified or if it was excessive; this is critically important because excessive use-of-force can be considered a terminable offense. Similarly, a civilian's state of mind can typically only be inferred afterward unless it was recorded at the time of the incident. BWC recording of an event can also provide a more nuanced picture of an event and the context in which it occurred. Because there is little research on the evidentiary value of BWC footage in the real-world, much of this section of the chapter will draw on related research from other fields and informed speculation.

The first issue addressed in this section is whether the presence of a BWC on a police officer affects the willingness of victims and witnesses to cooperate with the officer and provide

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evidentiary information. In the policing sequence of events, the first concern is whether civilians would be less likely to call the police to a suspicious incident if they knew that the officer would arrive with their BWC activated. Ariel (2016) tested this hypothesis by comparing the number of emergency calls from two areas of Denver in which patrol officers either wore BWCs or not. The presence of BWCs lead to more emergency calls in low crime density residential areas; in high crime density areas, there was no difference as a function of BWCs. Although inconclusive, these findings offer no support for the hypothesis that the presence of BWCs produce a “chilling effect” and reduce the willingness of civilians to call the police.

This issue has also been addressed with two surveys. In a report by the Toronto Police Service (2016), civilians reported that BWCs would not impact their willingness to talk to the police as a victim. However, they reported that they would be less comfortable being recorded by BWC as a witness in an investigative or enforcement situation. In a similar study by the Edmonton Police Service (2015), respondents indicated that in speaking with an officer who has their BWC activated, they would be less willing to just chat with an officer, but they would be willing to speak about a witnessed incident. These findings though are limited because they rely on retrospective surveys with no support from behavioral data.

The hypothesis that deploying a BWC might have a “chilling effect” on the willingness of civilians to talk with police was tested in an experimental laboratory study by Hamm et al. (2019). In their online study, a large sample of MTurk workers viewed a short video of a man engaged in a suspicious activity. They were then interviewed online by an officer under several conditions in which the presence of the officer’s BWC and whether it was activated were varied. They then completed a questionnaire. When the officer’s camera was present and activated, these eyewitnesses (a) reported that they were more comfortable answering the officer’s questions, (b)

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used more words in their responses, and (c) reported more positive perceptions of the officer. On other dimensions of this experience, there were no significant effects of these conditions.

Although these findings suggest that the presence of a BWC does not have a “chilling effect” on eyewitnesses, conclusions from any online study on this topic are limited because the participants likely would know that in reality, the officer’s BWC was not actually able to record them.

The second issue addressed in this section of this chapter is whether the evidentiary information captured by BWC footage is more likely to lead to arrest, prosecution, pleas and conviction of suspects. Hearing the exact words spoken by a suspect and seeing their precise actions can be extremely compelling and relatively indisputable. When this occurs, the prosecution is more likely to pursue a guilty verdict or a plea, avoiding lengthy trials, thereby reducing the amount of time that an officer needs to spend in court and preparing for a trial. In considering the evidentiary value of BWC footage, it is important to consider the relative impact of the BWC footage as evidence compared to other types of evidence likely to be available to triers of fact, and this is likely to vary depending on the type of case. For many types of charges, the only other types of evidence likely to be available are the verbal accounts of the victim and the officer, the evidentiary value of which is limited by problems with human memory and source credibility. However, support for the evidentiary value of BWCs is challenging to document empirically.

In the study reported above by Yokum et al. (2019), in addition to assessing the effect of BWCs on officers’ behavior, the researchers also examined a range of judicial outcomes as a function of officers wearing BWCs or not. This study involved more than 2,000 Metropolitan Police Department officers in Washington, DC. Across all types of calls, they reported no

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difference between the two BWC conditions on the basis of numerous measures of judicial outcomes, including frequency of prosecutions, court appearances, convictions, and pleas.

