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**NAVAL
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MONTEREY, CALIFORNIA

THESIS

**NOT JUST ANOTHER PIECE OF EQUIPMENT:
AN ANALYSIS FOR POLICE BODY-WORN CAMERA
POLICY DECISIONS**

by

Giacomo Sacca

December 2017

Thesis Co-Advisors:

Carolyn Halladay
David Brannan

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**NOT JUST ANOTHER PIECE OF EQUIPMENT: AN ANALYSIS FOR POLICE
BODY-WORN CAMERA POLICY DECISIONS**

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Submitted in partial fulfillment of the
requirements for the degree of

**MASTER OF ARTS IN SECURITY STUDIES
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ABSTRACT

In the United States, law enforcement agencies are rapidly deploying body-worn cameras (BWCs) to increase organizational transparency and foster positive community relations. Proponents of the technology see BWCs as a tool to ensure police legitimacy and eliminate abusive conduct. Preliminary evidence identifies several benefits of using BWCs, such as: reduced citizen complaints, increased cooperation, and lower civil liability. However, emerging evidence suggests that the devices may be achieving the intended goals but with unintended consequences. BWC use may inadvertently increase use of force incidents and reduce the time that the police spend on de-escalating a situation. This thesis employs qualitative research methodology to examine how BWCs affect the ambiguous nature of police decision-making, as well as the effects of BWC use on the public, thereby investigating solutions for the frayed police-public relationship. By analyzing current data available on BWCs, examining information on human decision-making including heuristics, and completing a comparative analysis of a similar police technology—the vehicle dashboard camera—the thesis finds that BWC use can have different and changing impacts on police behavior, suggesting that variables related to human factors alter the dynamics of BWC use. The thesis provides recommendations that cover independent agency BWC evaluations, organizational training, limits on discretionary officer recording, and the practical application of automated camera systems.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACLU	American Civil Liberties Union
ANZJC	Australian and New Zealand Journal of Criminology
BWC	Body-worn Camera
CMJ	Center for Media Justice
CCTV	closed circuit television cameras
CRS	Congressional Research Service
CSP	Connecticut State Police
Dashcam	Vehicle dashboard mounted camera
DOJ	Department of Justice
EJC	European Journal of Criminology
FBI	Federal Bureau of Investigation
JQC	Journal of Qualitative Criminology
LEMAS	Law Enforcement Management and Administration Survey
LC	Leadership conference on civil and human rights
MADD	Mothers Against Drunk Driving
NAACP	National Association for the Advancement of Colored People
NIJ	National Institute of Justice
COPS	Office of Community Oriented Policing Services
PERF	Police Executive Research Forum
SDT	Signal Detection Theory
UCR	Uniform Crime Statistics Report

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EXECUTIVE SUMMARY

There is broad national interest in equipping law enforcement officers with body-worn cameras (BWC). Political debate on the subject is fierce, and federal grant funding for providing personnel at the local levels is ongoing.¹ However, contradicting reports exist on the technology's impact and effectiveness.² Initial studies on the use of BWCs have shown positive results, but the reports were very limited in scope, and the findings could not be applied uniformly among law enforcement agencies.³ Subsequent reports on BWCs in policing have shown dichotomous results with actual increases in police and citizen use of force.⁴ An obvious problem—deserving of national attention and solutions—exists regarding the use of force and relations between police and citizens. As a tool to aid in addressing these deaths and broken trust, the use of BWCs must be carefully considered.

This thesis, created in 2017, is one of the first to look at the whole picture, and it finds that the conflicting research data so far shows that the long-term and ancillary effects of BWC use are unknown. Thus, it is too early to assume BWCs may simply be implemented without unintended consequences. The investigation here looks at ancillary factors, such as how police officers make decisions in an organizational setting and the history of dashboard cameras, to hypothesize about the unsettled determinations surrounding BWCs.

¹ Alexandra Mateescu, Alex Rosenblat, and Dana Boyd, "Police Body Worn Cameras" (Data and Society Research Institute, February 2015), <http://www.datasociety.net/pubs/dcr/PoliceBodyWornCameras.pdf>.

² Michael D. White, *Police Officer Body-Worn Cameras: Assessing the Evidence* (Washington, DC: Department of Justice, Office of Community Oriented Policing Services, 2014), https://www.ojpdagnosticcenter.org/sites/default/files/spotlight/download/Police_Officer_Body-Worn_Cameras.pdf.

³ Barak Ariel et al., "Wearing Body Cameras Increases Assaults against Officers and Does Not Reduce Police Use of Force: Results from a Global Multi-Site Experiment," *European Journal of Criminology* 13, no. 6 (November 2016), <https://doi.org/10.1177/1477370816643734>.

⁴ Barak Ariel, William A. Farrar, and Alex Sutherland, "The Effect of Police Body-Worn Cameras on Use of Force and Citizens' Complaints against the Police: A Randomized Controlled Trial," *Journal of Quantitative Criminology* 31, no. 3 (November 2014): 509–35, <https://doi.org/10.1007/s10940-014-9236-3>.

A. THE RESEARCH

The research gives conflicting views as to whether BWCs decrease or actually increase police use of force. On the one hand, a review of BWC research completed for the DOJ suggests that BWCs may improve officer behavior. In a 2014 assessment of BWC reports, White found that studies conducted in Rialto, California, as well as in Mesa and Phoenix, Arizona, all indicated BWCs improved officer behavior.⁵ On the other hand, a 2015 study conducted by Min-Seok Pang and Paul Pavlou suggests just the opposite: that the use of BWCs may be related to increases in police use of deadly force.⁶ Another study, published in the *European Journal of Criminology* released in 2016, found that the use of BWCs does not reduce police use of force, and officers may be more likely to be assaulted as a result of wearing BWCs.⁷ A subsequent study by the same investigators linked police discretion in BWC activation to the tools' ability to deter inappropriate use of force.⁸

The initial BWC studies in Rialto, Mesa, and Phoenix published determinations based on small police populations, placed under stressful, unfamiliar working conditions. Each of the studies also reported problems with officer compliance with BWC activation policies. The researchers conducted the studies to determine the acceptance of BWCs within an isolated police population. The investigators in each case did not set out to make determinations that were transferable among police organizations. While the results from these studies are essential, their findings are limited. I argue that the decisions of the officers in Rialto, Mesa, and Phoenix were likely more inclined to preserve their positions. The officers with new BWC units engaged in stricter enforcement efforts and demonstrated different professional demeanor out of acts of self-preservation.

⁵ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*.

⁶ Min-Seok Pang and Paul A. Pavlou, "Armed with Technology: The Effects on Fatal Shootings of Civilians by the Police" (Philadelphia, PA: Temple University, Fox School of Business, 2016), <https://www.bja.gov/bwc/pdfs/SSRN-id2808662.pdf>.

⁷ Ariel et al., "Wearing Body Cameras Increases Assaults."

⁸ Barak Ariel et al., "The Deterrence Spectrum: Explaining Why Police Body-Worn Cameras 'Work' or 'Backfire' in Aggressive Police–Public Encounters," *Policing* (2017): 1–21, <https://doi.org/10.1093/police/paw051>.

Subsequent studies that followed Rialto, Mesa, and Phoenix also faced challenges with officer compliance and the accumulation of accurate data. However, the reports that indicate the adverse effects of BWC use are also consequential in the furtherance of understanding how camera usage affects police decision-making. Ariel et al. suggest that, when recording commences after an encounter has escalated, the BWC no longer has deterrent effects, and emotional decisions override rational choice.⁹ With accumulated data, Pang and Pavlou suggested the use of BWCs was responsible for a 3.64 percent increase in shooting deaths of civilians by the police.¹⁰ At first, the reported results indicating increased use of force and emotions overriding logic while being recorded seem illogical. Why would BWCs increase assaults and not decrease use of force incidents? However, if the analysis allows for a presumption that the officers were accustomed to the BWCs by 2015–2016, and the investigation takes into account the factors associated with Social Identity Analytical Markers decision-making, the contradictory results begin to seem logical.

B. EXPANDING THE ANALYSES

The results from BWC studies between 2013 and 2016 are intricate, attempting to measure officer compliance, production activity, and effects on behavior. However, the police community has already experienced many of the reported conditions with the development of dashcams. BWC and dashcam technology share a similar history in the catalyst for their implementation and the tools' effects on police behavior. Dashcams and BWCs shared problems with officer compliance and policing measures, as well as departmental policy implementation and training. There is evidence that the dashcam increased transparency and assisted in professionalization; however, the equipment never wholly stopped inappropriate police and citizen behavior. The lessons learned from dashcams' history can help guide decisions to avoid common pitfalls.

Research in other areas, such as studies in technology and psychology, potentially answer why the cameras' deterrent capabilities are limited. Technology studies indicate

⁹ Ariel et al., "The Deterrence Spectrum."

¹⁰ Pang and Pavlou, "Armed with Technology."

that people become accustomed to the use of surveillance equipment and eventually go about their daily routines. Just as security cameras are not absolute deterrents against theft, the dashcam and BWC effects to limit inappropriate behavior may diminish over time. Psychological theories also tell us that adherence to group membership can be so strong that members will disregard personal losses, sometimes even physical mutilation, for the sake of group loyalty.¹¹ Social Identity Theory suggests that members of a group will make decisions in favor of the group, even at the loss of their own benefit. An officer with a strong group identity will likely, therefore, act according to their perception of how the group believes they should respond, limiting their possible options and giving rise to heuristic errors on several layers. Under group identity conditions, the officer's decision-making is influenced by their perceptions of self-worth and self-interest. Subconsciously, they are likely to balance decisions between expected response and the risk of losing self-esteem.

Research analysis has led to the determination that the BWC is not just a piece of equipment that is distributable without due consideration. In sum, BWC use may contribute to increased use of force due to decreased officer tolerance. However, BWCs do show great promise; the equipment does have the ability to provide transparency and bolster police legitimacy. As many authors have stated, BWCs are not a panacea for the problems that exist between society and the police. Unintended consequences of BWC use may occur if not avoided through a comprehensive system of policy, training, education, and quality management.

C. RECOMMENDATIONS

The research analysis of this thesis determines that BWCs cannot positively affect policing without the application of specific measures. The four broad recommendations endeavor to facilitate the BWCs ability to provide police legitimacy and transparency. The suggestions are applicable for organizations starting a BWC initiative, as well as those with existing programs. The objective of the proposals is to improve the police

¹¹ Henri Tajfel, *Social Identity and Intergroup Relations* (Cambridge University Press, 1982), 505.

officers' decision process and utilize the BWCs deterrence ability to obtain optimal performance.

1. Conduct Individualized BWC Research Specific to Organizations

Agencies implementing BWC programs should carry out investigations before procurement and use. Michael White has recommended independent testing in an initial BWC assessment for the DOJ, as does Barak Ariel throughout his extended research. Studies suggest that the use of BWCs can backfire in that they may increase the use of force, assaults against officers, and citizen complaints. Implementation of BWCs based on research from other departments is, therefore, irresponsible. BWC data from existing studies are not transferable from one agency to the next. The measurement of the impact of BWCs within an organization is best measured by citizen and officer surveys accompanying the comparison of data. In their 2015 article, Drover and Ariel provide guidance for overcoming the challenges of implementing a BWC trial. Drover and Ariel suggest that police leaders undertake evidence-based testing to manage their BWC operations and implement change.¹² The failure to tailor BWC programs to an organization's individual needs may result in limited short-term success.

2. Provide All Members of an Organization Advanced BWC Training

Training must go beyond the standard practice of covering BWC operations, policies, and legal subjects. Reports that summarize factors surrounding both BWCs and dashcams indicate significant shortcomings in camera training programs. BWC training should include areas that allow for a change in officer behavior, such as education about the psychological aspects of BWC use. Miller and Toliver suggest that law enforcement incorporate scenario-based training for BWC use.¹³ Training programs should also

¹² Paul Drover and Barak Ariel, "Leading an Experiment in Police Body-Worn Video Cameras," *International Criminal Justice Review* 25 (2015), doi:10.1177/1057567715574374.

¹³ Lindsay Miller, Jessica Toliver, and Police Executive Research Forum, "Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned" (Washington, DC: Office of Community Oriented Policing Services, 2014), <https://ric-zai-inc.com/Publications/cops-p296-pub.pdf>.

include feedback from officer and citizen surveys, mitigating problems before they create lasting damage.

3. Minimize Officer Discretion for Incident Recordings

Agency policy should explicitly spell out when officers are to commence and end BWC activation, complete with consequences for failing to record and a system for ensuring compliance. When officers fail to record an incident, despite the availability of BWCs, public sentiment reverts to suspicion and accusations of misconduct. One of the primary purposes for BWC implementation has been deterring misconduct. Deterrence is based on three elements: the likelihood of apprehension, severity, and swiftness of punishment.¹⁴ Optimum functional levels are achievable if officers work with the expectation that all incidents are recorded. In 2015, in a follow-on investigation to a multi-site study, Ariel et al. argued that the deterrence of misconduct is closely linked to activation policies and discretion in BWC operation.¹⁵ Ariel et al. also contended that, when organizations allow officers greater discretion to record without consequences for deactivation, the deterrent factors of the BWCs were less effective.¹⁶ BWCs will not likely improve behavior if programs allow officers to modify or opt-out of mandatory activation procedures without consequences.

4. Allow Automated Systems to Record Incidents within Practical Limits of Acceptable Agency Parameters

There are several reasons why agencies should look at automatically activating or continuously recording BWCs. Evidence recovery and selective activation have posed problems with officers since the police started using dashcams. Beyond dashcams, several BWC experiments, including those in Phoenix and Denver as well as the RAND multi-site study, noted problems with officer inconsistency in activating the units. Automated systems ensure that evidence is captured despite an officer's wishes, and they provide police psychological conditioning. In some cases, there are definite benefits

¹⁴ Ariel et al., "The Deterrence Spectrum."

¹⁵ Ariel et al., "The Deterrence Spectrum."

¹⁶ Ariel et al., "The Deterrence Spectrum."

when officers are conditioned to having all incidents recorded. One study found that when agency BWC policies mandated recording and officers have limited authority to turn off the camera, improper use-of-force incidents declined.¹⁷ Complaints of recording failures have several manufacturers creating camera units that activate on physical triggers such as overhead light engagement or the removal of a weapon from the holster. There is also a benefit to automated BWC systems in that they override the officer's ability to avoid recording incidents intentionally. Automated BWCs may also provide safe recording when officers are unable to activate their cameras.

¹⁷ Ariel et al., "The Deterrence Spectrum."

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This work is dedicated to the emergency service operators, police officers, and anyone else who lives under the microscope of a BWC. May the work within these pages lead BWC use to their intended goals and help to bridge the gap between the police and the public they serve. Stay safe.

I. INTRODUCTION

One of the laws of the universe is unintended consequences.

—John Moores¹

On August 9, 2014, in Ferguson, Missouri, Darren Wilson, a white police officer, shot and killed an unarmed black teenager named Michael Brown. The shooting prompted national protests and full-scale riots that lasted for several weeks, which, in turn, sparked fierce debates over the legitimacy of modern policing. These events initiated a national interest in equipping law enforcement officers with body-worn cameras (BWCs). Political discussion at all levels of government began, and federal grant programs soon followed.²

Since the Ferguson shooting, other controversial police-involved incidents have continued to fuel the rush to implement law enforcement officer BWCs. In April 2015, in Baltimore, Maryland, several weeks of civil unrest and riots followed the death of a black man during a police arrest transport. The incident flowed as if a continuation of Ferguson, with President Obama stating, “What the people of Baltimore want more than anything else is the truth.”³ Then, in July 2016, rioting ensued in Baton Rouge, Louisiana, after two white officers fatally shot an armed black man.⁴ Later that month in Milwaukee, Wisconsin, riots erupted after a black police officer shot and killed a black man.⁵ Further

¹ “John Moores Quotes,” QuoteHD, accessed July 14, 2017, <http://www.quotehd.com/quotes/john-moores-quote-one-of-the-laws-of-the-universe-is-unintended>.

² Alexandra Mateescu, Alex Rosenblat, and Dana Boyd, “Police Body Worn Cameras” (working paper, Data and Society Research Institute, 2015), 1, <http://www.datasociety.net/pubs/dcr/PoliceBodyWornCameras.pdf>.

³ “Timeline: Freddie Gray’s Arrest, Death and the Aftermath,” *Baltimore Sun*, accessed November 22, 2016, <http://data.baltimoresun.com/news/freddie-gray/>.

⁴ Wesley Lowery, Travis M. Andrews, and Michael E. Miller, “Outrage after Video Captures White Baton Rouge Police Officer Fatally Shooting a Black Man,” *Washington Post*, July 6, 2016, <https://www.washingtonpost.com/news/morning-mix/wp/2016/07/06/video-captures-white-baton-rouge-police-officer-fatally-shooting-black-man-sparking-outrage/>.

