

Is There a Civilizing Effect on Citizens? Testing the Pre-Conditions for Body Worn Camera-Induced Behavior Change

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Abstract

The cause(s) of reduced use of force and complaints following police body-worn camera (BWC) deployment remain unclear, though some argue that BWCs generate a civilizing effect on citizen behavior. This potential effect rests on four pre-conditions: (1) BWC presence and citizen awareness; (2) BWC activation; (3) Escalated citizen behavior or the potential for escalation; (4) Citizen mental capacity for BWC awareness. Prior research has not established the civilizing effect's existence, or how often these pre-conditions are met; this study aims to fill that gap. Data was collected during systematic social observation (SSO) of 166 encounters between citizens and officers in the Tempe, Arizona Police Department. The results tell a simple story. Two pre-conditions (activation, citizen mental capacity) are consistently met; awareness and escalated behavior are not. Overall, 1.2% of encounters saw all pre-conditions met. The paper concludes with a discussion of the implications for research on BWCs.

Keywords

body-worn cameras, civilizing effect, policing, police-citizen encounters

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Police body-worn cameras (BWCs) have been adopted widely by police departments in the United States and abroad. Though interest in BWCs dates back more than a decade (Miller & Toliver, 2014; White, 2014), diffusion of cameras increased dramatically after a series of high profile police killings of minority citizens, most notably Michael Brown in Ferguson, Missouri on August 9, 2014. Public outcry in the wake of those tragic incidents led former President Obama to create a Task Force on 21st Century Policing (2015) to identify recommendations for improving community trust and police accountability, and in its final report (2015), the Task Force highlighted BWCs as a potential tool for accomplishing those goals. By 2016, nearly half of all law enforcement agencies in the U.S. had purchased BWCs, including 80% of departments with 500 or more sworn officers (Hyland, 2018).

There are several explanations for widespread adoption of BWCs, from support and pressure across a diverse range of sectors, including police leadership organizations, civil rights groups, and citizens (White & Malm, 2020), to federal funding support from the U.S. Department of Justice (DOJ). The U.S. DOJ has awarded approximately \$84 million in grants to more than 400 law enforcement agencies, resulting in the deployment of thousands of BWCs across the country (White, Flippin, & Malm, 2019). Findings from early research studies suggesting cameras could produce notable reductions in use of force and citizen complaints were one of the primary drivers of BWC adoption (Ariel et al., 2015; Jennings et al., 2014; Katz et al., 2015). The reductions in use of force and citizen complaints have been substantial and long-term in some departments, including Rialto (CA; Farrar, 2013; Sutherland et al., 2017), Mesa (AZ; Mesa Police Department, 2013), Las Vegas (NV; Braga et al., 2018), Orlando (FL; Jennings et al., 2014), and Spokane (WA; White et al., 2018). Though the research findings have become more mixed over time with regard to these outcomes, the weight of the evidence is persuasive. For example, as of spring 2020, 26 studies have examined the impact of BWCs on citizen complaints, and 20 of 26 have documented substantial or statistically significant declines (Gaub et al., 2020).¹

Why would police BWCs produce declines in use of force and complaints? The answer to this question remains unclear though some argue that BWCs generate a “civilizing effect” whereby the presence of the camera calms citizen behavior.² The BWC-induced civilizing effect could be driven by deterrence, as people are more likely to behave properly if punishment will be swift, certain, and severe; or by self-awareness, which theory states that individuals are more likely to model their actions to fit social norms when they are observed. Based on our experience as researchers and technical assistance providers, we argue the existence of a BWC-induced civilizing effect on citizens rests of four critical pre-conditions: (1) There is a BWC present and the citizen is aware of it; (2) The officer activates the BWC (or at least, the citizen thinks it is recording); (3) The citizen is escalated (angry, upset, potentially violent) or has the potential to

escalate (BWCs can also generate a civilizing effect by keeping an already-calm person calm; i.e., maintaining civility); (4) The citizen is mentally capable of thinking through the consequences of being recorded (not intoxicated, mentally ill and in crisis, traumatized, etc.). The first pre-condition is the most important: there has to be citizen awareness of the camera, or at least the citizen must believe a camera is present and activated. If the citizen is not aware of the BWC, there obviously can be no civilizing effect. Once that pre-condition is met, the others can come into play: BWC activation, citizen escalation, citizen mental capacity. All four pre-conditions must be present. Though there is anecdotal support for the civilizing effect (White, 2014), prior research has not documented it empirically, nor has research sufficiently investigated the extent to which the four pre-conditions are met simultaneously in officer-citizen interactions. This is a notable research gap that limits our understanding of the impact of BWCs on citizen behavior, both independently and in conjunction with other factors.

The current study explores this question through data collected via systematic social observation (SSO) during 44 ride-alongs with officers in the Tempe, Arizona Police Department. The authors examine the degree to which each civilizing effect pre-condition is met during 166 police-citizen encounters. We also assess the prevalence of positive behavior change when all pre-conditions are met. The paper concludes with implications of the findings for the larger body of research on police BWCs.

Literature Review

The Effect of BWCs on Citizen (and Officer) Behavior

Researchers have employed two primary methods to investigate whether BWCs generate behavior change among citizens and officers. First, researchers have employed surveys that query citizens and officers about the impact of BWCs on their behavior or the behavior of others (i.e., perception studies). Officers tend to believe that BWC implementation will lead to better behavior within the department (among their co-workers), though most officers do not believe cameras will significantly affect their own behavior (Gaub et al., 2020; Headley et al., 2017; Jennings et al., 2014). Officers are also skeptical about the effects of BWCs on citizen behavior, and that skepticism tends to increase over time (White & Malm, 2020). In Tempe, for example, officer agreement with the statement “citizens will become more cooperative once they become aware an officer is wearing a body camera” declined from 65.7% pre-deployment of BWCs to 47.5% post-deployment (White et al., 2018). Alternatively, citizens tend to believe that BWCs will improve officer behavior as well as the behavior of other citizens, but not necessarily their own behavior (Lum et al., 2019).