Two more recent studies have examined the effect of BWCs on judicial outcomes in two specific types of criminal cases. Morrow et al. (2016) assessed the evidentiary value of BWCs in cases of intimate partner violence (IPV). Despite the high rate of IPV incidents in the United States, IPV has relatively low rates of prosecution and conviction. For example, in a review of this literature, Garner and Maxwell (2009) reported that IPV cases result in prosecution only 58% of the time even for incidents involving an arrest, and of these IPV cases prosecuted, only 35% - 48% resulted in convictions.<sup>1</sup> Successful prosecution and conviction of criminal cases relies on the quality of the evidence. In IPV cases, the critical evidence is most often the emotional and physical distress of the victim at the time of the incident. The low rates of prosecution and conviction in IPV cases could be accounted for by the fact that this type of evidence is hard to capture and hard to convey compellingly to a jury some time later. Also, as mentioned above, the inherent problems with human memory and source credibility would raise concerns among triers of fact regarding the credibility of this type of evidence, especially after a significant time delay. Thus, IPV cases are likely to be a promising domain for the use of BWCs.

Morrow et al. (2016) compared IPV arrest, prosecution and conviction rates in a large precinct of a metropolitan area for two 15-month periods, pre- and post-adoption of BWCs between 2012 and 2014. Post-adoption of BWCs, cases were significantly more likely to result in arrests, have charges filed, have cases furthered, receive guilty pleas, and receive guilty verdicts

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<sup>1</sup> For comparison, the Bureau of Justice Statistics (2018), reported that among defendants charged with a felony, 68% were convicted, with conviction rates highest for defendants charged with motor vehicle theft (74%) and lowest for those charged with assault (45%).

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at trial. The average time to process the cases was also significantly shorter post-adoption. These findings were attributed to the fact that BWCs improved the quality of the evidence collected in IPV cases and captured the physical and emotional distress of the victim rather than relying on a verbal description of this later. Also, because IPV victims are frequently unwilling to testify at trial, the use of BWC footage makes it possible to prosecute more cases even without the testimony of an IPV victim, and this evidence can be presented to the triers of fact in a manner that is more compelling than simply listening to the officer's verbal account.

White et al. (2019) conducted a similar study to assess the evidentiary value of BWCs on the adjudication of drug and alcohol cases. It was hypothesized that BWCs would be especially effective for documenting probable cause for search and for documenting evidence such as drug possession or a failed sobriety test. Officers in a large metropolitan police department were randomly assigned to either a BWC condition or a no-BWC condition in the years, 2015 - 2016. Within the period of this study, officers in this department initiated 7,201 misdemeanor drug and alcohol cases. The presence of a BWC did not affect the number of guilty outcomes. Presence of a BWC was only significant in reducing the time to adjudication (by 6.1%). One reason why BWCs apparently had less evidentiary value in drug and alcohol cases than in IPV cases is that in drug and alcohol cases there are other means of collecting critical evidence such as with breathalyzer and blood tests, and these other sources of evidence are relatively indisputable. This supports the thesis presented above, that BWCs will be especially helpful in adjudicating criminal cases when other critical evidence is less likely to be available.

Another relevant issue on the topic of the evidentiary value of BWCs is how the presence of BWC footage of a police-civilian interaction affects complaints filed against police officers. Katz et al. (2014) examined this question in a subset of the data set described above by Morrow



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et al. (2016), in which comparisons of pre- and post-adoption of BWCs were made in a large precinct of a metropolitan police department between 2012 and 2014. In the target group, complaints against police and charges of misconduct, gathered from the department's Professional Standards Bureau, decreased significantly (-22.5%) from pre- to post-adoption of BWCs. This is in comparison to a 45.1% increase in comparable data for all patrol officers in this city over the same period of time. In terms of the outcomes of complaints investigated by the department's Professional Standards Bureau, from pre- to post-test employment of BWCs, there was a significant 64.9% increase in *unfounded cases* and a 53.1% decrease in *founded cases* over the period of the study. This is in comparison to a 3.5% increase in unfounded cases and a 4.2% decrease in founded cases for all patrol officers in this city over the same period of time. These data suggest that even if a citizen complaint was filed against an officer wearing a BWC, the video evidence was more likely to support the officers' actions than harm them. Similar results were reported by Ariel et al. (2015) in the Rialto Study, the first randomized controlled trial (RCT) study of BWC implementation. In that study as well, significantly fewer civilian complaints against officers were reported when officers were randomly assigned to a BWC-present shift than a BWC-not present shift.