⁵ Ashley Frantz and Stephen Visser, “Hundreds Arrested in Protests over Shootings by Police,” CNN, August 4, 2016, <http://www.cnn.com/2016/07/10/us/black-lives-matter-protests/index.html>.

riots followed, in September 2016 in Charlotte, North Carolina, when officers shot and killed an armed black man.⁶

A. PROBLEM STATEMENT

Since August 2014, in order to address concerns associated with law enforcement tactics, policies, and procedures, police departments have rapidly implemented BWCs. However, contradicting reports exist surrounding the technology's impact and effectiveness.⁷ Initial studies on the use of BWCs showed positive results, but the reports were very limited in scope, and the findings could not be applied uniformly among law enforcement agencies.⁸ Subsequent reports on BWCs in policing have shown dichotomous results with increases in police and citizen use of force.⁹ Existing studies on BWC use exhibited problems with discretionary recording. However, a 2016 study by Ariel et al. argues that police discretion in BWC activation is directly linked to the BWCs' ability to deter inappropriate use of force.¹⁰ An obvious problem—deserving of national attention and solutions—exists regarding the use of force and relations between police and citizens; however, using BWCs as a tool to aid in addressing the broken trust requires careful consideration. After the results of a 2016 study in Washington, DC, experts are beginning to question whether using BWCs is worth the cost.¹¹ Further

⁶ Michael Gordon, Mark Washburn, and Fred Classen-Kelly, "Charlotte Protests: Riot Cops Fled Keith Lamont Scott Shooting Scene in Hail of Rocks," *Charlotte Observer*, October 28, 2016, <http://www.charlotteobserver.com/news/local/crime/article111056262.html>.

⁷ Michael D. White, *Police Officer Body-Worn Cameras: Assessing the Evidence* (Washington, DC: Department of Justice, Office of Community Oriented Policing Services, 2014), https://www.ojpdagnosticcenter.org/sites/default/files/spotlight/download/Police_Officer_Body-Worn_Cameras.pdf.

⁸ Barak Ariel et al., "Wearing Body Cameras Increases Assaults against Officers and Does Not Reduce Police Use of Force: Results from a Global Multi-Site Experiment," *European Journal of Criminology* 13, no. 6 (November 2016), <https://doi.org/10.1177/1477370816643734>.

⁹ Barak Ariel, William A. Farrar, and Alex Sutherland, "The Effect of Police Body-Worn Cameras on Use of Force and Citizens' Complaints against the Police: A Randomized Controlled Trial," *Journal of Quantitative Criminology* 31, no. 3 (November 2014): 509–35, <https://doi.org/10.1007/s10940-014-9236-3>.

¹⁰ Ariel, Farrar, and Sutherland, "The Effect of Police Body-Worn Cameras," 509–35.

¹¹ Nell Greenfieldboyce, "Body Cam Study Shows No Effect on Police Use of Force or Citizen Complaints," NPR, October 20, 2017, <http://www.npr.org/sections/twotwo-way/2017/10/20/558832090/body-cam-study-shows-no-effect-on-police-use-of-force-or-citizen-complaints>.

assessment of BWC usefulness is necessary, as there are ancillary effects to the use of recording devices that may negatively affect the outcome of police situations.

The problems that may arise from BWC use are observable through a two-prong analysis, which includes the weight given to video evidence, and the way police officers make decisions. First, BWC recordings are a substantial and sound means of evidence. The video, in general, has a significant impact on judicial proceedings, as set by the U.S. Supreme Court case of *Scott v. Harris*.¹² Officers utilizing a BWC may rely on the sound evidence as an independent witness to justify taking action, making them less apprehensive to use force. The officers may feel that the BWC recording function alleviates their responsibility to collect evidence. The reduction of time needed to gather evidence may also reduce the time that officers are spending on de-escalating a situation. The second part of the analysis is incumbent upon the way that police officers make decisions.

Police officers identify as members of a group and may consider judgments that arise from within their group when deciding upon an action. According to Tajfel, the Social Identity Theory (SIT) research indicates that, when values and emotions are attached to a group membership, such as a police organization, the group becomes a part of the person's identity.¹³ Within the framework of SIT, a person has a perceived social identity and, with it, a presumption that their decisions and actions are relevant to group representation.¹⁴ To members of a group who have developed a strong social identity, the beliefs, culture, and regulations of the group become the individual's accepted standard behavior. Analytical markers that can be attributed to the police profession also tell us

¹² In the *Scott v Harris* case, the U.S. Supreme Court held that the video of a pursuit was conclusive and unambiguous that jury review was unnecessary. Howard Wasserman, "Moral Panics and Body Cameras," *Washington University Law Review* 92, no. 3 (January 2015): 831–43. http://openscholarship.wustl.edu/law_lawreview/vol92/iss3/10.

¹³ Henri Tajfel, *Differentiation between Social Groups: Studies in the Social Relations of Intergroup Relations* (London: Academic Press, 1978), 28; and David Brannan, Kristin Darken, and Anders Strindberg, *A Practitioner's Way Forward* (Salinas, CA: Agile Press, 2014), 53–55.

¹⁴ Tajfel, *Differentiation between Social Groups*, 28; and Brannan, Darken, and Strindberg, *A Practitioner's Way Forward*, 53–55.

that a police officer may be more inclined to stand up to honor challenges rather than compromise when a public display is possible.¹⁵

The use of the BWC allows for the evaluation of an officer's performance not only by the public but also by their supervisors and peers. The BWC brings with it a firsthand view of officers' actions, demeanor, and knowledge, as well as their reluctance to act, forcefully or otherwise. The police who use BWCs are expected to work within the norms of the group, which includes defending the group's honor. In other words, when an officer is faced with an honor challenge in the field, while wearing a BWC, he or she is no longer the sole witness to their response. An officer with a strong group identity will likely, therefore, act according to their perception of how the group believes they should respond, limiting their possible options.

Current literature on BWC research indicates that specialized training regarding the effects of the camera on decision-making does not exist. A review of vehicle dashboard cameras (dashcams) also suggests that there has been a historical lack of police training on camera equipment. In 2004, a dashcam survey indicated a significant lack of initial and supplemental training on the technology.¹⁶ Similarly, in 2010, the NIJ recognized that BWC use in law enforcement had problems with technical specifications and operational standards.¹⁷ The failure to train officers may also be a contributing factor in causing incidents of force to increase when BWCs are used. Research on BWC use does not indicate if time is a factor, either. Currently, it is unknown if officer behavior changes with BWC use as they become accustomed to the technology. However, research results so far, from one year to the next, are already inconsistent.

¹⁵ Brannan, Darken, and Strindberg, *A Practitioner's Way Forward*, 53–55.

¹⁶ International Association of Chiefs of Police (IACP), *In-Car Cameras* (Alexandria, VA: IACP, Technology Technical Assistance Program, 2006), <http://www.theiacp.org/portals/0/pdfs/InCarCamera.pdf>.

¹⁷ Jonathan Hayes and Lars Ericson, *A Primer on Body Cameras for Law Enforcement* (Washington, DC: Department of Justice, National Institute of Justice, 2012), 9, <https://www.justnet.org/pdf/00-Body-Worn-Cameras-508.pdf>.

B. RESEARCH QUESTION

This thesis examines the evidence surrounding BWC implementation. The investigation here analyzes evidence that both supports BWC usage and contradicts the benefits to address the following questions.

Main Research Question: How have the ways both police and the public approach body-worn cameras limited the technology as an implement of policing effectiveness and reform?

Subquestion A: How can the study of similar technology implementation and behavioral concepts be used to predict the potential outcome of police BWCs?

Subquestion B: Which factors contribute to behavioral changes in police and citizens when BWCs are used?

C. SIGNIFICANCE OF THE STUDY

U.S. society is severely fractured in terms of public-police relations. While an easy fix would be welcome, it is likely not that simple. In the United States, law enforcement agencies are rapidly deploying BWCs to increase organizational transparency and foster positive community relations.¹⁸ Proponents of the technology seek to utilize the tool as a source of ensuring police legitimacy and the elimination of abusive conduct.¹⁹ Preliminary evidence identifies several benefits from the BWC technology use, such as reduced citizen complaints, increased cooperation, and reductions in civil liability. However, emerging contradictory evidence shows that the devices may be achieving the intended goals but with unintended consequences. The following select areas of research have identified the potential unintended consequences of BWCs.

¹⁸ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*.

¹⁹ Jay Stanley, "Police Body-Mounted Cameras: With Right Policies in Place, a Win for All," ACLU, October 2013, https://www.aclu.org/files/assets/police_body-mounted_cameras.pdf.

- One study indicates BWCs are associated with a 3.64-percent increase in police shooting deaths of civilians.²⁰
- Police fatal shootings are more pronounced for African Americans and Hispanics over Whites and Asians, as well as for armed suspects, when police BWCs are in use.²¹
- There is a low recording rate in select enforcement areas when camera usage is discretionary.²²
- There is a decrease in discretionary policing with officers favoring enforcement actions to the issuing of warnings.²³
- There is evidence that cameras do not have an effect on police use of force and may be responsible for an increase in the use of force against the police.²⁴

D. LITERATURE REVIEW

Academic work on the subject of BWCs is scarce. As of 2017, less than ten studies have been published featuring U.S. police agencies and BWC use. The literature review for this thesis investigates available BWC research along with factors that influence decision-making common to the police profession. In complex human dynamics, many variables affect decision-making. For BWC analysis, the mental process that informs police decisions is as important as analyzing their decisions after the fact.

²⁰ Min-Seok Pang and Paul A. Pavlou, “Armed with Technology: The Effects on Fatal Shootings of Civilians by the Police” (Philadelphia: Temple University, Fox School of Business, 2016), <https://www.bja.gov/bwc/pdfs/SSRN-id2808662.pdf>.

²¹ Pang and Pavlou, “Armed with Technology.”

²² Barak Ariel et al., “The Deterrence Spectrum: Explaining Why Police Body-Worn Cameras ‘Work’ or ‘Backfire’ in Aggressive Police–Public Encounters,” *Policing: A Journal of Policy and Practice* (January 2017): 1–21, <https://doi.org/10.1093/police/paw051>.

²³ Charles Katz and Mike Kurtenbach, “Deploying Officer Body-Worn Cameras in Phoenix,” Office of Justice Programs, August 8, 2014, <https://www.ojpdagnosticcenter.org/blog/deploying-officer-body-worn-cameras-phoenix>.

²⁴ Ariel, Farrar, and Sutherland, “The Effect of Police Body-Worn Cameras.”

The literature investigation explores the effects that external social pressures, in conjunction with the use of BWC, have on decision-making, focusing on the areas where a nexus exists between the utilization of BWC and the possibility of external pressures.

1. BWC Research

BWC has shown benefits. In 2013, a team of researchers and Chief Tony Farrar completed a study in Rialto, California, on the effects of BWC deployment.²⁵ Farrar published the results, which found several benefits to the use of BWCs. The reported benefits include civilizing and deterrent effects resulting in fewer citizen complaints, use of force incidents, and assaults on police officers.²⁶ A group of researchers assessing the evidence for the *Australian and New Zealand Journal of Criminology* (ANZJC) identified that BWC supporters insist BWC will produce objective evidence, curb inappropriate conduct, lessen constitutional litigation, and add greater clarity for the justice process.²⁷ In White's assessment of BWC studies, he summarized conclusions and reported that citizens would also be less likely to file questionable or false complaints when the video evidence contradicts the statements.²⁸

More benefits include increased accuracy in documentation. Miller and Toliver used a 2013 PERF survey of 500 U.S. police agencies to formulate their recommendations. The 2013 study revealed that the number one reason many agencies decided to deploy BWCs was to provide a more accurate documentation of police encounters with the public.²⁹ The agencies responding to the PERF survey noted

²⁵ Tony Farrar, "Self-Awareness to Being Watched and Socially-Desirable Behavior: A Field Experiment on the Effect of Body-Worn Cameras on Police Use-of-Force," Police Foundation, March 19, 2013, <https://www.policefoundation.org/publication/self-awareness-to-being-watched-and-socially-desirable-behavior-a-field-experiment-on-the-effect-of-body-worn-cameras-on-police-use-of-force/>.

²⁶ Farrar, "Self-Awareness."

²⁷ Timothy I. C. Cubitt et al., "Body-Worn Video: A Systematic Review of Literature," *Australian and New Zealand Journal of Criminology* 50, no. 3 (March 2016): 379–396, <https://doi.org/10.1177/0004865816638909>.

²⁸ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*.

²⁹ Lindsay Miller, Jessica Toliver, and Police Executive Research Forum, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned* (Washington, DC: Office of Community Oriented Policing Services, 2014), <https://ric-zai-inc.com/Publications/cops-p296-pub.pdf>.

decreases in citizen complaints and faster resolutions when allegations occurred.³⁰ In a report filed by White, he points out that video evidence alone has been able to cause the resolution of citizen complaints and possibly civil suits.³¹ As far as the value of the evidence, in an article for *Harvard Law Review*, Kahan, Hoffman, and Braman identify the weight that video evidence holds, citing the U.S. Supreme Court case on the matter of *Scott v. Harris*.³²

There is also a widespread belief that video recordings can be used for training evaluations. On one hand, White and a separate research group, published in *The Journal of Qualitative Criminology* (JQC), believe that value can be derived from the recorded data through reviews of officers' actions and behavior while approaching critical incidents or citizen contacts.³³ White further assesses that video evidence is of value as a training tool for tactics, communications, and to identify internal weaknesses.³⁴ On the other hand, Wasserman determines, based on the availability of limited studies, that officers will be more proactive, more reluctant to take risks, and less forceful and invasive.³⁵ The NAACP agrees with the positive assessments of BWCs and police

³⁰ Miller, Toliver, and Police Executive Research Forum, *Implementing a Body-Worn Camera Program*.

³¹ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*; Wasserman, "Moral Panics and Body Cameras."

³² Dan M. Kahan, David A. Hoffman, and Donald Braman, "Whose Eyes Are You Going to Believe? *Scott v. Harris* and the Perils of Cognitive Illiberalism," *Harvard Law Review* 122, no. 3 (January 2009), <http://harvardlawreview.org/2009/04/whose-eyes-are-you-going-to-believe-scott-v-harris-and-the-perils-of-cognitive-illiberalism/>.

³³ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*; Ariel, Farrar, and Sutherland, "The Effect of Police Body-Worn Cameras"; and Katz, "Deploying Officer Body-Worn Cameras in Phoenix."

³⁴ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*; *Body Cameras: Can Technology Increase Protection for Law Enforcement Officers and the Public?: Testimony before the Subcommittee on Crime and Terrorism*, 114th Cong. 1 (2015) (statement of Lindsay Miller, senior research associate, Police Executive Research Forum).

³⁵ Wasserman, "Moral Panics and Body Cameras"; Nathan James, "Can Body Worn Cameras Serve as a Deterrent to Police Misconduct?," *CRS Insights*, August 28, 2014, <https://fas.org/sgp/crs/misc/IN10142.pdf>.

training. In a letter to the U.S. Attorney General in 2014, the NAACP called the body camera a training tool for “appropriate police practices.”³⁶

In contrast, not all of the literature surrounding BWCs is positive. The consensus among many researchers outside of the narrow testing areas agree that cameras could increase transparency, legitimacy, and enhanced training, but there is not sufficient research to confirm the claims. The baseline experiments currently in use to bolster the positive results reported are Rialto, California (2013), Mesa, Arizona (2013), and Phoenix, Arizona (2014).³⁷ The researchers reviewing the reports—White, Barak et al., James, Wasserman, and Feeney—all agree that the initial reports lack necessary research standards to confirm the indications.³⁸ White and the researchers of *Data & Society* assessed that the studies being relied upon to finance and promote the use of BWCs had significant methodological limitations, including that some were conducted without comparative groups and that others were flawed based upon independent control mechanisms.³⁹ Miller and Toliver expressed the need for caution when using the Rialto, Mesa, and Phoenix studies, finding that the active claims were untested.⁴⁰ The different authors’ evaluations of the current studies have identified the shortcomings of the primary data sets in use for policy development and equipment procurement. In the

³⁶ Sherrilyn Ifill, “Letter to Attorney General Holder,” *NAACP LDF*, August 14, 2014, http://www.naacpldf.org/files/case_issue/8-14-2014%20Letter%20to%20AG%20Holder%20re%20use%20of%20excessive%20force%20by%20police.pdf.

³⁷ Farrar, “Self-Awareness”; Justin T. Ready and Jacob T. Young, “The Impact of on-Officer Video Cameras on Police–citizen Contacts: Findings from a Controlled Experiment in Mesa, AZ” (Phoenix: Arizona State University, 2015), <http://centerformediajustice.org/wp-content/uploads/2015/06/The-Impact-of-On-officer-Video-Cameras-on-Police-Citizen-Contacts-JEC.pdf>; Katz, “Deploying Officer Body-Worn Cameras in Phoenix.”

³⁸ Nathan James, “Can Body Worn Cameras Serve”; Wasserman, “Moral Panics and Body Cameras”; White, *Police Officer Body-Worn Cameras: Assessing the Evidence*; Mateescu, Rosenblat, and Boyd, “Police Body Worn Cameras”; Matthew Feeney, “Watching the Watchmen Best Practices for Police Body Cameras,” *CATO Institute*, no. 782 (October 2015), <https://www.cato.org/publications/policy-analysis/watching-watchmen-best-practices-police-body-cameras>.

³⁹ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*; Cubitt et al., “Body-Worn Video.”