The primary limitation with self-report surveys as a measure of behavior change is the presumed link between attitudes and behavior. On the one hand, a large body of psychological literature demonstrates the importance of attitudes in shaping behavior (Ajzen, 1991; Ajzen et al., 2019; Fazio, 1986, 1990). However, criminological research, especially in policing, has generally questioned this link (Augustyn & Ward, 2015; Mossholder et al., 1998; Murphy & Tyler, 2008; Tyler & Weber, 1982). Mastrofski et al. (1994) found no relationship between arrests for drunk driving and officer attitudes about enforcement. Stith (1990) reported a similar finding for domestic violence. Engel and Worden (2003) concluded that supervision and policy influence officer behavior more than attitudes.

Second, researchers have also employed use of force reports, complaints against officers, arrests, and citations as indicators of behavioral change in BWC studies. Findings from studies on arrests and citations are mixed. In some instances, officers equipped with BWCs make fewer arrests (Ariel, 2016; McClure et al., 2017) and issue fewer citations (Ready & Young, 2015). In other instances, arrests increased when officers began wearing BWCs (Braga et al., 2018; Toronto Police Service, 2016) or no significant change occurred (Grossmith et al., 2015; Wallace et al., 2018).

Prior research has consistently documented declines in complaints against officers following deployment of BWCs (White & Malm, 2020). The Rialto study documented a nearly 90% reduction in citizen complaints following BWC deployment (Ariel et al., 2015). The meta-evaluations conducted by Flight (2018) and Maskaly et al. (2017) both concluded BWCs lead to reductions in complaints against officers. Lum et al. (2019, p. 99) concur, noting that “researchers have mostly found that officers wearing BWCs receive fewer reported complaints than do those that are not wearing the cameras.” Though some portion of the reduction is likely explained by a decline in frivolous complaints (i.e., BWC footage refutes false allegations; Malm, 2019), the decrease may also be explained by improved behavior among citizens, officers, or both.

Early research also linked BWCs with reductions in use of force by police. In their follow-up of the Rialto study, Sutherland et al. (2017, p. 114) and colleagues concluded,

This new evidence from Rialto tells us that the effects of cameras have been maintained long after the experiment concluded. Our interpretation of this is that the cameras and associated changes in police practice...once embedded as part of the experiment, simply became ‘habit’ for officers.

Similarly positive results emerged from studies in Mesa (AZ; Mesa Police Department, 2013), Orlando (FL; Jennings et al., 2014), and Spokane (WA; White et al., 2018). While there have been no documented increases in use of force after BWC deployment, several recent studies observed no change after officers began wearing cameras. By spring 2020, 19 published studies or reports

have examined the impact of BWCs on use of force, and 11 of those have documented notable or statistically significant declines following camera deployment (Lum et al., 2019; White et al., 2019).³

The dynamics behind the reductions in use of force and complaints against officers are not known. Are the reductions a result of changes in officer behavior, citizen behavior, or both? Experimental issues such as contamination may be responsible for a lack of findings within some BWC studies. Changes in reporting may also explain the reductions. The answer remains elusive and highlights the limitations of using both perception studies and administrative data on use of force/citizen complaints as proxies for behavior change.

Theories for Behavior Change

There are two theories that explain improved citizen behavior as a result of being recorded on BWC: self-awareness theory and deterrence theory.⁴ Both theories complement one another and state that people mold their behavior to fit within social norms when they know they are being watched (Ariel, 2016); a broad body of evidence supports this assertion (Ariel et al., 2015). Self-awareness theory suggests that individuals are objectively aware of themselves and their place in the world (Duval & Wicklund, 1972). Braga et al. (2018, p. 516) note:

“[Self-awareness theory] suggests that when human beings are under observation, they modify their behavior, exhibit more socially acceptable behavior. . . and cooperate more fully with the rules. A well-developed line of research suggests that people do alter their behavior once they know that they are being observed.”

In officer-citizen encounters, presence of a BWC may spark that awareness in individuals and lead them to be more respectful towards the officer, more compliant with officer commands, and less likely to be aggressive or violent towards the officer.

Deterrence theory states people will avoid negative behavior if they believe punishment for that behavior will be swift, certain, and severe (Akers, 1990; Beccaria, 1963). There is a large body of criminological literature supporting deterrence theory (Cook, 1980; Nagin, 2013; Zimring & Hawkins, 1973). Evidence regarding the deterrent effect of police presence on crime is mixed (Kleck & Barnes, 2014; Sherman, 1990), though crime tends to be much more responsive to police saturation than the severity of legal punishments (Chalfin, 2017). Moreover, prior research on closed-circuit television (CCTV) has found that camera presence alone does not produce a deterrent effect; rather, the deterrent effect is more likely to occur if the camera is accompanied by officer presence (i.e., officer presence increases perception that punishment will be swift and certain; Gill & Loveday, 2003). BWCs would potentially satisfy this effect as

camera presence and officer presence are always linked, due to BWCs being mounted on an officer's uniform. This, however, is also dependent on the citizen being aware of the BWC's presence.

Pre-Conditions for a Civilizing Effect

If BWCs produce a civilizing effect among citizens via deterrence or social awareness theory, there are four specific pre-conditions that must be met before the effect can be realized. First, there must be citizen awareness of the BWC. This is the most important pre-condition for a civilizing effect. Awareness can come via the officer notifying the citizen of the BWC, the citizen asking the officer if they are wearing a BWC, the citizen seeing/hearing the equipment and understanding that it is a BWC, or the citizen believing or assuming the officer is wearing an activated BWC (e.g., citizen awareness may occur more generally via media coverage or word of mouth regarding a department's deployment of BWCs [Ariel, 2016]). White et al. (2019) reported that less than 20% of the BWC policies analyzed from agencies receiving BWC funding through the U. S. Department of Justice mandated citizen notification of the BWC by the officer. Very few studies have examined citizen awareness of the BWC. White et al. (2017a) found that only 28% of citizens who had recorded encounters with Spokane police officers were aware of the BWC. In a similar study of Tempe residents, White et al. (2018) found an even lower rate of awareness (23.6%; see also McClure et al., 2017 [24.3%]).