Together, these findings suggest a significant cost-savings of BWCs to police departments in terms of time saved prosecuting frivolous complaints against police and claims of police misconduct. As with other types of charges, civilians are apparently less likely to file a complaint and suspects are more likely to accept a guilty plea when there is BWC evidence available, evidence likely to be considered relatively indisputable. As a side note, it is interesting that the trends reported above by Katz and colleagues were not evident in officers' self-report

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data, which only raises questions about the utility of retrospective self-report data in studies in this area.

### **The Use of BWCs in Officer Training**

Although BWCs appear to have a significant potential for improving officer training, no data exist to assess the extent to which BWCs are being used for this purpose. Further, few studies have assessed the effectiveness of BWCs in officer training. Thus, this section of the chapter is less data-based and relies more on informed speculation based on what is known about effective principles of learning more generally.

In one of the few studies of the use of BWC in officer training, Phelps et al. (2018), tested Norwegian police students who were being trained on “reflective practice.” Reflective practice, which is considered an important part of police education (Copley, 2011), is “the process whereby knowledge is created through the transformation of experience” (Kolb, 1984, p. 38), and involves deliberating upon and critically evaluating one’s behavior in a specific experience. In their study, two groups of officers participated in several training activities. Afterward, one group received reflective practice training in the context of which they viewed the first-person perspective BWC footage of their participation. The other group received the same reflective practice training but without viewing their BWC footage. Officers trained with BWCs were more likely to report that they had identified mistakes they made during training, and to recall more instances of learning and reflection. Although these are promising results regarding the use of BWCs for police training, it is important to note that this study was limited to self-report measures of reflective practice; no behavioral outcomes were assessed nor did the researchers assess the generalizability of this training to other activities, both important qualities of any training activity.

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Why would police training be especially effective if it incorporated an officer's first-person BWC video of a critical incident? Experiential learning is a critical part of police training because officers must learn appropriate decision making skills in the context in which these skills are likely to be needed in the field. Consequently, simulations are frequently used in police training. When an officer participates in a training simulation, much as when they participate in a real-world interaction, they would likely be using what is described above in the dual process theory of information processing, as System 1 processing – that is, fast automatic processing. However, because of the limited cognitive effort utilized in System 1 processing, it is not as likely to result in the level of learning required to affect future decision making as is slower more effortful System 2 processing. A training intervention that gives officers the opportunity to reflect on their own behavior in an interaction – either a real-world interaction or one simulated for training – gives an officer the subsequent opportunity to do System 2 processing of what transpired. Viewing the first-person BWC footage of their participation in an interaction, especially with the assistance of a trained instructor, would be one such training intervention. This more effortful processing, elucidating what would have improved the outcome of the original intervention, is likely to lead to better learning that generalizes to future interactions.

There is another approach to using BWC footage in police training. Officers can be shown samples of BWC footage of other officers' encounters and these interactions can be discussed with a trained instructor. This approach would be predicted to improve learning relative to more traditional instructor-driven training. However, both System 1 and System 2 processing of *an officer's own BWC recording of an interaction* is more likely to facilitate learning. This is because in this situation, the officer/trainee is the first-person in the video, so they would be assessing the concrete reality of what they actually did and not hypothetically

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what they would have done. Also, by collecting BWC recordings of individual officers' interactions over time – perhaps even over many years – it can be determined whether each officer's responses have improved in effectiveness and generalized to similar interactions. This type of assessment could be made from an officer's BWC recordings of either real-world interactions or training simulations.