⁴⁰ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*; Cubitt et al., “Body-Worn Video”; Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

Rialto, CA study, Ariel et al. conveyed that the results may not represent the population of police departments, but that the findings were consequential and promising.⁴¹

In addition to the controlled test areas, there have also been surveys relied upon as positive evidence for the use of body cameras, such as Orlando 2014 and PERF 2013, that may need to be approached cautiously.⁴² White criticized both studies for failing to measure actual behavior and also for their limits upon understanding the impact and consequences of a camera program.⁴³ The ANZJC researchers concluded that studies of opinions and undocumented evidence could not be relied upon to assess cameras as a behavioral change mechanism.⁴⁴ In White's dissenting opinion of the studies, he proposed that, without valid and reliable data, the studies can only speculate about the deterrence of unwanted behavior and the influence upon good behavior.⁴⁵ He further concluded that there is little evidence supporting the benefits and drawbacks of the technology, and the lack of definitive answers prohibits a researcher's ability to provide definitive recommendations regarding the adoption of a camera program.⁴⁶

In another study by Pang and Pavlou for the Fox School of Business at Temple University, the researchers concluded that the "use of wearable body cameras is related to an increase in the deaths of civilians by the police, contrary to an intuitive expectation that the adoption of body cameras would prevent deadly shootings."⁴⁷ Upon compilation and assessment of multiple data sources, the researchers explain their findings by applying the Signal Detection Theory to the actions of police officers wearing body cameras in deadly force situations.⁴⁸ Under the theory, police officers are faster to react in deadly force encounters because they feel the camera will justify their actions and

⁴¹ Ariel, Farrar, and Sutherland, "The Effect of Police Body-Worn Cameras."

⁴² Mateescu, Rosenblat, and Boyd, "Police Body Worn Cameras"; Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

⁴³ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*.

⁴⁴ Cubitt et al., "Body-Worn Video."

⁴⁵ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*.

⁴⁶ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*.

⁴⁷ Min-Seok Pang and Paul A. Pavlou, "Armed with Technology."

⁴⁸ Min-Seok Pang and Paul A. Pavlou, "Armed with Technology."

exonerate them in the event of criminal prosecution.⁴⁹ The researchers further assess that officers wearing BWCs will put more emphasis on the lives of the innocent when making shooting decisions.⁵⁰ The work of Pang and Pavlou is useful in the identification of contradictions related to the speculations surrounding body camera systems. The researchers used data from various sources with significant verification methods to complete their comparative study.⁵¹

A 2016 report published in the *European Journal of Criminology* (EJC) also found an increase in police use of force and assaults on police when BWCs are in use.⁵² The study found that BWCs had no overall discernable effect on police use of force, meaning BWCs did not lower force actions.⁵³ Also, BWCs increased the likelihood of an officer assault during a shift.⁵⁴ Using accumulated data, the study found the rate of assaults against officers was 15 percent higher when body cameras were present.⁵⁵ The reports by Pang and Pavlou and the BWC report in the ECJ are an analysis of data collected from various sources outside of the current literature often relied on for policymaking and speculation. The report analysis methods are valid and provide relevant information for the counter argument to the use of BWCs being beneficial.

The researchers from the ECJ study followed up on their findings to uncover why the use of BWCs was linked to the increase in use of force incidents in some cases and decreases in others.⁵⁶ Ariel et al. conducted a sub-group analysis of the multi-site

⁴⁹ Min-Seok Pang and Paul A. Pavlou, “Armed with Technology.”

⁵⁰ Min-Seok Pang and Paul A. Pavlou, “Armed with Technology.”

⁵¹ Min-Seok Pang and Paul A. Pavlou, “Armed with Technology.”

⁵² Ariel et al., “Wearing Body Cameras Increases Assaults against Officers and Does Not Reduce Police Use of Force.”

⁵³ Ariel et al., “Wearing Body Cameras Increases Assaults against Officers and Does Not Reduce Police Use of Force.”

⁵⁴ Ariel et al., “Wearing Body Cameras Increases Assaults against Officers and Does Not Reduce Police Use of Force.”

⁵⁵ Ariel et al., “Wearing Body Cameras Increases Assaults against Officers and Does Not Reduce Police Use of Force.”

⁵⁶ Barak Ariel et al., “Report: Increases in Police Use of Force in the Presence of Body-Worn Cameras Are Driven by Officer Discretion: A Protocol-Based Subgroup Analysis of Ten Randomized Experiments,” *Journal of Experimental Criminology* 12, [no. 3](#), (May 2016): 453–463, <https://doi.org/10.1007/s11292-016-9261-3>.

randomized control trial related to the use of force incidents and officer discretion on activating BWCs.⁵⁷ In the report, Ariel et al. argue that police discretion in BWC activation is directly linked to the BWCs' ability to deter inappropriate use of force. The researchers sub-analysis found that, when agency BWC policies mandated recording and officers have limited authority to cease activations, improper use of force incidents declined.⁵⁸ Also, in situations where organizations maintained weak BWC policies allowing officers greater discretion to record, without consequences for deactivations, the deterrent factors of the BWC were less effective.⁵⁹ Evidence from the same study suggests that, when recording commences after an encounter has escalated, the BWC does not have deterrent effects on the police use of inappropriate force.⁶⁰ The Ariel et al. supplemental investigation reports provide a substantial argument for the necessity of agency pilot programs, effective policies, and appropriate officer training.⁶¹ The study also adds weight to prevailing opinions that further research in the subject area is required.

2. Heuristics

In its purest form, human decision-making is a cognitive process to efficiently solve a problem, make a judgment, or initiate an action. Researchers have identified that people save deliberation time by subconsciously relying on a series of preconceived strategies known as heuristics.⁶² Through heuristics, people reduce the effort of retrieving and storing information, speed up the decision process, and primarily rely on less

⁵⁷ Barak Ariel et al., "Report: Increases."

⁵⁸ Barak Ariel et al., "The Deterrence Spectrum."

⁵⁹ Barak Ariel et al., "The Deterrence Spectrum."

⁶⁰ Barak Ariel et al., "The Deterrence Spectrum."

⁶¹ Barak Ariel et al., "The Deterrence Spectrum."

⁶² Anuj K. Shah and Daniel M. Oppenheimer, "Heuristics Made Easy: An Effort-Reduction Framework," *Psychological Bulletin* 134, no. 2 (March 2008): 207–22, <http://dx.doi.org/10.1037/0033-2909.134.2.207>.

information to arrive at a decision.⁶³ In the book *Routine Decision Making*, Michael Inbar describes heuristics as our primary decision-making strategy: “we have seen that whether man is aware of the fact or not it turns out to be the only strategy available to him for nearly all of the problems that he confronts.”⁶⁴ Other researchers, however, suggest that independent factors also contribute to the decision-making process.

The combination of influencing factors, along with the size, functionality, and depth of the problem, all contribute to the individual’s decision heuristic.⁶⁵ The decision maker, for example, also evaluates and weighs the positions or possible consequences of the choice.⁶⁶ Shah and Oppenheimer argue that, in developing heuristics, people use one or more effort-reduction principles to create the decision shortcut.⁶⁷ According to Shah and Oppenheimer, people subconsciously apply a decision-making weight to cues associated with their decision and choose the option they have ranked as most important. People process the ranking of cues without necessarily engaging in a sophisticated analysis of the subject.⁶⁸ In some cases, heuristics alone perform well enough to arrive at the decision that needs to be made. Beach writes that “heuristics often serve decision makers well because they produce answers that were moderately accurate while reducing the cognitive effort required to make them.”⁶⁹ In some situations, however, heuristics can be counterproductive, such as when the information used to form the heuristic is biased.

⁶³ Cindy Dietrich, “Decision Making: Factors That Influence Decision Making, Heuristics Used, and Decision Outcomes,” *Inquiries Journal* 2, no. 02 (2010), <http://www.inquiriesjournal.com/articles/180/decision-making-factors-that-influence-decision-making-heuristics-used-and-decision-outcomes>.

⁶⁴ Inbar, Michael, *Routine Decision-Making: The Future of Bureaucracy* (Beverly Hills: Sage Publications, Inc., 1979), 61.

⁶⁵ Inbar, Michael, *Routine Decision-Making*, 62.

⁶⁶ March, James G. and Heath, Chip, *A Primer on Decision Making How Decisions Happen* (New York: The Free Press, 1994), 3.

⁶⁷ Shah and Oppenheimer, “Heuristics Made Easy,” 209.

⁶⁸ Shah and Oppenheimer, “Heuristics Made Easy,” 207.

⁶⁹ Beach, Lee R., *The Psychology of Decision Making People in Organizations* (Thousand Oaks, CA: Sage Publications, Inc., 1997), 91.

3. Heuristics and Cognitive Biases

Heuristics can pose problems in certain circumstances especially when they create systematic biases. In 1974, Tversky and Kahneman revealed that decisions using heuristics could lead to errors and cognitive biases.⁷⁰ To understand how the use of heuristics can lead to errors and biases, Tversky and Kahneman break the analysis down into simple elements. They first hold that errors occur when decisions are made that rely on data with limited validity.⁷¹ Next, Tversky and Kahneman explain that a decision made with inaccurate input creates a subconscious tendency to think in a certain way.⁷² If the memory that forms becomes a systematic way of thinking, the mental shortcut has created a cognitive bias.

Tversky and Kahneman explain the thought process behind distance estimation as one way to demonstrate how heuristics can lead to cognitive biases, paraphrased as follows.⁷³ For example, we determine the distance of an object partially by how well it can be seen. In other words, the sharper the image, the closer it appears. Closer objects, as drivers know, are, in fact, more visible than further objects, but the statement is not true in all situations. A heuristic that systematically relies on the visibility rule to gauge distance can lead to an estimation error. By applying the rule in all circumstances, we overestimate distances when visibility is poor and underestimate when visibility is good. The example of distance estimation relays how a heuristic can work to routinely estimate distance, and also shows how, as the problem becomes complicated with variables, inaccuracy can occur. Along the same lines, Inbar holds that heuristic problem solving is a “fallible procedure,” primarily because problems become complicated, and humans have limited information-processing capabilities.⁷⁴ Inbar’s logic is that heuristics remain

⁷⁰ Amos Tversky and Daniel Kahneman, “Judgment under Uncertainty: Heuristics and Biases,” in *Utility, Probability, and Human Decision Making: Selected Proceedings of an Interdisciplinary Research Conference, Rome, 3–6 September, 1973*, ed. Dirk Wendt and Charles Vlek (Dordrecht, Holland/ Boston: D. Reidel Publishing, 1975), 141–62, https://doi.org/10.1007/978-94-010-1834-0_8.

⁷¹ Tversky and Kahneman, “Judgement under Uncertainty,” 141–62.

⁷² Tversky and Kahneman, “Judgement under Uncertainty,” 141–62.

⁷³ Daniel Kahneman, Paul Slovic, and Amos Tversky, *Judgment Under Uncertainty: Heuristics and Biases* (Cambridge: Cambridge University Press, 1982).

⁷⁴ Inbar, Michael, *Routine Decision-Making: The Future of Bureaucracy*, 72.

constant while the problem space rapidly increases beyond the effectiveness of mental shortcuts.

Tversky and Kahneman see the limits of heuristics through three types of heuristic principles along with their associated biases. They see the principles used to “reduce the complex task of assessing probabilities and predicting values to simpler judgmental operations” as necessarily limited.⁷⁵ Their three heuristic types are representativeness, availability, and anchoring and adjustment.⁷⁶ The first heuristic model, representativeness, deals with the similarities of situations and the probability that a similar cause or outcome is most likely.⁷⁷ The availability heuristic happens when people judge situations based on how quickly information details can be brought to mind, such as cues from recent memories.⁷⁸ In the final heuristic group, anchoring and adjustment, decision-making begins with an initial value (the anchor) that is then adjusted to arrive at a definitive answer.⁷⁹ Tversky and Kahneman further divided their heuristic types into sub-groups based on the cognitive processes used and the type of decision most likely to employ the heuristic.

When the need arises to make an assessment and the person already possesses a recent mental prototype, the representativeness heuristic is often triggered, so that a person subconsciously uses a mental shortcut which, in turn, triggers a subconscious bias. The subconscious process is operative when people are confronted with common questions like the ones that follow. “What is the probability that object A belongs to class B?”⁸⁰ “What is the probability that process B will generate event A?”⁸¹ Valid answers to these questions would require accurate information about the subject. However, when enough information is not available for a legitimate judgment, empirical evidence shows

⁷⁵ Kahneman, Slovic, and Tversky, *Judgment Under Uncertainty*, 3.

⁷⁶ Tversky and Kahneman, “Judgment under Uncertainty: Heuristics and Biases.”

⁷⁷ Kahneman, Slovic, and Tversky, *Judgment Under Uncertainty*.

⁷⁸ Kahneman, Slovic, and Tversky, *Judgment Under Uncertainty*.

⁷⁹ Kahneman, Slovic, and Tversky, *Judgment Under Uncertainty*.

⁸⁰ Kahneman, Slovic, and Tversky, *Judgment Under Uncertainty*.

⁸¹ Kahneman, Slovic, and Tversky, *Judgment Under Uncertainty*.

“that judgments of likelihood are reduced to judgments of similarity.”⁸² For example, a person might already believe that lower-income people commit street crimes. The same person is aware that people of color are significantly represented in lower income levels. According to the theory of the representative heuristic, if faced with deciding on the commission of a street crime, that person will make an initial judgment that a suspect is a person of color.

While the subconscious application of the representative heuristic requires that the individual know a similar set of circumstances, at other times, a person may have information stored in memory, but the decision to be made involves the chances of something occurring or being as accurate as it was the last time.⁸³ In this situation, people are likely to assess the decision via the subconscious application of the availability heuristic. The availability heuristic relies on how readily a person can bring available information to mind. For example, when looking at a large package, without close examination, the person draws on available information to assume that the item probably has a weight equivalent to the container size. The availability heuristic is thus convenient for frequent occurrences, but it may also lead to decisions without a valid basis.

In other cases, stored memory information loosely associated with a question or decision can serve as the starting point for decision-making. In various situations, when a relevant value is available, a person will start with what they know and adjust their answer up or down accordingly to arrive at an acceptable solution. Tversky and Kahneman believe that this heuristic of anchoring and adjustment is mainly used when the decision involves the application of a numeric value.⁸⁴ For example, if a person is asked to recall what year the Watergate Scandal happened in, they may start their anchor answer with the year 1971 and adjust from there. Although the person does not have actual knowledge of the exact dates of the event, they base their answer on what is known to them: possibly, here, the respondent does know the Nixon Presidency began in 1968 and that Watergate occurred as he prepared for a second term.

⁸² Inbar, Michael, *Routine Decision-Making: The Future of Bureaucracy*, 82.

⁸³ Tversky and Kahneman, “Judgment under Uncertainty: Heuristics and Biases.”

⁸⁴ Tversky and Kahneman, “Judgment under Uncertainty: Heuristics and Biases.”

The anchoring and adjustment heuristic, however, is not limited to numerical values. According to Fiedler and von Sydow, “judges often use an initial anchor, which is then adjusted in the light of further information stemming from memory or external sources.”⁸⁵ Besides judges, people subconsciously engage the anchoring and adjustment heuristic on a daily basis in various types of professions. Brannan, Darken, and Strindberg identify the possible formation of anchoring biases when describing the building of analytical products for terrorism analysis.⁸⁶ The adjusting heuristic does speed decision-making; however, like the representativeness and availability heuristics, errors can also result. Tversky and Kahneman believe that cognitive biases formed by each of the heuristics were behind the common decision-errors of their test subjects.

Cognitive biases are mental errors caused by the simplification of information and personal processing strategies and can result in more than a simple error in judgment.⁸⁷ Different from personal attitudes or viewpoints such as those found in cultural biases, cognitive biases result from mistakes in reasoning or evaluation. According to Heuer, cognitive biases that can influence decision-making come from the application of “subconscious mental procedures” that are “consistent and predictable.”⁸⁸ In a 2008 study published in the *Journal of Educational Psychology*, West, Toplak, and Stanovich found that biases based on strong opinions and beliefs have the potential to cause irrational thinking.⁸⁹ The same researchers also write that rationality is a fundamental element of objective analysis, and, without rationality, critical thinking cannot take place.⁹⁰ When cognitive biases influence decision-making, Dietrich argues that people

⁸⁵ Fiedler, Klaus and von Sydow, Momme, “Chapter 12 Heuristics and Biases: Beyond Tversky and Kahneman’s (1974) Judgment under Uncertainty,” 149, http://crisp.psi.uni-heidelberg.de/sites/default/files/vonSydow/Fiedler_von_Sydow_2015_Heuristic_and_biases_Beyond_Tversky_Kahneman_s_1974_In_Eysenck_Groome_Ch_12.pdf.

⁸⁶ Brannan, Darken, and Strindberg, *A Practitioner’s Way Forward*.

⁸⁷ Richard J. Heuer Jr., “What are Cognitive Biases?” *Psychology of Intelligence Analysis. Central Intelligence Agency*, <https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/books-and-monographs/psychology-of-intelligence-analysis/art12.html>.

⁸⁸ Heuer, “What are Cognitive Biases?,” 1.

⁸⁹ Richard F. West, Maggie E. Toplak, and Keith E. Stanovich, “Heuristics and Biases as Measures of Critical Thinking: Associations with Cognitive Ability and Thinking Dispositions,” *Journal of Educational Psychology* 100, no. 4 (November 2008): 930–41, <http://dx.doi.org/10.1037/a0012842>.