Second, the officer must activate the BWC (or at the very least, the citizen believes the BWC is recording). There is a limited body of research on BWC activation, and those studies show that activation rates vary widely by officer and by department. Katz et al. (2015) reported an overall activation rate of approximately 30% for Phoenix police officers, meaning that in 70% of the incidents where there should have been an activation, there was none. McClure et al. (2017) found activation rates among individual officers ranging from 2% to 65%, and the authors noted activation rates varied based on officer familiarity with the cameras and the nature of their workload. Both Katz et al. (2015) and Lawrence et al. (2019) reported that activation rates vary substantially by call type. There are a variety of explanations for a failure to activate. In some cases, the officer may forget or simply not have time (e.g., a rapidly evolving encounter). In other cases, the decision to not activate may be intentional. Perhaps a witness or victim refuses to provide information about a crime if the BWC is activated. The reason may also be more nefarious (i.e., to cover misconduct).

BWC policy can also influence activation decisions. Departments with mandatory activation policies tend to see higher activation rates, and officers that are more supportive of BWC implementation tend to have higher activation rates compared to other officers (Young & Ready, 2018). The Mesa Police

Department (2013) saw a more than 40% decline in activations when they adopted a policy that was more discretionary. White et al. (2019) conducted an analysis of 304 BWC policies, and they noted that approximately 65% give officers discretion to activate (or not) under certain circumstances.

The third pre-condition of a civilizing effect is that the citizen is escalated, upset, angry, or potentially violent at some point during the encounter. Bittner (1974, p. 244) noted that police respond to a “mind-boggling variety” of human problems “that-ought-not-to-be-happening-and-about-which-someone-had-better-do-something-now!” Many of these human problems, both criminal and noncriminal, involve people who are upset, aggressive, or in an escalated emotional state. In multiple studies with the Cincinnati Police Department, researchers reported that citizens were disrespectful to police officers in 16% to 35% of encounters (Dai et al., 2011; Novak et al., 2005). Other studies have recorded escalated citizen behavior, measured as emotional distress, high levels of hostility, and making derogatory statements towards the officer, in anywhere from 15% to 27% of officer-citizen interactions (M. D. Reisig et al., 2004; Todak & James, 2018). Though active resistance against police is rare (about 3%; Terrill, 2005), it is more common in encounters ending in arrest. For example, among 324 juveniles that had been arrested in Maricopa County, 26.5% self-reported they had resisted their arrest (Morrow et al., 2018). Hickman et al. (2008) found use of force occurred in approximately 20% of arrest encounters. Ross (1999) documented over 300 counts of active aggression in 567 arrests made by officers in 17 different departments. Notably, citizen aggression occurred in a wide range of encounters, from low-level misdemeanors to serious felonies.

As mentioned earlier, an interaction with a citizen might not be violent but still may have the potential to escalate to that level. BWCs could serve to maintain civility in these interactions by preventing a citizen from getting emotionally escalated in the first place. That is, the citizen’s behavior begins and remains calm throughout the encounter because they are aware of the BWC (i.e., without the BWC, the citizen would have escalated). Ariel et al. (2016a) study suggests the BWC could have an alternative effect, as they found that BWC activation during an already tense interaction may escalate both officer and citizen behavior. Nevertheless, in cases where citizen behavior is not escalated or is unlikely to escalate, there is no need for a BWC-induced civilizing effect.

The last pre-condition for a BWC-induced civilizing effect centers on the citizen being mentally capable of weighing the consequences of being recorded (deterrence or social awareness coming into play), and changing their escalated behavior. If the citizen is mentally ill and in crisis, traumatized in some way (e.g., victim of crime; injured), intoxicated, or otherwise experiencing heightened emotions, their requisite mental capacity may be compromised. Tedeschi and Felson (1994) have found that anger, fear, and alcohol can all act as dis-inhibitors and affect an individual’s mental capacity in social exchanges. Research shows that

police officers regularly deal with citizens whose mental capacity is compromised in some way. For example, prior studies have found signs of mental illness in from 3% to 23% of police-citizen interactions (McLaughlin, 2019; M. D. Reisig et al., 2004; Todak & James, 2018; White et al., 2006). Similarly, prior research has reported signs of drug/alcohol intoxication in 14% to 33% of police-citizen encounters (Engel, 2003; McCarthy et al., 2019; McLaughlin, 2019; Novak et al., 2005; M. D. Reisig et al., 2004; Todak & James, 2018). Whether it be through deterrence or social awareness theory, behavior change hinges on the citizen's mental capacity.

The potential for BWCs to produce positive behavior change is one of the most important and intriguing benefits of the technology. If BWCs can generate a civilizing effect, this benefit would have significant implications for officer and citizen safety, and more broadly, the relationship between police and the community (e.g., the deleterious effects of use of force are well-established). Prior studies on BWCs have examined several of these pre-conditions independently, but researchers have not sufficiently investigated the extent to which all pre-conditions are met simultaneously. Failure to achieve any one of the pre-conditions eliminates the opportunity for a BWC-induced civilizing effect on citizens. The current study explores the issue with data collected via systematic social observation (SSO) of 166 citizen encounters with officers in the Tempe (AZ) Police Department. The study investigates five research questions:

1. How often is the citizen aware of the BWC?
2. How often do police officers activate the BWC during citizen encounters?
3. How often are citizens in an escalated state (angry, upset, or potentially violent)?
4. How often do citizens have unimpaired mentally capacity (no indicators of mental illness, intoxication, trauma, etc.)?
5. How often is there positive change in citizen behavior once all of the pre-conditions are met?