### **How Viewing BWC Footage Affects Officers' Memory**

Because most of the research on the influence of BWCs has been conducted in the disciplines of Criminology and Police Science, there are few studies assessing the cognitive question of how viewing BWC footage of their participation in an event affects an officer's memory for the event and their state of mind during the event. This is an important issue following from the US Supreme Court decision of *Graham v. Conner* (1989). This case concerns the merits of all legal claims against law enforcement officers accused of excessive use-of-force, such as a shooting or in-custody death, during the course of an arrest, investigatory stop, or other "seizure" of a person (*Graham v. Conner*, 1989). These are, in fact, the situations in which BWC video is most critically considered.

In its ruling, the Court concluded that a test criterion of "reasonableness" must be used when assessing the actions of law enforcement officers in these situations. This "reasonableness" criterion was subsequently defined as being "judged from the perspective of a reasonable officer on the scene, rather than with the 20/20 vision of hindsight" (*Graham v. Conner*, 1989, p. 396). If an officer's original memory for an event and their state of mind at the time of the event determines "reasonableness," then it is important to ensure that the officer's memory is not distorted. There are several reasons to think that viewing their BWC of an event might, in fact, distort the participating officer's memory for the event.

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First, why question the accuracy of a police officer's memory for a use-of-force incident in which they were an active participant? Within the field of cognitive science, it is well known that memory is an imperfect, schema-driven process. For example, similar to classic findings by Bartlett (1932), Holst and Pezdek (1992) reported that in a mock trial setting, people "remembered" script-consistent details of a robbery even if those details had not been presented. These results suggest that people have scripts in memory for typical crimes, and when these scripts are activated, people incorporate into their memory, script-relevant information that was not actually presented. Similar findings were reported by Greenberg et al. (1998). It might be argued that this effect is less likely to occur when people actively participate in an event, as an officer does, rather than when they simply witness a video of it. However, this does not appear to be the case. Hope et al. (2016) compared police officers' memory for a simulated scenario that they either participated in or just observed. Memory was less accurate for officers who participated in the scenario than for those who simply observed it. Similar results were reported by Ihlebæk et al. (2003) and Kassin (1984).

A major cognitive factor that is likely to affect the accuracy of an officer's memory for a use-of-force incident is the suggestive influence of post-event information. That is, memory for an event can be affected by related information processed after the event, an effect known as the misinformation effect. In the classic suggestibility paradigm (Loftus et al. 1978; Pezdek, 1977), participants first viewed a sequence of slides, a videotape, or a film of an event. Later, they read a narrative or questions that misled them about the identity of target items viewed in the original event (misled condition), or they did not receive the misleading information (control condition). A recognition memory test followed. The principal results were that the hit rate to the original target items was higher and the false-alarm rate to the suggested items was lower in the control

than the misled condition; that is, participants were suggestively misled by the post-event information presented in the narrative or questions. Based on the wealth of research on post-event suggestion, it would be predicted that viewing BWC video footage following an event would serve as a source of post-event information, and thus, factors that affect the suggestibility of memory will affect both individuals' memory for the original event and their state of mind at the time of the event.

Under what conditions is post-event information more likely to influence event memory? Results from relevant cognitive science research indicate that memory is more likely to be suggestively influenced by post-event information when (a) the content in the original and the post-event target items is highly similar, and (b) the memory for the original event is weak. Specifically, stronger memories are more resistant to suggestibility than weaker memories, an effect known as the memory trace strength theory of suggestibility (Pezdek & Blandón-Gitlin, 2005; Pezdek & Roe, 1995). Both of these factors are relevant to the potential influence of viewing BWC video footage on an officer's memory for an original event in which they have participated.