⁹⁰ West, Toplak, and Stanovich, “Heuristics and Biases.”

“over-rely” on “expected observations and previous knowledge, while dismissing information or observations that are perceived as uncertain.”⁹¹

Inbar explained that one way to look at decision errors caused by heuristics was that problems expand, but heuristics remain constant. In the example given with the decisions involving street crimes and the person of color, additional information could change the decision-makers judgment. However, in various behavioral studies, Tversky and Kahneman conclude that the representativeness heuristic can lead to decision errors where the decision-maker will overlook several factors that should influence their judgments of probability.⁹² Specifically, Tversky and Kahneman found that, when using a representativeness heuristic, decision-makers discounted prior outcomes, sample size, and reliability of evidence; the failure to give proper weight to available evidence causes decision-makers to misconceive the probability of chance and to misunderstand the causes of negative results.⁹³ The judgment errors then lead to a buildup of unwarranted confidence in decisions.⁹⁴ The results first reported by Tversky and Kahneman were later tested by other researchers, who reported similar findings.

In a 2008 study, Payne and Crowley affirmed that several factors are overlooked when the heuristic representativeness is subconsciously used. Payne and Crowley concluded that the test subjects rarely used base rates when given a choice.⁹⁵ In other words, their test subjects discounted prior outcomes when information was provided that could have influenced their decision. For example, when assessing patients, medical practitioners may overestimate the probability of diagnoses based on a person’s symptoms because they also have other information, such as the conditions of a person’s employment location. The practitioners may give undue weight to the employment location as a causal factor even if it is not scientifically proven as medically related to the

⁹¹ Dietrich, “Decision Making.”

⁹² Tversky and Kahneman, “Judgment under Uncertainty: Heuristics and Biases.”

⁹³ Tversky and Kahneman, “Judgment under Uncertainty: Heuristics and Biases.”

⁹⁴ Tversky and Kahneman, “Judgment under Uncertainty: Heuristics and Biases.”

⁹⁵ Velma L. Payne and Rebecca S. Crowley, “Assessing Use of Cognitive Heuristic Representativeness in Clinical Reasoning,” *AMIA Annual Symposium Proceedings*, (2008): 571–75, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2656076/>.

diagnosis. Payne and Crowley's test subjects also showed significant variability in their recall of base rates and favored causal data.⁹⁶ The latter portion of Payne and Crowley's conclusions indicate that the trial subjects discounted the reliability of evidence. For the most part, decision errors may not have serious consequences. However, judgment errors made in a law enforcement setting are among those that can have significant ramifications.

4. Social Identity Analysis

An analysis of how people are going to react when a BWC is utilized requires an understanding of the strength of the external influences of a person's social identity. In the book *The Practitioners Way Forward: Terrorism Analysis*, David Brannan, and Anders Strindberg demonstrate how selected anthropological and sociological cultural markers, along with the psychological effects of personal relevance, are effective in analyzing groups. The method taught by Brannan and Strindberg at the Naval Postgraduate School-Center for Homeland Defense and Security has been labeled the Social Identity Analytical Method (SIAM) and is fully explained in their work.⁹⁷ SIAM is the combination of Social Identity Theory (SIT) with carefully selected anthropological and sociological cultural markers.⁹⁸

According to Hogg and Abrams, part of a person's environment consists of their social and occupational context.⁹⁹ In a review of the literature on decision-making, Jacobs and Gaver said that many factors influence decision-making, including the environment in which the decision is made.¹⁰⁰ For police officers, the pressures from

⁹⁶ Payne and Crowley, "Assessing Use."

⁹⁷ Brannan, Darken, and Strindberg, *A Practitioner's Way Forward*.

⁹⁸ For foundational literature, see, for instance, J. G. Peristiany (ed.) *Honour and Shame: The Values of Mediterranean Society* (London: Weidenfeld & Nicolson, 1965); David D. Gilmore (ed.), *Honour and Shame and the Unity of the Mediterranean* (Washington, DC: American Anthropological Association, 1987); Julian Pitt-Rivers (ed.), *Mediterranean Countrymen: Essays in the Social Anthropology of the Mediterranean* (Paris and La Haye: Mouton & Co, 1963).

⁹⁹ Michael A. Hogg and Dominic Abrams, *Social Identifications: A Social Psychology of Intergroup Relations and Group Processes* (London and New York: Routledge, 1988), 12–16.

¹⁰⁰ Jacobs, Patricia A. and Gaver, Donald P., "Human Factors Influencing Decision Makers" (master's report, Naval Postgraduate School, 1998), <http://www.dtic.mil/dtic/tr/fulltext/u2/a351910.pdf>.

their environment may be amplified because of the nature of the police profession and the ease in which their actions become subject to broad public exposure. Individuals working in the police business may develop specific personality traits directly related to their occupation. According to Lindsay, Banks, and Shelley, people may form a police personality “through nurture-via the common attitudes, goals, and means.”¹⁰¹ When a person has a perceived identity through group membership, their identity may subconsciously guide their decision-making.¹⁰²

SIT research indicates that, when values and emotions are attached to a group membership, such as a police organization, the group becomes a part of the person’s identity,¹⁰³ and certain markers work together for analysis. It should be noted that a person is not classified or set into one identity; however, identities we derive from group membership can guide decisions and direct actions.¹⁰⁴ Applying anthropological and sociological research cultural identity markers to police officers allows for an interpretation of how police group membership can influence decision-making.¹⁰⁵ Brannan, Darken, and Strindberg refer to the standard analytical markers utilized as “the patron-client relationship, honor-shame paradigm, the challenge and response cycle, and the issue of limited good.”¹⁰⁶

SIAM’s four primary analytical markers overlap and feed into each other, allowing the observer to more effectively analyze group behavior.¹⁰⁷ The patron-client relationship is a symbolic and reciprocating affiliation between groups or individuals that

¹⁰¹ Vicki Lindsay, William Banks Taylor, and Kyna Shelley, “Alcohol and the Police: An Empirical Examination of a Widely-Held Assumption,” *Policing: An International Journal of Police Strategies & Management*, 31, no. 4 (2008): 596–609, 599, <http://dx.doi.org/10.1108/13639510810910580>.

¹⁰² Tajfel, *Differentiation between Social Groups*, 28.

¹⁰³ Tajfel, *Differentiation between Social Groups*, 28; and Brannan, Darken, and Strindberg, *A Practitioner’s Way Forward*, 53–55.

¹⁰⁴ Tajfel, *Differentiation between Social Groups*, 28; and Brannan, Darken, and Strindberg, *A Practitioner’s Way Forward*, 53–55.

¹⁰⁵ See, for instance, Matthew D. Hanley, “Killing Barney Fife: Law Enforcement’s Socially Constructed Perception of Violence and Its Influence,” (master’s thesis, Naval Postgraduate School, 2015), <https://calhoun.nps.edu/handle/10945/47270>.

¹⁰⁶ Brannan, Darken, and Strindberg, *A Practitioner’s Way Forward*, 67.

¹⁰⁷ Brannan, Darken, and Strindberg, *A Practitioner’s Way Forward*, 67.

exchange resources. Directly related to the patron-client relationship is “limited good,” the concept that social, economic, and natural resources are finite.¹⁰⁸ The honor-shame paradigm describes a form of social currency that can be individual or collective.¹⁰⁹ Honor is an attribute associated with admiration and respect whereas shame is a condition of disgrace. The honor-shame paradigm fuels the challenge-response cycle, a process used to convey communications.¹¹⁰ In the cycle, individuals or groups will use actions or statements in an attempt to gain social status or influence behavior. In turn, an opposing group or the target audience assesses and responds to the actions or statements. Many of the described markers are present in the analysis of individuals and how they form their social identity as the police.¹¹¹

E. METHODOLOGY AND SCOPE

The research methodology for this work is qualitative, analyzing evidence and academic thought to explain the effects of BWCs on policing. This thesis analyzes the current data available on BWCs, investigates information on human decision-making, and completes a comparative analysis of a similar police technology, the vehicle dashboard camera (dashcam). Through an inductive process, this thesis attempts to synthesize information regarding BWCs, dashcams, and the science behind how people make decisions by their perceived social identity. The limited investigation on dashcams examines a supporting comparative situational occurrence to the implementation of BWCs. The thesis investigates BWC data, dashcams, and decision-making factors in order to explore the extent to which BWCs are likely to affect officer decision making and behavior.

This thesis does not explore the actual technology driving camera development, nor does it analyze the ancillary logistics and budgeting conditions surrounding BWC usage. This study identifies the increase in BWC usage since the inception of the

¹⁰⁸ Brannan, Darken, and Strindberg, *A Practitioner’s Way Forward*, 67.

¹⁰⁹ Brannan, Darken, and Strindberg, *A Practitioner’s Way Forward*.

¹¹⁰ Brannan, Darken, and Strindberg, *A Practitioner’s Way Forward*, 67.

¹¹¹ Hanley, “Killing Barney Fife: Law Enforcement’s Socially Constructed Perception of Violence and Its Influence on Police Militarization.” (master’s thesis, Naval Postgraduate School, 2015).

technology, but it does not focus on the current amount of BWCs in use, the various vendors producing the camera units, or actual methods of wearing the camera units. Due to the limited period and data associated with this project, the thesis does not identify different behavioral aspects when BWC units are worn on various parts of the body.

Also, the thesis does not examine police behavior before police cameras were used in the United States. This thesis does not provide a detailed history of intelligence technology or psychological, behavioral theories beyond that which is necessary to prove or disprove influence on decision making about BWCs. This study does not provide analysis of information technology, psychological behavior theories, or vehicle-mounted cameras that cannot be used in the study of BWCs.

The data sources for the project consist entirely of open-source reports, media coverage, academic summaries, published government reports, academic research, professional journals, government testimony, independent studies, books, and reports from public interest groups. The data source time frame used for camera technology is relevant to the BWC implementation period. The data source period for the police behavioral statistics also coincides with actual BWC usage. Psychological data for analysis is collected from various periods, so long as it is considered current and relevant to the professional and academic psychology community. This thesis follows a linear approach beginning with the collection of data relevant to BWCs, dashcams, and research on human decision-making. The data is analyzed to identify the independent information on the individual issues, to determine patterns in the select items, and to isolate the scope of the problem. The analysis then interprets the patterns and identifies areas that allow for feasible solutions and recommendations to improve BWC policy.

The outcome of the research is a set of recommendations for future BWC policies based on the supported analysis. Through the analysis of historical data and psychological behavior theory associated with decision-making, the thesis clarifies the relationship between the use of BWC technology in policing and behavioral outputs. The final product is intended to be a resource for implementing BWC policy and training programs, thereby assisting agencies in strategic planning processes by helping them

avoid previously unknown vulnerabilities and pitfalls. Also, the thesis is intended to aid readers as a resource to establish a baseline for future research projects.

F. THESIS OVERVIEW

Chapter II opens with a detailed history of BWC progress. The BWC section dives into the conditions that propelled the equipment's exponential increase in use from a fractional amount in 2013 to as much as 95 percent of major police agencies by 2016.¹¹² The chapter dedicated to BWCs evaluates the current research on the subject and reports on concerns surrounding the implementation of the equipment. The discussion of BWC research provides study comparisons, identifying common as well as contrasting issues and findings.

Chapter III examines police dashcam capabilities along with a detailed history of the catalyst for the device implementation. The analysis includes ancillary subjects surrounding vehicle cameras such as political pressure, officer feelings/concerns, equipment training, and mission effectiveness. The analysis of dashcams is used as a historical frame of reference for equipment implementation completed under similar conditions as BWCs. Chapter IV discusses the synthesized analysis of BWCs, subconscious decision-making factors, and dashcams. Based on the analysis, Chapter V synthesizes findings and suggests recommendations in a brief conclusion, ideal for use to better prepare law enforcement for adjusting BWC policy and implementing adaptations for officer training.

¹¹² Major Cities Chiefs and Major County Sheriffs, "Technology Needs Body Worn Cameras," (Washington, DC: Homeland Security Office of Emergency Communications, December 2015), <https://assets.bwbx.io/documents/users/iqjWHBFdfxIU/rvnT.EAJQwK4/v0>.

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II. INCEPTION OF BODY–WORN CAMERAS

Nothing happens in a vacuum in life: every action has a series of consequences, and sometimes it takes a long time to fully understand the consequences of our actions.

—Khaled Hosseini¹¹³

In 2013, Police Executive Research Forum (PERF) surveyed 500 police agencies to find out about BWC usage and policy. The PERF study identified only 63 departments as users of BWCs, with only one-third of them having a written policy to govern the technology’s use.¹¹⁴ Within three years, BWC use by law enforcement exponentially increased. By August of 2016, CNN reported that 42 out of 68 major cities in the United States, including 50 of the most populated, had BWC programs and policies in place.¹¹⁵ In a 2016 report published in *Police Quarterly*, Barak Ariel said that at least 15 U.S. states are considering legislation mandating BWC use by all law enforcement.¹¹⁶ However, there are mixed reviews as to the benefits of BWC implementation. On one side, the proponents of the technology view the tool as a source of ensuring police legitimacy and transparency and as a way to curb abusive conduct. On the other side, opponents offer contradictory evidence that BWCs bring about unintended consequences, possibly increasing the very things BWCs are meant to decrease.

Chapter II explores the stakeholders, benefits, problems, and conditions arising from the introduction of BWCs in U.S. law enforcement. The chapter starts by first

¹¹³ Khaled Hosseini, “Khaled Hosseini Quotes,” BrainyQuote, accessed July 18, 2017, <https://www.brainyquote.com/quotes/quotes/k/khaledhoss526598.html>.

¹¹⁴ Miller and Toliver, *Implementing a Body-Worn Camera Program*.

¹¹⁵ Ray Sanchez, “Police Shootings Highlight Concerns about Body Cameras,” *CNN*, accessed January 2, 2017, <http://www.cnn.com/2016/08/03/us/police-body-cams/index.html>.

¹¹⁶ Barak Ariel, “Increasing Cooperation With the Police Using Body Worn Cameras,” *Police Quarterly* 19, no. 3 (2016): 326–62, <https://doi.org/10.1177/1098611116653723>.

detailing the social and legislative background of BWC use, then describing and assessing the previous studies, and, last, considering BWC problem areas, including those that may not only disprove BWCs as a deterrent but actually increase police use of force. Studies indicate that BWCs alter police behavior; however, the research is limited in scope and applicability. Several reports on studies also demonstrate that the policy controlling officer recording discretion may contribute to the negative effects of BWC use. The problems arising from BWCs are not cut and dry. Various articles and testimony show that interpretations of BWC benefits and shortcomings differ among scholars, representative groups, and members of the community.

A. SOCIAL AND LEGISLATIVE BACKGROUND SURROUNDING IMPLEMENTATION

Body-worn audio and video technologies that are conducive to the needs of law enforcement have been used since 2005.¹¹⁷ Still, before 2014, BWCs were not prevalent in U.S. law enforcement. Before 2013, national surveys that measured BWC use did not exist.¹¹⁸ The first report to collect accumulative BWC data, the 2013 PERF BWC survey, went unpublished, though its findings are available through recommendation reports and author testimony.¹¹⁹ In 2014, PERF published a different report that refers to the 2013 survey as an “informal” project.¹²⁰ However, the National Institute of Justice (NIJ) used the 2013 PERF survey results to fund two studies of BWCs, a market review and a limited impact assessment of the Las Vegas Metro Police Department.¹²¹

¹¹⁷ Cubitt et al., “Body-Worn Video.”

¹¹⁸ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*.

¹¹⁹ Miller, “Body Cameras: Can Technology Increase?”

¹²⁰ Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

¹²¹ “Research on Body-Worn Cameras and Law Enforcement,” National Institute of Justice, accessed November 22, 2016, <http://www.nij.gov:80/topics/law-enforcement/technology/pages/body-worn-cameras.aspx>.

Then, in August 2014, Ferguson, Missouri, Police Officer Darren Wilson shot and killed Michael Brown, a black teenage male. The shooting incident was not uncommon in the United States; however, it sparked subsequent protests and riots that led to a national call for the end of alleged abusive police tactics.¹²² Pleas for an effective solution to the problem came from the public, the president of the United States, federal legislators, police officials, and the ACLU.¹²³ The demand for BWCs soon outpaced the government's ability to employ programs based on valid and reliable data.

Speculation that the use of a BWC might have prevented or at least answered many questions about the 2014 Ferguson shooting of Michael Brown began almost immediately, with reports and opinion pieces creating a counter-factual analysis.¹²⁴ In an article for *American Thinker*, Brandon Brown attributed the concept of a BWC preventing the Ferguson incident directly to President Obama.¹²⁵ The implementation of the BWC for law enforcement was also the single request made by the Brown family.¹²⁶ Through public and political pressure, the BWC technology emerged as the single tool needed for an independent witness solution to police actions.

¹²² Emily Brown, "Timeline: Michael Brown Shooting in Ferguson, Mo.," *USA TODAY*, August 10, 2015, <https://www.usatoday.com/story/news/nation/2014/08/14/michael-brown-ferguson-missouri-timeline/14051827/>.

¹²³ Stanley, "Police Body-Mounted Cameras"; Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*; White, *Police Officer Body-Worn Cameras: Assessing the Evidence*.