Methods

Research Setting

This study was conducted with officers from the Tempe (AZ) Police Department (TPD), an agency that serves a population of approximately 192,000 citizens (U. S. Census Bureau, 2020). The police department is medium-sized, employing just under 350 sworn officers. The city's population is 68% white and 22% Hispanic or Latino. Median income from 2014 to 2018 was \$54,210 annually, and 21.3% of the city's citizens live in poverty (U.S. Census Bureau, 2020). Tempe is home to Arizona State University, comprised of approximately 70,000 students who reside and/or attend school in the city (Enrollment Figures, 2019). In 2017,

Tempe's violent and property crime rates per 100,000 residents were 474.5 and 4,121.2, respectively—both well above the national rates.⁵

Data Collection

Data were collected via systematic social observation (SSO) of 166 police-citizen encounters during 44 ride-alongs, occurring from December 2018 to April 2019.⁶ SSO is a technique used to gather objective, replicable field observations of social interactions, making it a preferred method for recording police activity as it may be more reliable than administrative data (Piquero & Weisburd, 2010). SSO has a long history in police research, and has been used to study numerous aspects of police field behavior, including decision-making (Schulenberg, 2014), the link between police culture and coercion (Terrill et al., 2003), discretionary behavior (Smith et al., 2005) and more recently, procedural justice before and after BWC deployment (McCluskey et al., 2019) and officers' use of de-escalation tactics (Todak & James, 2018). SSO was brought to criminology by Albert Reiss, Jr., who argued that the method could provide both quantitative and qualitative data, and detailed his own use of field observations to observe police brutality (A. J. Reiss, 1971). Regarding police-citizen interactions, SSO has been crucial in highlighting the transactional nature of these encounters and their minutiae (Piquero & Weisburd, 2010). SSO's use within criminological studies is still somewhat infrequent, and it has some limitations. Subjects in a study employing SSO may behave differently due to their knowledge of being observed ("Hawthorne Effect;" Mayo, 1933). Data collected via SSO is also dependent on what the researcher is able to observe, as well as their skills at observation. For example, researchers may sometimes be unable to gather sufficient data due to their distance from the interaction. These potential issues emphasize the importance of proper training in SSO (Piquero & Weisburd, 2010).

Officers were selected for ride-alongs via an anonymous nomination process where their peers and superiors recognized them for their skills at de-escalation (n=14).⁷ Three of the officers were female (two White, one Latinx), and the remaining eleven were male (one African American, one Latinx, nine White). Officers worked at all hours; five worked day shift, five worked night shift, and three worked swing shift. During each ride-along (n=44), researchers coded more than 150 unique variables for each sustained interaction that an officer had with a citizen (n=166).⁸

There were no reliability checks in the traditional sense (i.e. double coding) for these encounters, though the researchers within this study enhanced their reliability by participating in the same systematic social observation (SSO) training. Prior to beginning fieldwork, the team of observers (field researchers) underwent a seven-hour training on how to conduct these types of observations on police. A coding protocol was constructed. The research team also went on a

training ride and viewed publicly available body camera footage in which they practiced coding encounters using the coding protocol, compared their coding, and made any necessary adjustments. Following the coding protocol, the observer recorded 151 unique variables for each interaction the officer had with a citizen that lasted longer than two minutes.⁹ This coding instrument was a modified version of the instrument utilized by Todak and James (2018).¹⁰

The coding instrument captures details about the officer (race, gender, experience, age, behavior), the ride-along (date, weather conditions), the citizen (race, gender, behavior), as well as details about each specific interaction (type of call, time of day, location, etc.). Variables operated on a mix of binary, nominal, and ordinal scales, along with several narrative questions and a notes section for researchers to provide qualitative observations that could add context to the data they recorded. Observers coded information in real-time when feasible, but also took notes and completed coding during a pause or after the ride if time did not permit.

The Civilizing Effect Pre-Conditions

Table 1 shows the specific variables that reflect the civilizing effect pre-conditions. These variables were coded based on a combination of observations of the researcher, communication between the officer and citizen, and subsequent communication between the researcher and officer (e.g., after the call ended). Citizen awareness of the camera was documented when the officer notified the citizen of the BWC. If officer notification did not occur, awareness was recorded affirmatively only if there was some other concrete indicator displayed by the citizen (e.g., citizen asks about the BWC; makes a comment about the BWC). This is admittedly a rough, conservative measure of awareness.¹¹ Some citizens may have been aware of the BWC even if the officer did not make notification and the citizen made no other comments about the BWC.

Researchers were able to document when officers activated the camera (or not) through debriefs with the officers after each interaction. On the citizen's part, activation of the BWC can be real or perceived. If the citizen believes that the camera is on and recording, then that would be sufficient to satisfy this pre-condition. This is contingent on awareness though; if the citizen is unaware of the camera's presence in the first place, then whether or not the camera's activation is real or perceived becomes a moot point.

The researchers also documented indications of mental illness, substance abuse, trauma, or other states that could inhibit a citizen's mental capacity. Researchers were instructed to code affirmatively based on clear indicators of inhibitors to mental capacity, such as slurred speech, statements made by the citizen, concrete evidence (drugs in plain view and use indicated), dialogue between the officer and citizen, or comments made by the officer after the call ended. These factors can all affect individuals in different ways and at different

Table 1. Measuring the Civilizing Effect Pre-Conditions.

Variable	Coding instructions
Citizen awareness of the BWC	0 = not aware, 1 = aware
BWC activation	0 = did not record, 1 = did record
Citizen capable of rational thinking	0 = no (indications of mental illness, substance abuse, trauma, etc.), 1 = yes
Citizen behavior at start of encounter	0 = highly respectful, 1 = somewhat respectful, 2 = somewhat hostile, 3 = highly hostile, 4 = other, 5 = hysterical
Citizen behavior at end of encounter	0 = highly respectful, 1 = somewhat respectful, 2 = somewhat hostile, 3 = highly hostile, 4 = other, 5 = hysterical

levels, so researchers included detailed notes about how citizens were behaving due to drugs, alcohol, or mental illness, and how officers responded to these behaviors. Signs of these behaviors were addressed during SSO training so that the researchers could discern between different erratic behaviors. Researchers were instructed to mark that an individual’s mental clarity was affected by any of these factors only if there was some sort of confirmation of its presence. This could include, but was not limited to, the citizen taking a breathalyzer or field sobriety test, telling the officer they’d recently drank or used drugs, or the officer confirming that the citizen had a history of mental illness. If the citizen showed signs of being influenced by any of these factors but there was no confirmatory information, the researchers were instructed to mark the variable as “unclear” and detail the specific behaviors by the citizen that indicated intoxication or mental illness.