These findings suggest that the extent to which memories of police officers will be vulnerable to the suggestive influence of viewing BWC video footage (i.e., post-event information) will be related to the relative strength of memory for the original event versus the BWC recording of this event. In light of the fact that participating in a use-of-force incident is likely to elevate an officer's stress, their memory for that incident is likely to be impaired. An extensive research literature has generally supported the detrimental effect of stress on memory (for a review, see Wolf, 2009). Together, these results on the misinformation effect suggest that viewing BWC footage of their participation in an event is likely to affect an officer's memory for

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the event and their state of mind during the event. If viewing BWC video footage distorts the original memory for an event, this should be avoided.

The above hypothesis was tested and confirmed by Pezdek et al. (2021), the only research study that has examined how viewing BWC footage affects an officer's memory for an event in which they participated. In this study, experienced police officers participated in an officer-involved shooting training simulator. In Experiment 1, 61 officers (1) participated in two dynamic criminal incidents, presented as two scenarios in the simulator, with each interaction recorded on their BWC, (2) answered questions about each incident immediately afterward at Time 1, and (3) answered the same questions later at Time 2 (shortly after Time 1) and then a third time, about one day later. Shortly after answering the questions at Time 1, each officer was assigned to view their BWC recording of one of the two scenarios with the other scenario assigned to the no BWC viewing condition; this within-subjects factor was the critical manipulation in this study. Experiment 2, replicated Experiment 1 with 64 different officers and assessed whether viewing multiple repetitions (view once or three times) of their BWC footage differentially affected their memory for the original event.

The major findings of Experiment 1 were that for two of the five event memory questions asked, the accuracy of responses changed over time more in the condition in which the officers had viewed their BWC video footage after answering these questions at Time 1 than in the condition in which they did not view their BWC video footage. The critical questions for which this occurred were: (a) *At what point did you first draw your gun?* and (b) *What was the total duration of this event?* These are important questions from which judgments are likely to be based regarding whether the level of force used by an officer was justified. For both of these questions the accuracy of event memory actually increased after Time 1 in the BWC condition,

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but critically, the more accurate information was derived from viewing the BWC footage and not from the original incident. This is important to know in assessing the “perspective of a reasonable officer on the scene, rather than with the 20/20 vision of hindsight” (*Graham v. Conner*, 1989, p. 396).

Regarding the open-ended recall questions about state of mind and event memory, for three of the five questions, commissions (addition of new information after Time 1) were significantly greater in the condition in which officers had viewed their BWC video footage. For two of the five questions, significantly more omissions (leaving out information previously recalled at Time 1) occurred in the condition in which officers had viewed their BWC footage. After viewing their BWC video footage, more new information was added and more information previously recalled at Time 1 was not again recalled at Time 2. This includes assessments of, for example, officers’ report of when they started to perceive danger in the scenario. These results were essentially replicated in Experiment 2. Few significant effects of the number of repetitions of BWC viewing (once or three times) resulted in Experiment 2.

If viewing one’s BWC video footage increases the accuracy and the quantity of what is recalled following a use-of-force incident, why *not* recommend that officers view their BWC footage before completing their reports of such incidents? In the Supreme Court decision of *Graham v. Conner* (1989) it was determined that in judging the “reasonableness” of an officer during a use-of-force incident, it is important to assess what the officer remembers from having participated in the incident on the scene and not what the officer remembers from the BWC footage that was viewed afterward. It appears from the results of Pezdek et al. (2021), that an officer’s memory for what was experienced on the scene is affected by viewing their BWC footage afterward. Thus, it is important that officers not view their BWC footage before



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completing their reports so as not to alter their memory for what they experienced on the scene with information in the BWC footage.