¹²⁴ David A. Graham, "The Baltimore Riot Didn't Have to Happen," *The Atlantic*, April 30, 2015, <http://www.theatlantic.com/politics/archive/2015/04/the-baltimore-riots-that-didnt-happen/391931/>.

¹²⁵ Brandon Brown, "Articles: The Danger of Police Body Cameras," *American Thinker*, January 28, 2015, http://www.americanthinker.com/articles/2015/01/the_danger_of_police_body_cameras.html.

¹²⁶ Robinson Meyer, "Seen It All Before: 10 Predictions About Police Body Cameras," *The Atlantic*, December 5, 2014, <http://www.theatlantic.com/technology/archive/2014/12/seen-it-all-before-10-predictions-about-police-body-cameras/383456/>.

In December 2014, four months before the conclusion of the Department of Justice (DOJ) investigation into the Ferguson shooting incident, President Obama proposed the Law Enforcement Body Worn Camera Partnership Program.¹²⁷ The program allocated \$263 million for police training and the investment of \$75 million in matching funds for states and localities to purchase body-worn video equipment.¹²⁸ Many police departments in the United States raced to equip officers with the BWC technology.¹²⁹ Other countries also were motivated to take action in the wake of Ferguson; Erika Tucker reported that local governments in Canada implemented preventative policing plans.¹³⁰ Cubitt et al. note that, in the same time frame, Australia renewed significant interest in BWC application programs.¹³¹

National pressures for the implementation of BWCs continued through 2015. In April of that year, there were several weeks of civil unrest and riots in Baltimore, Maryland, following the death of Freddy Gray during a police arrest transport.¹³² A BWC did not capture the Baltimore event, further fueling the mistrust of police agencies and the call for video footage. On April 30, President Obama, speaking on the incident, said that “what the people of Baltimore want more than anything else is the truth.”¹³³

¹²⁷ Chuck Todd, Mark Murray, and Carrie Dann, “Obama Requests \$263 Million for Police Body Cameras, Training,” *NBC News*, December 2, 2014, <http://www.nbcnews.com/politics/first-read/obama-requests-263-million-police-body-cameras-training-n259161>.

¹²⁸ Todd, Murray, and Dann, “Obama Requests.”

¹²⁹ Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

¹³⁰ Erika Tucker, “What Canadian Police Are Doing so Ferguson Doesn’t Happen Here,” *Global News CA*, August 21, 2014, <http://globalnews.ca/news/1520068/what-canadian-police-are-doing-so-ferguson-doesnt-happen-here/>.

¹³¹ Cubitt et al., “Body-Worn Video.”

¹³² Melanie Eversley, “One Year Later, Baltimore Still Reeling from Freddie Gray Death, Riots,” *USA TODAY*, April 18, 2016, <https://www.usatoday.com/story/news/2016/04/18/one-year-later-baltimore-still-reeling-freddie-gray-death-riots/83181808/>.

¹³³ *Baltimore Sun*, “Timeline: Freddie Gray.”

In Baton Rouge, Louisiana, rioting ensued in July 2016 after two white officers fatally shot an armed black man.¹³⁴ The Baton Rouge incident was not captured on a BWC but was independently filmed by a bystander with a cell phone.¹³⁵ The same month, in Milwaukee, Wisconsin, riots erupted after a black police officer shot and killed a black man armed with a handgun loaded with 23 rounds of ammunition. The officer in Milwaukee did have a BWC, and the recording captured the images of the person shot holding a handgun.¹³⁶ Large-scale civil unrest continued in 2016 when riots followed a September police shooting in Charlotte, North Carolina. In the Charlotte incident, white officers shot and killed an armed black man. Bystanders recorded the action by cell phone as officers captured the events on their BWCs.¹³⁷ The bystander video depicted the scene from the witnesses' standpoint and was able to show the struggle between the officers and suspect. The BWC located on the officer's upper torso could not provide the same evidentiary value.

The common denominator in each of these situations is significant civil unrest following the event. Several large cities throughout the country, such as New York, Chicago, and Los Angeles, faced similar incidents. In Dallas, Texas, during a peaceful protest of police abuse in July 2016, a lone gunman killed five police officers and wounded seven others.¹³⁸ The national impact of each shooting event suggests that the

¹³⁴ Lowery, Wesley, Andrews, "Outrage after Video."

¹³⁵ Advocate Staff, "Watch: Two Graphic Videos Show Fatal Shooting of Alton Sterling by Baton Rouge Police," *The Advocate*, accessed August 28, 2017, http://www.theadvocate.com/baton_rouge/news/alton_sterling/article_4e6d1520-dc13-11e6-9696-e762140b9838.html.

¹³⁶ Emanuella Grinberg and Thom Patterson, "Tensions High after Milwaukee Police Shooting," *CNN*, August 16, 2016, <http://www.cnn.com/2016/08/14/us/milwaukee-violence-police-shooting/index.html>.

¹³⁷ Nick Valencia, Jason Hanna, and Steve Almasy, "Charlotte Shooting: Police Release Video," *CNN*, accessed November 22, 2016, <http://www.cnn.com/2016/09/24/us/charlotte-keith-lamont-scott-shooting-video/index.html>.

¹³⁸ Faith Karimi, Catherine E. Shoichet, and Ralph Ellis, "Dallas Shooting: 5 Officers Die, Suspect ID'd," *CNN*, accessed November 22, 2016, <http://www.cnn.com/2016/07/08/us/philando-castile-alton-sterling-protests/index.html>.

problem goes even beyond the complexity of race relations in the United States. The extent and vehemence of the civil unrest strongly suggest that the underlying issues are more than video footage—or even race.

Public criticism of police agencies did not end when officers were equipped with BWCs. The camera recordings or lack thereof are also a direct component of the elements that contribute to the aftermath of a police deadly force incident. For example, during the events in Milwaukee and Charlotte, BWC recordings themselves were the center of controversy. In both cases, arguments by politicians, the media, and public ensued over the release of videos.¹³⁹ The situation is complicated to settle since valid arguments exist on both sides of the public-release issue. Administrators must weigh the need for police transparency versus the need to protect evidence for court purposes. As of June 2017, such states as Kansas, North Carolina, and Louisiana have been legislating to restrict public access to BWC video evidence.¹⁴⁰ California, on the other hand, has been preparing laws to make all BWC videos public.¹⁴¹

B. DESCRIPTION AND ASSESSMENT OF QUALITATIVE BWC STUDIES

Before 2014, published research on BWC use was limited to a few small-scale studies. The information on BWCs starting from 2012 formed the basis for BWC opinions produced by groups such as the DOJ, ACLU, and the Leadership Conference. However, the conclusions of the studies were limited in scope and applicability. The studies before 2015, from Rialto, Phoenix, and Mesa, all concluded that more research was necessary. Research on camera use has increased and expanded in scope

¹³⁹ CNN, “Charlotte Shooting”; CNN, “Tensions High after Milwaukee Police Shooting.”

¹⁴⁰ Matt Stroud, “Police Body Camera Footage Is Becoming a State Secret,” *The Verge*, June 12, 2017, <https://www.theverge.com/2017/6/12/15768920/police-body-camera-state-secret>.

¹⁴¹ CA Legislative Information, California Assembly A.B.748, “Peace Officers: Video and Audio Recordings: Disclosure,” California Assembly (2017), https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB748.

since the initial studies were released, coinciding with the national push for police BWC use. The studies and reporting on police camera use have, for the most part, been intertwined, flowing from one to the next. The following review covers BWC research chronologically and describes the relationship between the studies and published reports.

In 2014, Lindsay Miller and Jessica Toliver were the primary authors of a BWC program implementation report completed for the DOJ.¹⁴² Miller and Toliver made their recommendations from lessons learned, relying on data from studies conducted in Rialto, California, and Mesa, Arizona, as well as information received from PERF respondents at a 2012 body camera conference.¹⁴³ Miller used the same information when testifying for the U.S. Senate Subcommittee on Crime and Terrorism in 2015.¹⁴⁴ The 2015 Senate BWC hearings explored various testimonies about the technology to use as a guide for future decision-making.¹⁴⁵ Also in 2014, White completed a report for the DOJ assessing the evidence of body-worn cameras. White's report cited evidence from Rialto, Mesa, the PERF report, and an additional report from the Phoenix Police Department in Arizona.¹⁴⁶ However, since the initial 2012–2014 information, researchers, such as Ariel Barak of Cambridge University, have been vigorously pursuing additional BWC research. Recently, published BWC research has varied from single department studies, such as the 2014 Denver, Colorado experiment, to various multiple site trials. Table 1 contains a brief synopsis of the studies used for BWC analysis.

¹⁴² Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

¹⁴³ Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

¹⁴⁴ Miller, "Body Cameras: Can Technology Increase?"

¹⁴⁵ Miller, "Body Cameras: Can Technology Increase?"

¹⁴⁶ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*.

Table 1. BWC Study Breakdown

Research Location	Study range / type	Intent of Study	Reported Main Findings
Rialto, California	10/2012-10/2013 54 officer comparative personnel study	BWC effects on citizen complaints use of force	88 percent decrease in citizen complaints against police from the previous year
Phoenix, Arizona	4/2013-7/2014 100 officer comparative personnel study	BWC effects on police accountability, camera activation compliance, and domestic violence processing	23 percent decrease in citizen complaints against the same police officers from the previous year
Mesa, Arizona	11/2012-10/2013 100 officer comparative personnel study	Impact of BWCs on police attitudes and behavior	60 percent decrease in citizen complaints
Multi-site RAND	2015 data collected from 8 police forces across 6 jurisdictions. A combined test population of 2.2 million police hours. Comparative statistical study.	BWC effects on use of force and assaults against police	No effect on police use of force increased likelihood of officers being assaulted
Multi-site Temple University	Statistics from 2013–2015. Included a representative dataset of 2,652 local police departments. Comparative statistical study.	Investigation into how the use of technology by law enforcement affects police deadly force shootings	BWC was associated with a 3.64 percent increase in shooting deaths of civilians
Denver, Colorado	6/2014-12/2014 119 officer outfitted in one of six patrol districts. Comparative study of crime reporting between 6 month periods.	Investigation to determine the BWCs effect on victims and offenders confidence in calling the police to solve their problems.	BWCs increase a citizen’s willingness to report crimes in low crime areas; however, they did not have a discernable effect in the locations with higher than average crime rates

1. Rialto, California

The Rialto study took place between February 2012 and July 2013 and was a randomized controlled study consisted of equipping half of the agency's 54 officers with cameras.¹⁴⁷ The study required allocation of officers on duty to treatment and control conditions on a weekly basis.¹⁴⁸ Researchers monitored the actions of a control group of officers without cameras, along with a BWC equipped treatment group, for a period of 489 and 499 days, respectively. The experiment organizers sought to ascertain the effect of BWCs on citizen complaints and police use-of-force incidents.¹⁴⁹ The method compared officers who wore the cameras to officers who did not.¹⁵⁰ The results of the study showed that citizen complaints against police declined by 88 percent, decreasing from 24 to 3 during the assessed 12-month period.¹⁵¹

In September 2015, a group of researchers published a report in the *Journal of Quantitative Criminology*, reviewing and questioning data from the Rialto experiment. The researchers found that the Rialto test conditions had administrative flaws because of departmental operational methods.¹⁵² The methods of the study subjected officers to independent variables and exposed control groups to treatment conditions. The assignments for camera use by the officers were determined by a randomizing program to identify specific shifts.¹⁵³ The schedules consisted of a 12-hour day shift, a 12-hour night shift, and two overlapping or "cover" shifts.¹⁵⁴ By assigning the BWCs to select shifts randomly and having an overlapping shift, the design of the distribution system allowed for personnel in the treatment and control conditions to work within the jurisdiction simultaneously. The design of the police labor distribution could not guarantee that

¹⁴⁷ Farrar, "Self-Awareness."

¹⁴⁸ Farrar, "Self-Awareness."

¹⁴⁹ Farrar, "Self-Awareness."

¹⁵⁰ Farrar, "Self-Awareness."

¹⁵¹ Farrar, "Self-Awareness."

¹⁵² Ariel, Farrar, and Sutherland, "The Effect of Police Body-Worn Cameras."

¹⁵³ Ariel, Farrar, and Sutherland, "The Effect of Police Body-Worn Cameras."

¹⁵⁴ Farrar, "Self-Awareness."

control and treatment groups worked independently. Therefore, in certain circumstances, officers were still subject to BWC treatment conditions even though they were assigned to a control shift, thus possibly changing the results. The potential for cross-contamination of treatment and control groups tainted the data as far as BWC impact on behavior.

Other variables to consider in evaluating the Rialto study is the psychological factor(s) associated with being placed in a treatment shift and inconsistent use. The assignment for officers in this experiment exposed them to randomized conditions with random personnel.¹⁵⁵ The officers of the experiment may have worked alone, with steady partners, or with new personnel. Working with an unfamiliar person adds another layer of subconscious pressure besides the use of the BWC and may cause its own changes in behavior. These mixed circumstances created variables whereby employee dynamics rather than the use of a BWC may have affected the outcome. In the experiment, problems also existed in the limited recording of incidents. Officers in the study inconsistently applied BWC use to service calls.¹⁵⁶ The inconsistent compliance rates negated the ability to discover unreported use-of-force incidents, thus limiting the data accumulation methods.

The inconsistencies and independent variables of the Rialto study eliminated the capacity to transfer the experiment results. Varying operating procedures, size, and conditions prohibit the results of the Rialto study from being transferable to another police agency. For the Rialto results to be applicable, organizations would need similar demographics, socioeconomic conditions, reporting procedures, and organizational cultures. However, the researchers in Rialto did not intend that their findings would set a precedent. Instead, Ariel et al. convey that the results may not have represented all police departments but that the conclusions are, nonetheless, consequential and promising.¹⁵⁷

¹⁵⁵ Ariel, Farrar, and Sutherland, “The Effect of Police Body-Worn Cameras.”

¹⁵⁶ Cubitt et al., “Body-Worn Video.”

¹⁵⁷ Ariel, Farrar, and Sutherland, “The Effect of Police Body-Worn Cameras.”

2. Mesa, Arizona

The Mesa study encompassed a one-year period from October 2012–2013 where the Mesa police agency supplied 50 officers with BWCs and created a control group of 50 demographically similar officers.¹⁵⁸ Assignments for the officers with BWCs spanned the city’s five patrol districts.¹⁵⁹ In the investigation, the researchers sought to assess the impact of BWCs on police attitudes and behavior, measured through surveys and citizen complaints.¹⁶⁰ Half of the officers with BWCs volunteered for the experiment; the other half selected were assigned to the trial.¹⁶¹

The Mesa investigation found that officers equipped with BWCs received 60 percent fewer complaints than the group had accumulated the previous year.¹⁶² In the same timeframe, the remainder of the Mesa police agency received three times as many complaints.¹⁶³ However, an analysis of the opinion surveys and quantitative data concluded that the officers with BWCs were also more risk-averse.¹⁶⁴ The BWC officers who steered away from taking risks also issued more summonses, conducted less stop-and-frisks, and had fewer arrests than the control group.¹⁶⁵ The research carried out in Mesa was a “quasi-experimental design” with camera activation compliance discretionary to the user.¹⁶⁶ Five months into the study, an order was necessary to limit the discretionary policy, gain officer compliance, and initiate camera activations.¹⁶⁷ Officer compliance was lacking under the discretionary recording policy. The goal of this

¹⁵⁸ Ready and Young, “The Impact of On-Officer Video Cameras.”

¹⁵⁹ Ready and Young, “The Impact of On-Officer Video Cameras.”

¹⁶⁰ Ready and Young, “The Impact of On-Officer Video Cameras.”

¹⁶¹ Ready and Young, “The Impact of On-Officer Video Cameras.”

¹⁶² Ready and Young, “The Impact of On-Officer Video Cameras.”

¹⁶³ Ready and Young, “The Impact of On-Officer Video Cameras.”

¹⁶⁴ Ready and Young, “The Impact of On-Officer Video Cameras.”

¹⁶⁵ Ready and Young, “The Impact of On-Officer Video Cameras.”

¹⁶⁶ Ready and Young, “The Impact of On-Officer Video Cameras.”

¹⁶⁷ Ready and Young, “The Impact of On-Officer Video Cameras.”

study was to examine how BWCs effect police-citizen encounters and perceptions of the technology to legitimize use within the police department.¹⁶⁸

The Mesa experiment was an internal evaluation meant to gauge the difficulty of program implementation and begin the process of investment evaluation. The investigation was not designed for widespread use or to transfer the study's results to another agency. The study results are limited in their applicability because the test design also, like Rialto, allowed for a cross-contamination between control and treatment groups. However, the real value of the Mesa study is the identification that the officers wearing BWCs were more risk-averse, made fewer arrests, and issued more summonses. Beyond identifying positive outcomes, the Mesa study shows that BWC use may cause changes in an officer's productivity and indicates that the price of fewer complaints may be risk aversion and increased minor enforcement.

An ancillary area worth exploring from the Mesa study is the finding that officers enforced a greater number of minor violations and were less likely to issue warnings.¹⁶⁹ If the results from this study are representative of the effects of BWCs, then police and community relations could, unfortunately, be harmed, the exact opposite of the intention. When these results are analyzed vis-à-vis the context of police-citizen relations, an argument can be made that public relations may be adversely affected. When a police force increases minor activity enforcement and issues fewer warnings, the actions presumably increase negative perceptions of the police by the public. Simply stated, increasing enforcement causes citizens to receive more summonses, resulting in a lessening of their willingness to support the police.