Last, citizen behavior was recorded at the beginning and end of each encounter along a continuum of respectfulness similar to one developed in a prior de-escalation study (Todak & James, 2018). “Highly respectful” citizens were especially polite or friendly towards the officer, for example referring to them by their formal title throughout the interaction or engaging in a casual conversation. “Somewhat respectful” citizens were compliant throughout the encounter and did not show any form of hostility, but were not overly friendly. “Somewhat hostile” behavior was operationalized as curttness, rudeness or being standoffish without overly escalating the situation. For example, a citizen who made sarcastic remarks or used foul language would be classified as “somewhat hostile. “Highly hostile” citizens made threats, yelled at the officer, were persistently noncompliant, or aggressive/violent. Persistent noncompliance would include repeatedly ignoring officers’ commands, outright refusing them, or any other behaviors that showed clear defiance. The “other” category captures behaviors beyond these descriptions, such as a citizen experiencing a mental health crisis, and “hysterical” refers to citizens experiencing severe emotional distress.¹²

The authors employ basic descriptive and bivariate analyses to assess the degree to which each pre-condition was met during the 166 police-citizen encounters. The limited number of observations in the outcomes of interest inhibited the use of more sophisticated analyses. We also assess the prevalence of positive behavior change during the encounters in which all pre-conditions were met.

Results

Table 2 displays the prevalence of each pre-condition for a BWC-induced civilizing effect on citizens. The first and most important pre-condition is citizen awareness. Just 3.8% of citizens were either notified about the BWC by the officer, or showed other indicators of awareness such as asking the officer if they were being recorded or clearly looking at the camera.¹³ This pre-condition was rarely met. Table 2 also shows that the second pre-condition, BWC activation is met in more than 95% of encounters. There was a failure to activate in only eight of 166 encounters, and each of those eight cases met criteria that gave the officer discretion to activate or not.¹⁴ The Tempe Police Department BWC policy has a mandatory activation statement, and the officers in the current study displayed a very high degree of compliance with that policy.

The third pre-condition centers on the citizen being escalated at the start of the encounter or at some point during the encounter. Table 2 shows the majority of citizens were highly (65.7%) or somewhat respectful (15.1%) at the start of the encounter. Of those 134 citizens, 9 (6.7%) displayed negative behavior change during the encounter (i.e., became hostile). Only 11.4% of citizens were hostile at the start of the encounter (16 somewhat hostile; 3 highly hostile), 5.4% were “other”, and 1.8% were “hysterical.” The nine citizens classified as other were most commonly neutral, giving vague answers to officers and only complying as much as needed, or in a somewhat heightened state that receded over time. Taken together, only 30 citizens (18.1%) were in an escalated state that would require a civilizing effect.¹⁵ There is also the possibility that a BWC could prevent escalation (i.e., keep a calm person calm), but this is contingent on citizen awareness. As noted above, citizen awareness was rare.

The last pre-condition involves whether the citizen had the mental capacity for self-awareness of being recorded. This was not a binary measure as observers did their best to capture if a citizen’s mental ability was impaired by alcohol, drugs, mental illness, or other conditions. Table 2 shows that 137 citizens (82.5%) showed no signs that their mental capacity was impaired. Altogether, 17.5% of citizens had indications of drugs, alcohol use, mental illness, any combination of the three, or another emotional state that could inhibit their ability to think clearly. Admittedly, indicators of intoxication or mental illness do not automatically eliminate a citizen’s ability to weigh the pros and cons of being recorded on a BWC, nor does it rule out the potential for positive

Table 2. The Prevalence of Civilizing Effect Pre-Conditions.

	Frequency	Percentage
BWC awareness		
Unaware	151	96.18%
Aware	6	3.82%
Total	157	100%
BWC activation		
No	8	4.82%
Yes	158	95.18%
Total	166	100%
Citizen escalated		
Highly respectful	109	65.7%
Somewhat respectful	25	15.1%
Somewhat hostile	16	9.6%
Highly hostile	3	1.8%
Other	9	5.4%
Hysterical	3	1.8%
Impaired mental capacity		
No evidence	137	82.5%
Alcohol	9	5.4%
Drugs	6	3.6%
Mental illness	10	6.0%
Multiple indicators	4	2.4%

behavior change as a result of that calculus. Nevertheless, impairment through intoxication or a mental health crisis certainly makes such coherent thought more difficult and less likely.

We also examined the prevalence of each pre-condition by call type (911 call or officer-generated), and by officer/citizen race. Of the 166 encounters, 115 were citizen-initiated via 911 (69%) and 51 were officer-initiated (31%). There were no differences in the prevalence of pre-conditions across call type. Awareness was rare (1% or under), and activation was high (88% for 911 calls; 98% for officer-initiated).¹⁶ The majority of citizens were somewhat or highly respectful (78% for 911 calls; 86% for officer initiated) and were not impaired in any way (83% for 911 calls; 80% for officer-initiated). With regard to officer/citizen race/ethnicity combinations, the majority of encounters involved white officers with white citizens (44%) and white officers with non-white citizens (42%). Fourteen encounters involved a non-white officer with a white citizen, and 10 involved a non-white officer with a non-white citizen. There was no notable variation in the prevalence of pre-conditions across any of these race-ethnicity combinations.