It is important to recognize that at some time in the investigation and possible litigation following a use-of-force incident, it is critical for third parties to know what actually occurred during an incident, and useful information that would inform this question is available in the BWC footage. However, this is a separate question than what the participating officer's perception of the incident was on the scene, and the best way to assess this and preserve it intact over time is to not permit the officer to view their BWC footage. In other words, if it is important for third parties to know exactly what happened during an event, then viewing the BWC footage will be imperfect, but will almost always be more accurate than the account of the participating officer, in which case the officer does not need to see the BWC footage. If it is important to know the participating officer's perceptions during an event, then it is important to preserve the officer's memory unaltered by viewing their BWC footage. In neither case would having the participating officer view their BWC footage be recommended.

As with every area of applied research, in addition to the recommendations grounded in science, there are real-world considerations as well. In this case it is important to recognize that today's climate regarding policing is a litigious one with activists eager to apply the "dishonest cop narrative" with pressure for excessive use-of-force and dishonesty allegations, both of which are terminable offenses in Law Enforcement. According to this narrative, if there are discrepancies between a police officer's report and information in their BWC footage, it can be construed as evidence that the officer was dishonest in reporting what occurred. This being the case, police departments and police unions are highly motivated to protect the integrity of police officers by giving them the opportunity to make their report as thorough as possible; from their

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point of view, this means having officers view their BWC footage prior to completing their report. However, the challenge here is to avoid a catch-22 situation for officers and help people understand that because human memory is an imperfect process, there *should be* discrepancies between an officer's report – that reflects their (imperfect) memory for the incident – and their BWC footage.

One compromise solution is that after a use-of-force incident, officers could first complete their written report. Only after they have submitted their written report, can they then view their BWC footage of the event and, if they notice any errors, amend their report. This permits clarification of what information about the incident was remembered purely from memory and what might have been remembered from the BWC footage. The Oakland Police Department has instituted this two-step process, and requires a clear delineation of what parts of the report were written before and after the BWC footage was viewed. In a proof of concept pilot study to assess the utility of this process, Dawes et al. (2015) had 11 law enforcement officers complete several scenarios and then write their report for one of the scenarios. They then reviewed their BWC footage of the scenario and revised their report as they felt was necessary. The errors corrected by viewing their BWC footage were then coded. Most of these corrected errors were coded as moderate (for example, inaccurate sequencing of events; Mean per officer = 5.4), some were minor (for example, misquotations or adding quotations; Mean per officer = 2.63), few were major (for example, omitting dangerous subject behaviors; Mean per officer = 0.9). Although few of these corrections were major, it is important to recognize that once the officer viewed the BWC footage, it is not possible to determine what was remembered from their memory for the scenario versus the BWC footage.

### **The Need for Future Psychological Research on the Use of BWCs**

Based on the research reviewed above, it is clear that significant advances have been made in understanding the psychological impact of BWCs. These findings also suggest some of the domains in which future research is needed and is likely to be especially promising. Some of these are presented below.

First, it is important to have a more nuanced understanding of the evidentiary value of BWCs. In particular, research is needed to compare the impact of BWC footage to more traditional witness testimony on memory for the relevant evidence and the persuasiveness and weight given to that evidence by triers of fact. This memory issue is important to assess given that there is frequently a long time delay between when a trier of fact is exposed to specific trial evidence and when they deliberate about the case. Given that more vivid material is more likely to persist in memory, this would suggest that BWC footage of an incident would be better remembered – and likely more persuasively considered – than more traditional witness testimony describing the incident. Implications for decisions of guilt by triers of fact are also likely. An initial line of inquiry on this issue could be productively conducted as a laboratory study, with subsequent research conducted using real BWC footage.