¹⁶⁸ Ready and Young, "The Impact of On-Officer Video Cameras."

¹⁶⁹ Ready and Young, "The Impact of On-Officer Video Cameras."

3. Phoenix, Arizona

In 2013, the Bureau of Justice Assistance, through the Smart Policing Initiative program, awarded the Phoenix Police Department \$500,000 to purchase, deploy, and evaluate BWCs.¹⁷⁰ The Phoenix BWC experiment subjects consisted of police in two police patrol control zones of similar demographics, area, population, and household income.¹⁷¹ Within the focus area, 56 officers were equipped with BWCs between April 2013 and July 2014.¹⁷² The comparative study design focused on differences in outcomes between two squads in the same precinct. The researchers set out to identify the BWC impact on unprofessional behavior from officers, citizen complaints, citizen resistance, and the ability to disprove allegations against officers.¹⁷³

As part of the initial grant, a team from the Arizona State University Center for Violence Prevention and Community Safety completed an analysis of the study results. The team reported poor recording compliance rates among the subject officers, with only 13 and 42 percent of total incidents recorded on BWCs.¹⁷⁴ Discretionary recording was allowed as part of the study. However, despite discretionary recording, the final report revealed that officers equipped with BWCs received 23 percent fewer complaints than they had accumulated the previous year.¹⁷⁵ In the same timeframe, the remainder of the Phoenix agency had a 45.1 percent increase in officer complaints.¹⁷⁶

The analysis of the police opinion surveys completed in conjunction with the Phoenix BWC study concluded that the officers with BWCs were less likely to give warnings and exhibited greater caution in decision-making, but BWCs had little effect on the use-of-force decision-making process. An examination of the quantitative data revealed significant increases in both the treatment and control groups for some arrests

¹⁷⁰ Katz, "Deploying Officer Body-Worn Cameras in Phoenix."

¹⁷¹ Katz, "Deploying Officer Body-Worn Cameras in Phoenix."

¹⁷² Katz, "Deploying Officer Body-Worn Cameras in Phoenix."

¹⁷³ Katz, "Deploying Officer Body-Worn Cameras in Phoenix."

¹⁷⁴ Katz, "Deploying Officer Body-Worn Cameras in Phoenix."

¹⁷⁵ Katz, "Deploying Officer Body-Worn Cameras in Phoenix."

¹⁷⁶ Katz, "Deploying Officer Body-Worn Cameras in Phoenix."

made: officers with BWCs made 17 percent more arrests than the previous year while the comparison group showed a 9 percent increase.¹⁷⁷ The study further revealed a negligible impact on arrestee behavior, measured through the amount of resisting arrest charges.¹⁷⁸

The Phoenix BWC experiment focused on examining the effect of BWCs on citizen complaints and domestic violence case processing. The study results are not applicable outside the Phoenix Police Department as the parameters and thresholds used were unique to the agency. Variables such as officer dynamics and organizational procedures make reliance on the study's results difficult. Adding to the unreliability of the study is the design of the deployment methods used for treatment (officers with BWCs) and control (officers without BWCs) groups. The assignment of personnel for this study was among two separate patrol areas, but safeguards were not in place to avoid the working overlap between treatment and control groups. Like the Rialto study, an intermingling of officers with and without cameras created variables in the Phoenix study that tainted the validity of the findings.

Still, agencies outside of Phoenix can extract a positive value from this study. In the opinion survey, the officer's statements were a fair prediction of their actions. The reported increase in arrests made is evidence that the officers' actions were in line with their opinions—fewer warnings. Additionally, the negligible changes in resisting arrest charges are also evidence that the officers' decision to use force was not affected by a BWC, and the camera did not have a civilizing effect in the resisting cases. As in the Mesa study, the Phoenix BWC experiment also identified a risk versus reward scenario. The Phoenix study also indicates that the tradeoff for fewer citizen complaints is an increase in select enforcement actions.

¹⁷⁷ Katz, "Deploying Officer Body-Worn Cameras in Phoenix."

¹⁷⁸ Katz, "Deploying Officer Body-Worn Cameras in Phoenix."

4. Multiple Study Site Randomized Control Trial

In 2015, a group of researchers from the RAND Corporation published a study, in the *European Journal of Criminology*, having attempted to duplicate the available peer-reviewed studies on BWCs. The researchers conducted a study with a large multi-site prospective randomized control trial (RCT) using a method of meta-analysis that combined statistics from 10 discrete multi-national test sites.¹⁷⁹ The combined test sites created a test population of over two million people and applicable 2.2 million police hours.¹⁸⁰ Using the method of selecting distinct test sites allowed the comparison of data collected in the multiple settings for greater contrast.

The RAND study focused on the same elements in policing as the original studies, use of force and citizen complaints, but added the category of assaults against police and adjusted some methodology to achieve greater neutrality. The data for the study was collected from eight police forces in six jurisdictions.¹⁸¹ Officers on duty were randomly assigned to experimental (with BWC) or control (no BWC) conditions on a weekly basis. As part of the terms of the experiment, officers were instructed to have cameras activated and recording for their entire workday, except under specifically articulated circumstances.¹⁸² As police discretion regarding camera activation was removed from the equation, public notification was mandatory.¹⁸³ The researchers believed that, by removing police discretion on camera activation decisions, the study would yield more precise results than the previous studies (Rialto, Mesa, and Phoenix). The concept of eliminating operational choice was meant to eliminate the collection of skewed data through voluntary reporting. Also, the accumulation of more video evidence provided a more substantial, reviewable database. The controls implemented by the researchers followed a logical pattern toward the obtainment of results generated with greater neutrality. To complete the analysis task using agencies of varying the size and reporting

¹⁷⁹ Ariel et al., “Wearing Body Cameras Increases Assaults against Officers.”

¹⁸⁰ Ariel et al., “Wearing Body Cameras Increases Assaults against Officers.”

¹⁸¹ Ariel et al., “Wearing Body Cameras Increases Assaults against Officers.”

¹⁸² Ariel et al., “Wearing Body Cameras Increases Assaults against Officers.”

¹⁸³ Ariel et al., “Wearing Body Cameras Increases Assaults against Officers.”

methods, the researchers standardized the rates of force used and assaults to reflect a number of occurrences per 1,000 arrests.¹⁸⁴ The data collected assessed whether officers used force during a shift and whether they were assaulted—and if so, the number of times.

The RAND study concluded with two primary results: BWC use had no overall discernable effect on police use of force, and a BWC in operation increased the likelihood of an officer assault during a shift.¹⁸⁵ The results, however, were based on accumulated synthesized data; individually, the results per agency were varied and unique to the particular reporting agency.¹⁸⁶ Thus, what was true for officer assaults in one agency was not true in another. The identification of varying results bolsters the theory that BWCs do not produce the same outputs at independent locations. It is completely understandable that the results of the RAND study were not homogenous across police agencies; the standardization of study results among police organizations is difficult to achieve. The very structure of policing within the United States contradicts the ability to gain standardization. Police agencies in the United States have varying degrees of training, procedures, methods of operation, and workloads. It is an unreasonable expectation to believe that police agencies who operate with different acceptable standards to have the same results when experimental conditions are applied. For example, City A in California may give extensive training on de-escalation and allow their officers ample time to complete assignments whereas City B in New Jersey may need their officers to rush from call to call and give little training beyond police academy standards. The behavior and application of response type between officers in City A and City B will, therefore, vary significantly. One officer may focus on de-escalating a situation while the other chooses a faster resolution. De-escalation versus speed should not be a choice that officers have to make; if BWCs decrease de-escalation, police administrators must consider why.

¹⁸⁴ Ariel et al., “Wearing Body Cameras Increases Assaults against Officers.”

¹⁸⁵ Ariel et al., “Wearing Body Cameras Increases Assaults against Officers.”

¹⁸⁶ Ariel et al., “Wearing Body Cameras Increases Assaults against Officers.”

Analysis of the synthesized data from the various police forces and jurisdictions revealed the rate of assaults against officers was 14 percent higher when BWCs were present.¹⁸⁷ For every 1,000 arrests in the control shift, 22 police officer assaults occurred, as opposed to 25 police assaults per 1,000 arrests in the experimental tours.¹⁸⁸ While the overall study concluded that there was no overall discernable effect on police use of force, there was a significant result in seven of the trials where the use of force by officers increased in the experimental shifts.¹⁸⁹ It is unknown whether the study's attempt to capture citizen complaints was accomplished, as further results remain unpublished.

The results compiled by the RAND researchers are, therefore, valid and reliable but still limited in transferability. RAND has identified possible adverse outcomes from BWC usage and that further empirical research is necessary. The use of multiple testing sites, yielding various results, is evidence that BWC usage findings have a limited range due to independent variables. The reliability of RAND derives from the controls of this experiment, designed to reduce or eliminate the inconsistencies of the previous work on BWC usage. However, the study is not conclusive as to the causes of officer assaults and the role of the BWC in police use of force.

5. Fox School of Business at Temple University Report

In September 2016, Pang and Pavlou completed a study investigating how the use of technology by law enforcement affects police deadly force shootings.¹⁹⁰ To complete the study, the researchers created a representative dataset of 2,652 local police departments, using survey data collected by the DOJ in the Law Enforcement Management and Administration Survey (LEMAS) of 2013.¹⁹¹ The researchers selected agencies that could provide a fair representation of a control group and implemented

¹⁸⁷ Ariel et al., "Wearing Body Cameras Increases Assaults against Officers."

¹⁸⁸ Ariel et al., "Wearing Body Cameras Increases Assaults against Officers."

¹⁸⁹ Ariel et al., "Wearing Body Cameras Increases Assaults against Officers."

¹⁹⁰ Pang and Pavlou, "Armed with Technology."

¹⁹¹ Pang and Pavlou, "Armed with Technology."

controls to mitigate unobservable differences.¹⁹² The controls accounted for crime rate and operation methods, as well as demographic and socioeconomic discrepancies.¹⁹³ Unlike the 2015 multi-site study, the investigators attempted to obtain results as if the sample was a single organization.

The dependent variable for the research was the number of civilians shot and killed by local police in 2015.¹⁹⁴ State and federal agencies were excluded to limit further the operational variables contributing to an error rate.¹⁹⁵ Death rates for the study came from a synthesis and analysis of data obtained from *The Washington Post*, *killedbypolice.net*, and the Federal Bureau of Investigation Uniform Crime Statistics Report (FBI) (UCR) for 2015.¹⁹⁶ Pang and Pavlou collected information from combined sources because data on police fatal shootings are not maintained by another means.¹⁹⁷ The U.S. government currently does not collect statistics on police-involved shootings. The investigators' method to collect the research data did have a series of controls in place to maintain accuracy, but the researchers could have missed some of the shooting information. However, for this study, unreported police shooting incidents would not have significantly impacted the findings.

To speculate on the role of technology during a police-involved shooting, Pang and Pavlou selected Signal Detection Theory (SDT) as a model to identify the shooter's thought process.¹⁹⁸ SDT is a psychological theory that explains how a person may arrive at a conclusion based on ambiguous signals and a means to decipher signals and filter noise from useful information that facilitates the decision process.¹⁹⁹ Using the SDT

¹⁹² Pang and Pavlou, "Armed with Technology."

¹⁹³ Pang and Pavlou, "Armed with Technology."

¹⁹⁴ Pang and Pavlou, "Armed with Technology."

¹⁹⁵ Pang and Pavlou, "Armed with Technology."

¹⁹⁶ Pang and Pavlou, "Armed with Technology."

¹⁹⁷ Pang and Pavlou, "Armed with Technology."

¹⁹⁸ Pang and Pavlou, "Armed with Technology."

¹⁹⁹ "Signal Detection Theory," accessed November 28, 2016, <http://psychology.jrank.org/pages/585/Signal-Detection-Theory.html>.

model, the researchers proposed that an officer will consider two factors: first, the risks that the suspect poses, and, second, the level of accountability for their deadly force actions.²⁰⁰

With the SDT thought process in mind, the investigators surmised two possibilities. First, when technology is in use for intelligence and analysis purposes, it may reduce the ambiguity related to an officer's perceptions as to a suspect's degree of violence.²⁰¹ Second, the technology may assist in justifying a shooting, in turn making the officer less averse to deploying deadly force.²⁰² Pang and Pavlou combined the psychological concepts related to decision-making (SDT) along with information gathered from previous BWC studies as a basis for their hypotheses.

Ultimately, Pang and Pavlou surmised that BWCs might not have the desired behavioral effect on the police and the public. Instead, the researchers support findings that there is a greater positive impact on behavior from the analysis of information and use of communicating technology. Their empirical analysis conducted by the investigators suggested that the utilization of a BWC was associated with a 3.64-percent increase in shooting deaths of civilians by the police.²⁰³ The researchers also reported that fatal shooting rates were lower when agencies analyzed crime data and provided officers with intelligence information.²⁰⁴ Comparatively, organizations that engaged in the analysis and information sharing process had a 2.15 percent lower rate of fatal shootings, as opposed to agencies that did not have a crime analysis process in place.²⁰⁵ Similarly, the investigators found that organizations that allowed for smartphone users to access intelligence information had a lower fatal shooting rate of 2.72 percent.²⁰⁶

²⁰⁰ Pang and Pavlou, "Armed with Technology."

²⁰¹ Pang and Pavlou, "Armed with Technology."

²⁰² Pang and Pavlou, "Armed with Technology."

²⁰³ Pang and Pavlou, "Armed with Technology."

²⁰⁴ Pang and Pavlou, "Armed with Technology."

²⁰⁵ Pang and Pavlou, "Armed with Technology."

²⁰⁶ Pang and Pavlou, "Armed with Technology."

The information reported by the Pang and Pavlou contradicts the civilizing behavior concepts of earlier BWC studies. While the findings are not in direct opposition to the Rialto study's findings that officers' self-awareness increased when being watched, the results, however, may show an unintended consequence to recording. Pang and Pavlou contend that the presence of the BWC on an officer changes the decision process (SDT) and lowers the officer's inhibitions to shoot.²⁰⁷ Still, in other stages of the experiment, the reviewers conducted a more in-depth analysis, isolating the suspect identifiers to include race, age, and armed status at the time of the encounter.²⁰⁸ The review established more pronounced police fatal shootings for African Americans and Hispanics over Whites and Asians, as well as for armed suspects, when police BWCs were in use.²⁰⁹ The results recorded in this portion of the study directly contrast the intentions that fueled the 2014 spike in BWC implementation for law enforcement, regarding the history of deadly force encounters between the police and minority groups.²¹⁰

Other BWC reports indirectly support the claims made by Pang and Pavlou. In particular, the researchers' theory that BWC recordings reduce an officer's apprehension to shoot is supported by the opinions of experts in the field of policing as well as a U.S. Supreme Court ruling as described below. The indirect support stems from the combination of practical and legal concepts. First, there is the indication that BWC recordings are useful as prosthetic memory devices and evidence collection tools.²¹¹ Then, there is the sound impact on judicial proceedings as set by the U.S. Supreme Court case of *Scott v Harris*.²¹² Combining the two statements about BWC evidence leads to a

²⁰⁷ Pang and Pavlou, "Armed with Technology."

²⁰⁸ Pang and Pavlou, "Armed with Technology."

²⁰⁹ Pang and Pavlou, "Armed with Technology."

²¹⁰ Kevin Johnson, "Police Body Cameras Offer Benefits, Require Training," USA TODAY, September 12, 2014, <https://www.usatoday.com/story/news/nation/2014/09/12/police-body-cameras/15522059/>.

²¹¹ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*.

²¹² Wasserman, "Moral Panics and Body Cameras." In the *Scott v Harris* case, the U.S. Supreme Court held that the video of a pursuit was conclusive and unambiguous that jury review was unnecessary.

presumption that BWC recordings are a substantial and sound means of evidence. In essence, this does support the researchers' report that officers may rely upon the sound evidence as an independent witness to justify the shooting, thus making them less apprehensive to use deadly force.

However, the data used for Pang and Pavlou's study may not be entirely accurate. BWC utilization and officer-involved shooting information for their study was taken from separate years. Also, the researchers could not account for unobservable general trends that affect crime rates, and data on whether or not police shootings were justified was unobtainable.²¹³ Therefore, the study could not conclude if the use of BWCs had any impact on justified versus unjustified shootings. The researchers also could not isolate the same increases in deadly force encounters over subsequent years.²¹⁴ However, BWC use was also not constant in the years preceding Pang and Pavlou's investigation. Pang and Pavlou also could not replicate increased deadly force results by substituting dashboard camera data for BWCs.²¹⁵ There is value, however, in that the study results could not be replicated. The uniqueness of the findings from this study may be an indication that time is necessary before the BWC has a subconscious effect on officer behavior.