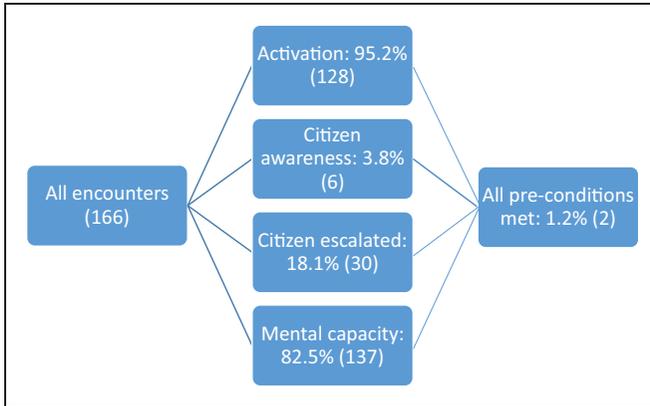


Figure 1. Prevalence of the necessary pre-conditions for a civilizing effect.

Figure 1 visually displays the four pre-conditions for all 166 encounters. The prevalence of each pre-condition is shown independently, and the right side of the figure indicates the total number of encounters where all four pre-conditions are met. Citizen awareness, pre-condition 1, is met least frequently and immediately limits the number of cases to six. All six had BWC activations. Among those six cases where pre-conditions 1 and 2 are both met, just two (1.2%) involved an escalated citizen (pre-condition 3) whose thinking was not impaired by drugs, alcohol, or mental illness (pre-condition 4). The behavior of one citizen was highly respectful throughout the encounter, while the other citizen's behavior shifted from somewhat respectful to somewhat hostile. In plain terms, the potential for a body worn camera-induced civilizing effect on citizens in these 166 encounters was virtually nil.¹⁷

Discussion

BWCs have diffused rapidly in the United States and abroad, in large part because of research suggesting the cameras can reduce use of force and citizen complaints. Proponents of BWCs suggest these reductions are caused by a civilizing effect, whereby the presence of the camera leads to improved behavior via deterrence or social awareness theory. This is an untested proposition, however. In the current study, we use data collected via SSO of officer-citizen interactions to determine the prevalence of each of the four critical pre-conditions that must be met before a BWC-induced civilizing effect on citizens can occur.

Results show that only two of the four pre-conditions were routinely met. First, Tempe police officers activated the BWC in more than 95% of the observed encounters. This activation rate is significantly higher than rates

documented in prior studies (Katz et al., 2015; McClure et al., 2017; White & Malm, 2020), as well as the 71-76% activation compliance rates reported by the Tempe Police Department in 2018 and 2019 (City of Tempe, 2020). Activation, therefore, seems to be much more common among this select group of officers in the presence of observers. Malm (2019, p. 125) notes the activation compliance rate is "...arguably the most important moderator of BWC effectiveness." Tempe PD's BWC activation policy is restrictive and mandatory. The policy states that officers will activate their BWC as soon as they are dispatched to a priority one call, prior to their arrival at lower priority calls, and for self-initiated activity, officers "shall activate their BWC prior to the contact" (General Order 17.105, 2017). The high activation compliance rate may be explained by the comprehensive, collaborative manner in which TPD rolled out its BWC program (White et al., 2018), the maturity of their BWC program (nearly five years old), the specific officers involved in this study (recall they were peer-nominated as top de-escalators), or some combination thereof. In terms of a civilizing effect on citizens, this pre-condition –activation– is nearly always met.

Reactivity may explain this high activation rate as well. Reactivity is a common concern with studies using SSO, though the level to which behavior is altered in the presence of an observer is arguable. Events with higher "social valence", such as officer-citizen interactions, are at greater the risk for behavior in those events being altered by the presence of an observer (Piquero & Weisburd, 2010); however, it is also noted that research subjects fall back to their normal behavior patterns over time, as entrenched behaviors are difficult to change. In other words, officers may have been more likely to activate their cameras because they knew they were being directly observed by a researcher on scene, and that researcher was noting whether or not the camera was turned on.

Second, the majority of citizens in the current study did not appear to be under the influence of drugs or alcohol, were not in a mental health crisis, nor were they experiencing a physical or emotional state that could impair their mental capacity. Our proxy measures are admittedly conservative based on researcher observations and available evidence at the scene. In other words, there may have been citizens who were not thinking clearly but who showed no signs of impairment. Nevertheless, most of the citizens who interacted with Tempe police officers appeared to have the requisite mental capacity to alter negative behavior via deterrence or social awareness.

The potential for a BWC-induced civilizing effect on citizens was short-circuited almost exclusively by low levels of citizen awareness. As mentioned previously, citizen awareness is the most important pre-condition. The other pre-conditions come into play once the awareness pre-condition is met. Citizens were aware of the presence of the BWC in fewer than 4% of these encounters. Officer notification of the BWC is a primary mechanism for generating citizen awareness, and the officers in this study rarely made that

notification. TPD's policy (2017, p. 6) recommends notification ("when practical, officers should advise subjects they are being recorded") though it also clearly states that citizens have no expectation of privacy "when talking with police officers during the scope of an officer's official duties, even when the contact is in a private residence." Anecdotally, the authors asked the officers in this study about the low notification rates, and officers stated that making the notification often seems awkward and inhibits the dialogue with citizens. There was also some concern among officers that the notification could possibly aggravate the citizen, leading to a greater potential for violence. Notably, Ariel et al. (2016b: 752) found that assaults against officers increased after BWC deployment, suggesting that when cameras are "introduced into some ongoing police-public interactions, the suspect, officer or both become more aggressive." Though we recorded explicit indicators of citizen awareness of the BWC (e.g., citizen asks about the camera), it is likely that some number of citizens were in fact cognizant of the BWC but made no mention of it. In fact, a prior study of Tempe citizens who had BWC-recorded encounters reported that 24% were aware of the camera. As a result, our measure of citizen awareness is conservative.