There is also a related line of research that needs to be conducted comparing perceptions of BWC footage by officers versus civilians. Consider this common situation. A police officer in the line of duty receives a dispatch call, goes to the specified location and is then involved in a use-of-force incident. Their BWC records the incident. At some point later, civilians observe the BWC video footage of the incident, perhaps on television or through social media. There are frequently differences between the participating officer and civilian observers in their perceptions of and memory for what transpired. These differences might also extend to

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perceptions of BWC evidence by triers of fact, including judges and jurors. Some of these differences might stem from, for example, biases against police held by civilians or officers' justified fear of being charged with excessive use-of-force. However, there are cognitive processing factors that are also likely to affect perceptions of and memory for police BWC video footage; assessing the integrity of participating officers relies on understanding these factors. Also, although officers almost always hear a dispatch call prior to arriving at the scene of an incident, civilians rarely do. In fact, civilians might never know the nature of the dispatch call that preceded an incident. It is likely that a dispatch call primes relevant schemata that then affect encoding of the incident. If so, this factor alone might account for differences between perception of and memory for an incident by police officers and civilians. Research on this general topic is critical but sorely lacking.

Second, many police departments are in the process of establishing the procedures that should be adopted regarding when officers should be allowed to view their BWC footage from a use-of-force incident. Leading this movement, the New Jersey State Attorney General recently released Directive 2021-5, the state's new Body-Worn Camera Policy.<sup>2</sup> Following the recommendation of an advisory committee, the Directive states that "the Policy prohibits law enforcement officers from reviewing BWC recordings prior to preparing initial police reports in most cases." And, the study reported above by Pezdek et al. (2021) is a first step toward resolving this issue from a research point of view. However, additional research is necessary to determine the types of information from a use-of-force incident that are most likely to be altered

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<sup>2</sup> Directive 2021-5 is posted at: [https://www.nj.gov/oag/dcj/agguide/directives/ag-directive-2021-5\\_BWC-Directive.pdf](https://www.nj.gov/oag/dcj/agguide/directives/ag-directive-2021-5_BWC-Directive.pdf). Body Worn Camera Policy is posted at: <https://www.nj.gov/oag/dcj/agguide/ag-Directive-2021-5-BWC-Policy.pdf>

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when an officer views their BWC footage. In particular, does viewing one's BWC footage of an incident alter memory for details of an incident that are more likely to relate to whether an officer's use-of-force was justified? This is important because excessive use-of-force can be considered a terminable offense for an officer.

Third, although there is a wealth of research on the effect of BWCs on the behavior and attitudes of officers and civilians, with much of this research presented here, more research is needed to understand the specific mechanisms underlying these effects. One model of the mechanisms underlying these effects is proposed above, that being the mediating effect of officers' behavior on the impact of BWCs on civilians' behavior. This mediation model – and other competing models – could be tested with new data or with existing large data sets from studies that have been conducted with police departments. It is important to understand the mechanisms underlying the relationship between BWCs and civilian behavior because, as discussed above, there are clear policing policy implications associated with various underlying mechanisms. Relevant policies include, for example, (a) when officers should be required to turn on their BWCs, (b) who can be authorized to access BWC recordings and under what circumstances, (c) the form in which BWC footage should be released to the public and be made available to triers of fact, and (d) in cases where there is BWC footage of an incident from more than one participating officer, the best way to make all such recordings available to minimize misinterpretation of any single video.

## **Conclusions**

As with all applied research – including research on psychology and law – the answer to most interesting questions is, “it's complicated.” In the case of assessing the psychological impact of BWCs, answers are complicated by, for example, the nuances of methodological

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approaches, the weight given to relevant policing policy implications, and to some extent, the views held of law enforcement. The research reviewed herein suggests that BWCs generally have a promising, albeit inconsistent and small, impact on (a) civilians' attitudes, complaints and behavior, and (b) officers' attitudes and behavior, but have perhaps a larger impact on (c) the evidentiary value of BWC footage, (d) officer training, and (e) officers' memory for use-of-force incidents. However, these effects are not likely to be direct and linear, which is why simple answers and simple solutions are not likely to be in the offing. Future research on the psychological impact of BWCs should recognize the complexity of these relationships and researchers should design experiments that are likely to identify the mechanisms underlying these complex relationships. In so doing, researchers would not only contribute to practical issues regarding the use of BWCs, but are also likely to contribute to important theoretical and empirical scientific issues.

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