While there are several concerns with accepting this study at face value and many variables that could have affected the results, the researchers did take significant precautions to ensure the validity of the data used for analysis. Pang and Pavlou initiated several controls to mitigate variables that could have affected the study results. For example, they tailored sample agency selection to include indicators that affect crimes and violence such as area income, income inequality, vacant homes, social instability characteristics, unemployment, and poverty rates.²¹⁶ They also completed robust testing

²¹³ Pang and Pavlou, "Armed with Technology." In the case of a police involved shooting, the evidence is presented to a Grand Jury for a finding of shooting justification or error. The Grand Jury may decide to indict the Officer (s) for a crime related to the person's death or clear the Officer of wrongdoing.

²¹⁴ Pang and Pavlou, "Armed with Technology."

²¹⁵ Pang and Pavlou, "Armed with Technology."

²¹⁶ Pang and Pavlou, "Armed with Technology."

to ensure no concern with reverse causality.²¹⁷ To verify the validity of their test and isolate the variables, the researchers compared the use of deadly force rates from the FBI UCR statistics between 2007–2011, looking for increases in incidents and technology implementation.²¹⁸ The investigators did not find a correlation that would alter the results of their study. By completing the falsification testing, the researchers supported the possibility that the evidence their study produced was likely, regardless of other occurrences. This report is essential if only to serve as proof of a significant need for officer education in the potential unintended consequences associated with BWCs and to solidify the need for further research on the subject.

6. Denver, Colorado

In a 2016 BWC study from Denver, Colorado, Barak Ariel reports that evidence suggests BWCs increase a citizen’s willingness to report crimes in low crime areas; however, the BWCs did not have a discernable effect in the locations with higher than average crime rates.²¹⁹ Ariel, in cooperation from the Denver Police Department, set out to investigate the effects of BWCs on the public’s perceptions of police legitimacy.²²⁰ He hypothesized the possibility that “BWCs can alter the extent to which victims and offenders feel more confident in calling the police to solve their problems.”²²¹ Ariel’s theory behind the motivations for the study was twofold. The first was that police legitimacy is enhanced by the equipment’s ability to facilitate police efficiency and effectiveness.²²² In a 2003 article, Sunshine and Tyler support Ariel’s claim by writing that research finds citizen cooperation “is linked to evaluations of police performance, to

²¹⁷ Pang and Pavlou, “Armed with Technology.” Reverse Causality is a reversal of the presumption between cause and effect. In this case, the researchers were attempting to identify if the reverse presumption was occurring, specifically if an increase in crimes over years was fueling the use of technology.

²¹⁸ Pang and Pavlou, “Armed with Technology.”

²¹⁹ Ariel, “Increasing Cooperation With the Police Using Body Worn Cameras.”

²²⁰ Ariel, “Increasing Cooperation With the Police Using Body Worn Cameras.”

²²¹ Ariel, “Increasing Cooperation With the Police Using Body Worn Cameras,” 334.

²²² Ariel, “Increasing Cooperation With the Police Using Body Worn Cameras.”

risk, and to judgments about distributive justice.”²²³ Ariel’s second theory stems from the 2012 Rialto BWC report indicating that, if the public believes the police are being watched, they are viewed as more professional.²²⁴ Ariel’s expectation is that the public may be more likely to cooperate with a legitimate agency that is identifiable as transparent, accountable, and useful.²²⁵

Denver police participation consisted of outfitting one of their six precincts with BWCs for a six-month period.²²⁶ The officers were not given specific instructions other than to handle business as usual. Data indicating the “raw incidents” reported to the police was then isolated and compared to reported incident data from the same period of the preceding year.²²⁷ The comparative study divided the precincts into street segments to collect crime-reporting information, as the closest means to determine BWC impact. Street segments were the most consistent metric the researchers could use since crime reporting is not tracked by individual officers or groups. When the data was analyzed, Ariel also speculated that BWCs might have a deterrent effect, causing a reduction in repeated incidents of crime in the precinct where BWCs were present.²²⁸

The analysis of information collected in Denver revealed little evidence that BWCs affected overall crime. The BWC analysis could not be associated with a reduction in crime even in areas where rational thought would assume that exposure to BWC policing would deter repeat offenses, such in the case of the crimes of domestic violence, traffic violations, and public disorder.²²⁹ The analysis did, however, reveal that people were more inclined to report crimes in select areas.²³⁰ According to Ariel, the association of BWCs with the increases in police cooperation or the willingness to report

²²³ Jason Sunshine and Tom R. Tyler, “The Role of Procedural Justice and Legitimacy in Shaping Public Support for Policing,” *Law & Society Review* 3, no. 37 (2003): 513–48.

²²⁴ Ariel, “Increasing Cooperation With the Police Using Body Worn Cameras,” 352.

²²⁵ Ariel, “Increasing Cooperation With the Police Using Body Worn Cameras.”

²²⁶ Ariel, “Increasing Cooperation With the Police Using Body Worn Cameras.”

²²⁷ Ariel, “Increasing Cooperation With the Police Using Body Worn Cameras,” 340.

²²⁸ Ariel, “Increasing Cooperation With the Police Using Body Worn Cameras,” 350.

²²⁹ Ariel, “Increasing Cooperation With the Police Using Body Worn Cameras.”

²³⁰ Ariel, “Increasing Cooperation With the Police Using Body Worn Cameras.”

a crime is an indicator that BWCs may be linked to the expectations of legitimacy.²³¹ Ariel construed the increased crime reporting as possibly a result of greater confidence in police abilities resulting from BWC use. However, the positive outcome is a small possibility among a sea of possible variables.

The 2016 Denver experiment attempted to isolate the changes brought about by BWC use and to implement controls to limit the variables affecting the study outcome. However, accomplishing the goal of isolating the effect of the BWC on the expectations of police legitimacy is a difficult task without the completion of citizen opinion surveys.²³² The time constraints and limitations of the available data also detract from the validity of the reported outcomes. Despite the difficulty in isolating the causal effects of the BWC, the study is critical to the advancement of BWC best practices because it shows that BWCs may contribute to police legitimacy. The Denver study also provides a basis for future BWC research by supporting previously stated theories that crime reporting may be a possible measurable gauge for public perceptions of police legitimacy.²³³

C. BWC PROBLEMS AND AREAS OF CONSIDERATION

The greatest potential adverse BWC impact is that use of BWCs may contribute directly to negative police behavior—exactly the opposite of the intended result. That is, on the one hand, in a 2015 BWC assessment, Harold Wasserman noted that one of the beliefs behind BWC use is that they will cause greater deliberation before police engage in acts of enforcement or resistance.²³⁴ On the other hand, one study exists that indicates cameras may be a direct contributing factor in police-involved deadly force incidents.²³⁵ Researchers Min-Seok Pang and Paul Pavlou concluded in 2016 “the use of wearable body cameras is related to an increase in fatal shootings by the police.”²³⁶ Also, they

²³¹ Ariel, “Increasing Cooperation With the Police Using Body Worn Cameras.”

²³² Ariel, “Increasing Cooperation With the Police Using Body Worn Cameras.”

²³³ Ariel, “Increasing Cooperation With the Police Using Body Worn Cameras.”

²³⁴ Wasserman, “Moral Panics and Body Cameras.”

²³⁵ Pang and Pavlou, “Armed with Technology.”

²³⁶ Pang and Pavlou, “Armed with Technology.”

found that fatal shootings are “more pronounced” for “males, youth, and minorities.”²³⁷ If the findings of Pang and Pavlou are scientifically confirmed by further research, an entirely new problem is arising from the supposed solution: BWC use directly contradicts the de-escalation purposes that propelled law enforcement’s BWC implementation. Introducing BWCs as a public-relations solution without long-term vision may be similar to solving an over-population problem by introducing predators. One short-term solution gives way to a more significant problem in the end. For now, assessment of the research on BWCs indicates that there is a lack of transferable information the subject. The BWC may also be causing officer behavior changes that compound problems with the public.

1. Lack of Transferable Research

Initial studies on BWC use in Rialto, Mesa, and Phoenix reported positive results from BWC use, by decreasing use of force incidents and citizen complaints against the police. However, other reports contradict the positive aspects of BWC use, arguing that BWCs have a negative or neutral impact on law enforcement and citizen behavior. With BWCs having a positive impact on police use of force in question, research also began to suggest that BWCs were not necessarily the be all and end all in solving public perception of police legitimacy, either. While the increases reported by investigations were less than drastic, the results still suggest that BWCs are not beneficial to improving behavior, from either the police or the public, and may, in fact, be detrimental as they are currently deployed. If anything, the studies indicate that BWCs’ effects are null, and they link police behavior to variables other than BWC use. The varying results of BWC studies and uncertainty of the controls used to gather results limit the evidence that is transferable from one agency to the next.

2. Officer Discretionary Recording

Research studies indicate that officer compliance in activating BWCs for all assignments is difficult. Researchers from several studies, such as those conducted in Mesa, Phoenix, and the RAND multi-site experiment, have reported that officers favor

²³⁷ Pang and Pavlou, “Armed with Technology.”

discretionary recording. However, allowing officers the discretion to record select types of calls and to start recording after incident escalation is contradictory to the transparency goals of BWC use. Cubitt et al.'s review of the data provided from several preliminary studies concluded that, in the cases where the officers were given the discretion to record incidents, the integrity of the systems was undermined, further diluting the police credibility.²³⁸

Despite the lack of transparency, mandating officers to record with BWCs on all calls does not seem to be a viable solution. There are valid reasons for and against allowing officers the discretionary authority to record incidents. Several reports on BWC policy development encourage the protection of victims by allowing discretionary recording in certain sensitive cases such as sexual assault and child abuse cases as well as requiring crime victims' consent for recording. Miller and Toliver, Henderson, and White all recommend that discretion in select sensitive cases is an essential part of a well-developed policy.²³⁹ However, Wasserman believes that discretionary actions may lead to greater opportunity for areas of grievance and litigation.²⁴⁰ In other discussions, Henderson and Stanley acknowledged that suspicion might arise at the intentional omissions or failure to record police contacts, leading to controversy.²⁴¹

One research team found that not recording may cause a problem that extends beyond the failure to capture an incident. In 2016, Ariel et al. investigated the link between use of force incidents and officer discretion on activating BWCs.²⁴² After completing a report on the initial 2015 multi-site findings, the team of RAND investigators conducted a supplemental analysis of the existing data. The researchers

²³⁸ Cubitt et al., "Body-Worn Video."

²³⁹ Henderson, "Body Cameras"; White, *Police Officer Body-Worn Cameras: Assessing the Evidence*; Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

²⁴⁰ Wasserman, "Moral Panics and Body Cameras."

²⁴¹ Wasserman, "Moral Panics and Body Cameras"; Stanley, "Police Body-Mounted Cameras"; Wade Henderson, "Body Cameras: Can Technology Increase Protection for Law Enforcement Officers and The Public?" testimony before the Subcommittee on Crime and Terrorism, 114th Cong. 1 (2015) (statement of Wade Henderson, President & CEO, The Leadership Conference on Civil and Human Rights.)

²⁴² Ariel et al., "Report: Increases."

attempted to determine why the use of BWCs may have caused increases in the use of force incidents in some cases and decreases in others.²⁴³ In a supplemental report, Ariel et al. argue that police discretion in BWC activation is directly linked to the BWCs' ability to deter inappropriate use of force.²⁴⁴ The researchers' sub-analysis found that, when agency BWC policies mandated recording and officers had limited authority to cease activations, improper use of force incidents declined.²⁴⁵ Also, in situations where organizations maintained weak BWC policies allowing officers greater discretion to record, without consequences for deactivations, the deterrent factors of the BWC were less effective.²⁴⁶ Evidence from the same study suggests that, when recording commences after an encounter has escalated, the BWC does not have deterrent effects on the police use of inappropriate force.²⁴⁷ The Ariel et al. supplemental investigation reports provide a substantial argument that agency pilot programs, effective policies, and appropriate officer training is badly needed if BWCs are to help at all.²⁴⁸ The study also adds weight to prevalent opinions seen thus far that further research in the subject area is required.

3. Public Scrutiny: Policy for BWC Use and Constitutional Rights Issues

Equal amounts of skepticism met the positive praise and hope that followed BWC implementation. Howard Wasserman views the sudden push to obtain BWCs for police as a form of "Moral Panic," arguing that, when society perceives a threat to societal values and interests, lawmakers often react quickly, sometimes without valid research on the subject.²⁴⁹ Also, Wasserman views a problem with the rhetoric surrounding the proposals, stating that the public views cameras as a "cure" to the problem.²⁵⁰ He further argues that the discussion around cameras should be less about the cure and more open

²⁴³ Ariel et al., "Report: Increases."

²⁴⁴ Ariel et al., "Report: Increases."

²⁴⁵ Ariel et al., "The Deterrence Spectrum."

²⁴⁶ Ariel et al., "The Deterrence Spectrum."

²⁴⁷ Ariel et al., "The Deterrence Spectrum."

²⁴⁸ Ariel et al., "The Deterrence Spectrum."

²⁴⁹ Wasserman, "Moral Panics and Body Cameras."

²⁵⁰ Wasserman, "Moral Panics and Body Cameras."

about the limitations.²⁵¹ Part of Wasserman’s argument builds on the limited data available on body camera usage, putting him in the group establishing a need for additional investigation into the subject.

Some civil liberties groups are cautious about committing to rigid camera policies, with some, such as Grewal, writing for The Constitution Project, suggesting that BWC policies should be living documents with community input sought on an ongoing basis.²⁵² However, the ACLU and Grewal both agree that body-camera policies should be strict, spelling out when to record and the situations that require privacy and protection. The policy should dictate the recording controls with officer discretion eliminated, with preference going to recording rather than not recording.²⁵³ Agency policies should be publicly available and tailored to retain the benefits but limit the infringement of rights.²⁵⁴ Stanley does not waiver, however, on the issue of particular recordings. According to Stanley, the ACLU’s position is that all warrant executions and SWAT-type calls should require recording at all times because of the nature of the assignment.²⁵⁵ Stanley and Grewal also contest the stance that public notification must be made each time that BWCs are in use with crime victims having the ability to decline their operation. The ACLU also opines that, in addition to the advisement of recording, there should be a clear indicator of camera operations, such as a signal light.²⁵⁶

The policy, use, and release of video evidence are very controversial among groups that criticize and support BWC use. In the 2015 Senate hearing on BWCs, Wade Henderson called for safeguards of privacy by not allowing officers to view footage of

²⁵¹ Wasserman, “Moral Panics and Body Cameras.”

²⁵² Madhu Grewal, “The Use of Body-Worn Cameras by Law Enforcement,” (testimony before The President’s Task Force on 21st Century Policing, Listening Session on Technology and Social Media, by Madhu Grewal, Policy Counsel, The Constitution Project, January 28, 2015).

²⁵³ Stanley, “Police Body-Mounted Cameras.”

²⁵⁴ Grewal, “The Use of Body-Worn Cameras by Law Enforcement”; Stanley, “Police Body-Mounted Cameras.”

²⁵⁵ Stanley, “Police Body-Mounted Cameras”; Miller, “Body Cameras: Can Technology Increase Protection for Law Enforcement Officers and The Public?”

²⁵⁶ Grewal, “The Use of Body-Worn Cameras by Law Enforcement”; Stanley, “Police Body-Mounted Cameras”; Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

their videos before writing a report. Henderson further called for the release of officer-involved use of force videos “upon request.”²⁵⁷ In the same hearing, Jared Bruder, Executive Director of the South Carolina Sheriffs Association argued the direct opposite of Henderson’s claims, seeking to allow local policies to dictate officer’s practices while allowing established rules of evidence to govern the release of body camera video recordings.²⁵⁸ Miller and Toliver recommend that, when agencies are developing a BWC program, First and Fourth Amendment rights need protection by written rules in addition to the law alone.²⁵⁹

4. Privacy and Community Polarization Issues

In The Leadership Conference testimony before the U.S. Senate, Henderson revealed the opinions of the civil liberties groups he represents on BWC systems. Henderson identifies that the body camera introduces a technology that can record citizens at their most vulnerable points, during traumatic experiences, in their private settings, and over a broad spectrum of monitoring.²⁶⁰ Citizen concerns are compounded by their lack of control from the outward recording instruments, fearing that body cameras can record without an individual basis for suspicion and could hamper free speech.²⁶¹ In Henderson’s testimony and an assessment completed by Data & Society, the authors state that cameras could adversely affect community relations by causing a state of hyper-surveillance within communities that receive a greater amount of policing,

²⁵⁷ Henderson, “Body Cameras: Can Technology Increase Protection for Law Enforcement Officers and The Public?”

²⁵⁸ Jarrod Bruder, “Body Cameras: Can Technology Increase Protection for Law Enforcement Officers and The Public?” testimony before the Subcommittee on Crime and Terrorism, 114th Cong. 1 (2015) (statement of Jarrod Bruder, Executive Director, South Carolina Sheriff’s Association).

²⁵⁹ Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned.*; Grewal, “The Use of Body-Worn Cameras by Law Enforcement.”

²⁶⁰ Henderson, “Body Cameras: Can Technology Increase Protection for Law Enforcement Officers and The Public?”