Even if the awareness rate is higher than we documented, the potential for a civilizing effect was further inhibited by the low prevalence rates of citizen escalation. Less than 20% of the citizens in this study were in an escalated state that created a potential (or need) for a civilizing effect. The vast majority of citizens were respectful to the officer(s) throughout the entire encounter. Though we acknowledge the potential value of BWCs in preventing escalation in the first place, the low levels of citizen awareness undermine this potential. While officer behavior was measured at the start and end of interactions in the same way as citizen behavior in this study, that data was not included in this analysis. This data may be very telling as to why citizen behavior remained relatively stable throughout most encounters (recall, these officers were peer-nominated for their exceptional de-escalation skills), and prompts observation for further studies. Future studies could also consider measuring officer and citizen behavior at each stage of the interaction rather than just at the beginning and the end, though recording that amount of data along with all other measures may be overwhelming for in-person observers.

Notably, prior studies have suggested that rates of use of force and complaints against Tempe officers are quite rare. More specifically, use of force occurs in approximately 0.5% of encounters (White et al., 2017b). Complaints are filed against officers in 0.05% of encounters (White et al., 2017b). Still, the Tempe Police Department did experience reductions in complaints and use of force following the rollout of BWCs. For example, White et al. (2017b) reported that the proportion of Tempe officers with at least one complaint dropped by approximately 50% after BWC deployment (a rare event became even more rare). Gaub et al. (forthcoming) found that use of force among patrol officers

did not change after BWCs were deployed, but the rates among officers in specialty units dropped significantly.

If the reductions in use of force and complaints in Tempe (and elsewhere) are not caused by a BWC-induced civilizing effect on citizens, then what could be driving the declines? Certainly, there could be a civilizing effect on police officers. The necessary pre-conditions for a civilizing effect are met much more frequently with police officers. Officer awareness of the BWC is 100%, and officers are in control of the activation decision. After all, the officer pushes the record button (or not).¹⁸ We can safely presume that most officers' mental capacity during an encounter is not inhibited by intoxication or mental illness. And there is potential for officers to escalate in any given encounter. Certainly, the dynamics of deterrence or social awareness theory apply equally well to police, and reductions in force and complaints may be explained, at least partially, by a civilizing effect on officers. Alternatively, BWCs have also been linked to increased perceptions of procedurally just treatment by officers (McCluskey et al., 2019; White et al., 2018). Perhaps officers with BWCs engage in greater levels of procedural justice which moderates citizen behavior (independent of citizen awareness of the BWC).

Several other factors beyond the dynamics of a police-citizen encounter may also play a role. It is well-established that some number of citizen complaints against officers are frivolous. A citizen is upset with the outcome or how he/she was treated, so the citizen files a baseless complaint in an effort to "jam up" the officer (Kane & White, 2013). Given that most complaints do not have independent corroborating evidence to support or refute the allegation, they typically devolve into "he said, she said" situations (Walker & Katz, 2018). The citizen says it happened; the officer says it didn't. BWCs change that equation significantly. There are numerous stories of citizens withdrawing a complaint or deciding not to file one, once it becomes clear that a BWC provides video and audio evidence of the encounter (White & Malm, 2020). Some of the reduction in complaints is likely explained by a change in citizen reporting.

Reductions in force and complaints may also be explained by the state of the department pre-BWC deployment, as well as the manner in which the BWC program is deployed. Gaub and White (2020, p. 8) note:

Scandal-ridden agencies typically suffer from organizational deficiencies that lead to excessive and unnecessary force, high levels of citizen complaints, and low reserves of police legitimacy... Alternatively, professional organizations with robust training, effective supervision, and proper accountability systems have a vastly different starting point.

Moreover, agencies that follow best practices for program development and implementation are less likely to experience resistance to the technology internally (e.g., low activation rates by officers) and externally (low usage rates by

prosecutors; push-back from citizens) (White & Malm, 2020). In other words, the extent to which a department experiences reductions in force and complaints after deploying BWCs is influenced by a host of potential factors. The results from this study suggest a BWC-induced civilizing effect on citizens is not one of the primary drivers of those effects, unless all four pre-conditions are consistently met.

There are several limitations in this study that should be considered. First, researchers' ability to record information about an encounter was sometimes limited by officers' concerns for their safety. If a researcher observed an interaction from a distance, as was the case in 32 of these 166 interactions, they may have missed key aspects of the encounter. When this occurred, researchers were instructed to debrief with the officer after the encounter to gather key details. Second, the extent to which the researcher's presence affected officers' behavior is unknown. Perhaps officers were more likely to activate the BWC because the researchers were observing them. This is a traditional limitation of SSO, though the officers in this study were all veterans with considerable experience with ride-alongs generally, and the authors specifically.¹⁹ Moreover, the observers employed strategies during the ride-alongs to mitigate reactivity by following McCall's points on role relations within SSO studies (McCall, 1984): they were trained to make their observations as inconspicuous, and their presence as inconsequential, as possible while staying within their limits as researchers. Reactivity is also dependent on elements of social sensitivity, which can be affected by some of our measured variables such as intoxication or mental illness; individuals completely focused on their role in the encounter (i.e. officers and citizens during an interaction) may also not be affected by the presence of observers (Baum et al., 1979; Sykes, 1978).

Third, measurement of several key variables hinged on researcher observations rather than more concrete indicators. For example, if the officer did not formally notify the citizen of the BWC, awareness was only recorded affirmatively if the researcher observed some clear indication of citizen recognition of the BWC. The recording of indications of mental health problems and substance abuse were also subjective, though researchers again consulted with officers after an encounter to confirm the presence of those factors. At times, social workers were also on scene to confirm when a citizen was exhibiting signs of mental illness. In the current study, researchers were not permitted to directly question the citizens. Future studies could add a citizen survey component to more definitively capture citizen awareness and other key pre-conditions of a civilizing effect. Fourth, the officers included in this study were not randomly selected for participation, but rather were selected through a nomination process by their peers and superiors due to their skills at de-escalation. If, and how much, this nonprobability sampling technique affected the data is undetermined. The officers in the study are diverse in terms of race, gender, rank, and

assignment. Also, researchers were randomly paired to the shifts in which they rode with officers so that coding techniques stayed consistent.

Fifth, use of force incidents are rare within Tempe PD (White et al., 2017b). This limitation could be addressed by prolonging the study to increase the chances of viewing use of force incidents, though any resulting pool of those incidents would still likely be small. Last, observers did not have a specific measure in the coding instrument to distinguish between the two theories of change: deterrence and social awareness. Future research should consider citizen interviews to delve into the causes of behavior change when it occurs.

Additionally, while the coding instrument for this study was adapted from a scheme used in prior SSO studies (Todak & James, 2018), we recognize the approach has shortcomings. For example, there are concerns about limiting citizen behavior on a scale from “respectful” to “hostile”. While “other” and “hysterical” were options for labeling citizen behavior, and narrative questions were included in the coding instrument to provide further detail on citizen behavior, more could have been done to account for differences in how people observe and label behavior. Moreover, the coding instrument did not account for cultural or demographic differences in behavior or language of those being observed, or how such differences in the observers may influence how information was coded. The coders met regularly in an attempt to improve consistency and openly discuss inconsistencies, but future studies should employ a more detailed continuum that also accounts for cultural and demographic differences in the variables of interest.

Conclusion

This study tested the potential for BWCs to generate a civilizing effect on citizen behavior based on the prevalence of four requisite pre-conditions, and the results tell a simple story. Though several of our pre-condition measures were conservative, there was little opportunity for a BWC-induced civilizing effect on citizens during these 166 encounters. Moreover, there was little need for a civilizing effect as citizens were respectful to the officers in the vast majority of encounters, and more generally, rates of use of force and citizen complaints against Tempe officers are very low. Though the current study did not document a BWC-induced civilizing effect on citizens, its existence remains an open question as the theoretical rationale for such an effect is strong (deterrence and social awareness theory). The topic deserves additional study by researchers. Moreover, police departments that seek to reduce their use of force and citizen complaints against officers should focus their attention on the two pre-conditions they can control: BWC activation and citizen awareness. The other two pre-conditions – escalated citizen behavior and citizen mental capacity – are largely beyond their purview. BWC activation rates and citizen awareness are

within their scope of influence, and high levels of those pre-conditions can set the stage for a potential civilizing effect on both citizens and police officers.

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Notes

1. The evidence on reductions in use of force is not quite as strong. We review this literature in the next section.
2. The same argument for a civilizing effect applies to officer behavior. For the current study, we focus on citizen behavior and set aside the question of officer behavior change. We use the term “citizen” instead of civilian because we believe the latter connotes a militaristic divisiveness between police and community. The term “citizen” does not imply U.S. citizenship.
3. Researchers have interpreted these findings in different ways. See Gaub and White (2020) for a discussion of the mixed reviews, as well as reasons for the differences.
4. Both of these theories apply equally well to behavior change among officers.
5. In 2017, the national violent crime rate was 382.9 per 100,000 citizens, and the property crime rate was 2,362.2 per 100,000 citizens. By comparison, the neighboring city of Phoenix, AZ’s 2017 violent crime rate was 760.93 per 100,000 citizens, and its property crime rate was 3,670.71 per 100,000 citizens. Phoenix’s population is 42% white and 42% Latino.
6. The lead author and three other graduate students participated in the SSO.
7. Each officer was asked to anonymously write down the names of three of their colleagues who they deemed the most skilled at handling difficult, potentially violent encounters. The first stage of this process produced a list of 136 officers who were nominated at least one time. The list of 136 nominated officers was then sent to the

- 20 or so sergeants within the department, who reviewed the list and each provided their own “top 10.” The final selection was determined based on the most commonly nominated names on sergeants’ lists.
8. Some of the officers had reputations among citizens they interacted with previously. For example, one was a school resource officer who interacted the same students frequently. A few others had an ongoing rapport with homeless individuals they’d encountered prior to this study. The pre-existing relationship between officers and citizens may have affected the degree to which an individual become escalated. This is a limitation of the study.
 9. Brief interactions that lasted less than a minute were also coded but are not used for this analysis.
 10. One of those authors trained our research team in SSO and use of the coding instrument.
 11. The authors did not have approval from the Tempe Police Department or their home university’s Institutional Review Board to interview citizens about the encounter or to ask about their awareness of the BWC.
 12. Inclusion of “neutral” on the continuum would have allowed for researchers to bridge the gap between actions that would not necessarily be considered hostile nor overtly disrespectful; several citizens characterized as “other” displayed neutral behavior.
 13. Nine cases were coded as missing because the researcher could not definitively determine whether the citizen was aware of the camera. This occurred when the officer asked the researcher to stay in or near the patrol car, most often for safety reasons.
 14. One of the officers served part of the study period as a school resource officer at a Tempe high school. All of the eight “no activation” cases occurred at the high school and involved children under the age of 18.
 15. There are 30 interactions where citizens were marked as “escalated”, while there are 31 where their behavior covers the range of “slightly hostile”, “highly hostile”, “hysterical”, and “other”. Citizen escalation was a separate variable from citizen behavior at the start and end of encounters. The 30 escalated cases are all encompassed within those 31 cases within the “slightly hostile” to “other” range, with one citizen being categorized as “other” but not escalated.
 16. There were 6 officer-initiated calls with no activation, all involving the officer assigned as a school resource officer with students under age 18.
 17. We also examined behavior change in those cases where there was no BWC awareness (n=150). At the start of the encounter, the majority of citizens were highly or somewhat respectful (66% and 16%, respectively). 10% were somewhat hostile and 2% were highly hostile. Citizen behavior did not change in 83.3% of encounters; 10.0% involved positive behavior change, independent of BWC awareness; and 6.7% involved negative behavior change, independent of BWC awareness.
 18. Though some BWC vendors have developed automatic activation technology based on some number of triggers (e.g., officer pulls firearm; lights and siren are activated), the vast majority of police departments in the U.S. leave the activation decision to the officer.
 19. All of the officers had consented to participate in the ride-alongs as part of a larger study on de-escalation.

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