²⁶¹ Henderson, “Body Cameras: Can Technology Increase Protection for Law Enforcement Officers and The Public?”

such a low-income neighborhoods.²⁶² Henderson further said that the hyper vigilant use of BWCs would further divide the police from the community they serve.²⁶³

Beyond the basic questions regarding how video affects privacy rights, evidence also exists that BWC use may further polarize police and citizens, the opposite effect sought after in the wake of turmoil and deaths. Miller and Toliver assessed that concerns exist about how the presence of cameras will cause citizens, victims, and witnesses to be less likely to offer police information.²⁶⁴ The writers for PERF have indicated in several reports that the creation of an overexposed environment may violate the privacy rights of the police themselves.²⁶⁵ Stanley of the ACLU further agreed with the PERF assessment on police officer privacy.²⁶⁶ White noted that, in some circumstances, expressed privacy concerns are protected by existing state and federal laws.²⁶⁷ According to White, recording devices, when activated, can also violate certain laws, such as those that require two-party recording consent and federal legislation that prohibits video images where there is an expectation of privacy.²⁶⁸ In identifying the laws governing the interception of video and audio recordings, White has identified existing legislative areas that will shape the process of camera evidence obtainment.²⁶⁹

The critics of body cameras and privacy watchdog groups believe that the tools are for police accountability above all else. The Leadership Conference and the ACLU both express great concern that the integration of police BWCs and biometric technology

²⁶² Henderson, “Body Cameras: Can Technology Increase Protection for Law Enforcement Officers and The Public?”; Mateescu, Rosenblat, and Boyd, “Police Body Worn Cameras.”

²⁶³ Henderson, “Body Cameras: Can Technology Increase Protection for Law Enforcement Officers and The Public?”

²⁶⁴ Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

²⁶⁵ Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*; Stanley, “Police Body-Mounted Cameras.”

²⁶⁶ Stanley, “Police Body-Mounted Cameras.”

²⁶⁷ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*.

²⁶⁸ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*; Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

²⁶⁹ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*.

will directly cause the over-policing of select communities.²⁷⁰ The Leadership Conference, which represents over 200 civil and human rights national organizations, submitted written comments to the President’s Task Force on 21st Century Policing, proposing that facial recognition and other biometric software in conjunction with camera technology should be subject to judicial authorization, with a presumption against the collection and use of cameras for biometric evaluations.²⁷¹ The connection between body cameras, biometric software, and over-policing is not proven, and other research contradicts the concern. However, the views of civil liberties organizations cannot be ignored and seem to require more evidence that will either support or refute their claims.

²⁷⁰ Henderson, “Body Cameras: Can Technology Increase Protection for Law Enforcement Officers and The Public?”; Stanley, “Police Body-Mounted Cameras.”

²⁷¹ Henderson, “Body Cameras: Can Technology Increase Protection for Law Enforcement Officers and The Public?”

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III. HISTORICAL ANALYSIS POLICE VEHICLE CAMERAS

Bad-guy drivers, who put a tailgating, lane-switching show on the road, find themselves performing on TV and starring in a replay for the judge.

—E. D. Fales Jr.
Popular Mechanics, 1968²⁷²

A video camera mounted in a police vehicle with a view looking out of the front windshield or dashboard, dashcams can record audio as well as video images and may have dual lenses that simultaneously record the interior of the police vehicle. In order to help broaden perceptions of BWCs, especially considering the lack of BWC research to date, this chapter analyzes the background and implementation history of dashcams, examines the research done during implementation, and considers the similarities of BWC implementation before turning to issues arising from dashcam usage since the late 1960s.

Decision-makers implemented dashcams and BWCs in response to similar issues: public outcry over citizen-police violence and the relationship between that violence and race. Thus, Chapter III also offers an in-depth comparative exploration of police perception and productivity, citizen expectations, policy and privacy issues, and best practices, especially the need for increased police training.

A. DASHCAM IMPLEMENTATION HISTORY

In October 1968, *Popular Mechanics* magazine featured an article by E.D. Fales that hailed the Connecticut State Police (CSP) as the first department in the nation to take a video camera into a motor vehicle for traffic enforcement.²⁷³ The article describes a vehicle pursuit and other law enforcement situations in which an officer used the dashcam. Fales recognized that public skepticism would come from using cameras,

²⁷² E. D. Fales Jr., “Watch It! You’re on Trooper TV,” *Popular Mechanics*, October 1968, <https://books.google.com/books?id=G9QDAAAAMBAJ&printsec=frontcover#v=onepage&q&f=false>.

²⁷³ Fales Jr., “Watch It You’re on Trooper TV.”

noting that: “to date only two or three courts have admitted the videotape as evidence.”²⁷⁴ The 1960s CSP dashcam attempt used equipment that was technologically available at the time. The Trooper used a video recorder designed for home use, steadying it by hand.²⁷⁵ Despite the use of equipment not readily meant for mobile recording, the experiment highlighted that video recording could play a significant role in police operations. The article highlighted how video evidence affected citizen attitudes and bolstered the credibility of evidence.²⁷⁶ Motor vehicle violators that were able to view the recordings had empathetic responses that indicated learning from the experience as opposed to sole opposition.²⁷⁷ Fales also reported that drivers were less likely to refute video evidence and more likely to admit guilt.²⁷⁸

Despite the publication and recognized value of mobile video evidence, complications with dashcam mechanics slowed the progress of the equipment used in policing until the 1980s. Recording equipment before 1977 consisted of a reel-to-reel technology that was bulky and difficult for vehicle use. However, VHS technology released in 1977 condensed the size of recording devices.²⁷⁹ In the early 1980s, officers began to use VHS technology to mount dashboard cameras.²⁸⁰

In 1988, the group Mothers Against Drunk Driving (MADD), along with Aetna Insurance, started a dashcam program that purchased the equipment for police cruisers.²⁸¹ MADD consists of anti-drunk driving advocates who lobby for strong legislation against

²⁷⁴ Fales Jr., “Watch It You’re on Trooper TV,” 204.

²⁷⁵ Fales Jr., “Watch It You’re on Trooper TV.”

²⁷⁶ Fales Jr., “Watch It You’re on Trooper TV.”

²⁷⁷ Fales Jr., “Watch It You’re on Trooper TV.”

²⁷⁸ Fales Jr., “Watch It You’re on Trooper TV.”

²⁷⁹ Piry Ganapati, “June 4, 1977: VHS Comes to America,” *WIRED*, January 4, 2010, <https://www.wired.com/2010/06/0604vhs-ces/>.

²⁸⁰ Depalma, Jessica, “Caught on Camera: The History of the Police Dashcam,” *NBC News*, October 22, 2014, <http://www.nbcnews.com/feature/long-story-short/video/caught-on-camera-the-history-of-the-police-dashcam-548708419951>.

²⁸¹ Patricia Davis, “Police Videos to Focus on Drunken Driving,” *Washington Post*, August 30, 1991, https://www.washingtonpost.com/archive/local/1991/08/30/police-videos-to-focus-on-drunken-driving/4a19ec1a-7d5f-4010-860a-2bcb4a25a7c3/?utm_term=.ba99e0fcd268.

intoxicated vehicle operations.²⁸² Through their efforts, MADD helped catalyze dashcam implementation, calling for the technology to assist in evidence retrieval.²⁸³ By 1991, the program dubbed “Eye on DUI” was in use by 181 police agencies in 25 states.²⁸⁴ Political pressures brought about by MADD shifted emphasis to the conviction and punishment of DWI offenders.²⁸⁵ As a result, police agencies began installing dashcams to record the actions of suspects.²⁸⁶

At about the same time, another push for dashcam implementation amid simmering social issues began as increased narcotics interdiction stops endangered officer safety. Interdiction stops also increased the dangers associated with pulling over suspects who might be carrying weapons, might be high on narcotics that increase aggression, or might simply have had much more to lose than the average speeder or drunk driver. One such stop, on January 21, 1991, led to the death of Constable Darnell Edward Lunsford in Garrison, Texas.²⁸⁷ Lunsford’s dashcam recorded the details of the stop; he was ambushed and stabbed while searching a suspect’s vehicle. The video produced by his dashcam subsequently led to the arrest of two suspects in his murder less than three days after the event.²⁸⁸ The publicity from the captured video evidence pushed forward the safety features of the dashcam.

By 1999, aggressive interdiction tactics led to “allegations of racial bias or racial profiling . . . lodged against police agencies across the United States.”²⁸⁹ The profiling accusations, in turn, resulted in federal legislation requiring documentation of motor

²⁸² “Our Story,” *MADD*, accessed October 9, 2017, <https://www.madd.org/about-us/our-story/>.

²⁸³ IACP Staff, “Impact of Video Evidence on Modern Policing Research and Best Practices from the IACP Study on In-Car Cameras” (International Association of Chiefs of Police, 2002), <https://www.bja.gov/bwc/pdfs/IACPIn-CarCameraReport.pdf>.

²⁸⁴ Davis, “Police Videos to Focus on Drunken Driving.”

²⁸⁵ IACP Staff, “Impact of Video Evidence on Modern Policing.”

²⁸⁶ IACP Staff, “Impact of Video Evidence on Modern Policing.”

²⁸⁷ “Constable’s Death Seen on Videotape,” *New York Times*, January 25, 1991, <http://www.nytimes.com/1991/01/25/us/constable-s-death-seen-on-videotape.html>.

²⁸⁸ “Constable’s Death Seen on Videotape.”

²⁸⁹ IACP Staff, “Impact of Video Evidence on Modern Policing,” 11.

vehicle stop details.²⁹⁰ Individual states also responded to the complaints with local mandates and investigations into police department operations. For example, in 1999, the New Jersey Attorney General launched an investigation specifically targeting the State Police patrol division because of racial profiling allegations. A reporter in New Jersey found that, during a two-month span in 1997, 75 percent of State Police arrests made on the turnpike were of minorities.²⁹¹ In the late 1990s and early 2000s, the Office of Community Oriented Policing Services (COPS), under the Department of Justice, recognized the national need to assist law agencies with allegations of racial profiling, officer safety issues, and public trust.²⁹²

A 1999 article by Mark Moore in the *Wall Street Journal* highlights the growing mistrust of police. Moore's article describes the aftermath of the Amadou Diallo shooting and the NYPD's history of ignoring complaints from minorities.²⁹³ Moore attributes NYPD ineffectiveness to the agency's unfair practices: "a police department that lacks legitimacy can no longer produce crime control, security or justice."²⁹⁴ Addressing the problem by leveraging the technology available at the time, COPS began investing in dashcam research. The organization funded grants for companies to design cameras that overcame the limitations of front view-only systems.²⁹⁵ COPS then initiated action by financing dashcam implementation programs directly.²⁹⁶

²⁹⁰ IACP Staff, "Impact of Video Evidence on Modern Policing."

²⁹¹ Christopher Baxter, "Timeline of N.J. State Police Struggles with Racial Discrimination," *NJ.com*, accessed June 21, 2017, http://www.nj.com/politics/index.ssf/2014/01/timeline_of_nj_state_police_struggles_with_racial_discrimination.html.

²⁹² IACP Staff, "Impact of Video Evidence on Modern Policing."

²⁹³ Mark H. Moore, "Manager's Journal: Private-Sector Lessons for New York's Finest," *Wall Street Journal, Eastern Edition*, April 12, 1999, <http://search.proquest.com/docview/398673993/abstract/AE172058F3F34653PQ/1>.

²⁹⁴ Moore, "Manager's Journal."

²⁹⁵ Hohman, Andrew, "Bringing the Dispatcher to the Scene with Panoramic Imaging and Remote Video Transmission, Final Report," Final Report Contract #: 1999-IJ-CX-KO20 (Troy, NY: Interscience Inc., October 10, 2001).

²⁹⁶ Westphal, Lonnie J., "The In-Car Camera: Value and Impact," *The Police Chief*, August 2004.

In 2000, COPS instituted the In-Car Camera Initiative Program to deliver dashcam funds to state police and highway patrol agencies throughout the United States.²⁹⁷ When COPS started dashcam financing, an NIJ study on the police use of the equipment reported that only 11 percent of state police and highway patrol vehicles in the United States had car cameras.²⁹⁸ Between 2000 and 2003, the COPS Office granted more than \$21 million to state police agencies for the purchase and support of dashcam programs.²⁹⁹ The federal funding helped increase the number of state patrol vehicles equipped with dashcams to 17,500, representing 72 percent of all state police cars.³⁰⁰ The COPS dashcam program thus dynamically changed policing in the United States by launching the trend of police video monitoring.

After initial implementation, dashcam technology progressed with the movement from analog to digital recording features. The digital integration of cameras reduced the size of equipment and increased data retention capabilities.³⁰¹ Digital technology also brought about new electronic capabilities, such as prerecording and the ability use to live-feed closed-circuit television cameras (CCTV), which were unavailable with analog systems. Live-feed systems allow wireless video streaming from interior surveillance cameras to be broadcast to dashcams.³⁰² The inclusion of a memory chip into digital dashcams allows for pre-event recording, allowing for a segment of video recording before the manual start time.³⁰³ The digital updates to dashcams enhanced evidence collection, officer safety, and enabled technology integration.

²⁹⁷ IACP Staff, “Impact of Video Evidence on Modern Policing,” 5.

²⁹⁸ IACP Staff, “Impact of Video Evidence on Modern Policing,” 5.

²⁹⁹ IACP Staff, “In-Car Cameras,” TATP (International Association of Chiefs of Police, 2006), <http://www.theiacp.org/portals/0/pdfs/InCarCamera.pdf>.

³⁰⁰ IACP Staff, “Impact of Video Evidence on Modern Policing.”

³⁰¹ Jim Kuboviak, “Digital Mobile In-Car Video Concerns,” *Law & Order; Wilmette* 52, no. 7 (July 2004): 118–21, <http://search.proquest.com/docview/197234200/abstract/2DDE58A567624A82PQ/28>.

³⁰² Sellers, Michael F. and Schaefer, John T., “A Picture of Safety Deploying IP Technology to Increase Situational Awareness,” *The Police Chief* 70, no. 2 (February 2003): 17–19, 21.

³⁰³ Tim Dees, “The Patrol Video Project,” *Law & Order; Wilmette* 52, no. 7 (July 2004): 92–94, 96–110, 112–114, 116, <http://search.proquest.com/docview/197235008/abstract/2DDE58A567624A82PQ/27>.

The dashcam programs across the United States continued to expand, and, in 2006, COPS, along with the IACP, produced a second technology assistance report to update agencies on the best practices for vehicle camera implementation.³⁰⁴ DOJ grant programs beyond 2006 continued funding equipment and research. The 2007 grant award to the Institute for Forensic Imaging is a prime example of the DOJ's commitment to dashcam technology enhancement. The grant awarded to the Institute was for exploration into the integration of behavioral analysis algorithms and live dashcam recordings.³⁰⁵ Seven years after the widespread implementation of dashcams and with little-recorded data on the effects of the equipment, the NIJ continued seeking advancements in the technology. Still, the technological experimentation has continued to advance. Currently, in 2017, companies look to integrate such software as communications and license plate readers into dashcam systems.³⁰⁶

B. DASHCAM EVOLUTION

Dashcam equipment and evidence-related problems remained separate from the social problems that led to the large-scale delivery of the units into police vehicles. In 2008, the IACP followed up on the 2004 survey to provide additional dashcam guidance. However, the focus shifted from general issues to equipment performance specifications.³⁰⁷ Then, in 2011, legislation began mandating racial profiling training for federal law enforcement officers as well as profiling stipulations for local departments.³⁰⁸

³⁰⁴ IACP Staff, "In-Car Cameras."

³⁰⁵ Institute for Forensic Imaging, "Advanced In-Car Video System," Grant (NCJRS, January 2011).

³⁰⁶ Cotter, Heather, "What Future Capabilities Can Police Expect from Dashcams?," *PoliceOne*, accessed June 22, 2017, <https://www.policeone.com/policing-in-the-video-age/articles/320382006-What-future-capabilities-can-police-expect-from-dashcams/>.

³⁰⁷ IACP Staff, "In-Car Video Camera Systems Performance Specifications: Digital Video Systems Module" (International Association of Chiefs of Police, November 21, 2008), <http://www.theiacp.org/portals/0/pdfs/In-CarPerformanceSpecifications.pdf>.

³⁰⁸ "Cardin Introduces Bill to End Racial Profiling by Law Enforcement," *Office of Ben Cardin, U.S. Senator for Maryland*, October 7, 2011, <https://www.cardin.senate.gov/newsroom/press/release/-cardin-introduces-bill-to-end-racial-profiling-by-law-enforcement>.

By 2014, the issue of racial profiling continued to move away from the dashcam with some reporting that the problem was more widespread than motor vehicle stops.³⁰⁹

As dashcams continue to evolve, manufacturers are building platforms to meet the demands of their consumers. The problems that fueled camera implementation and the issues that have developed with camera usage are areas manufacturers focus on to improve their products. For example, the first dashcams connected to vehicles' overhead lights for operation, and the microphones required manual activity. Original dashcam systems could be bypassed by conducting stops with auxiliary lighting or failing to engage the audio recorder. New systems, however, diminish the requirements on officers to manually record, and new improvements also further assist with officer safety. Enhanced digital storage capacity now allows dashcams to record video regularly and engages audio on command. Modern camera systems record with light activation or with other vehicle conditions such as speed settings, doors opening, or collisions.³¹⁰ Some current dashcam systems continually record, separating events that officers manually initiate. In continuously recording systems, video data is retrievable from the previous 40 hours of recording.³¹¹

C. EFFECTS OF VIDEO MONITORING

Dashcams were implemented to increase transparency into police operations while stabilizing the legitimacy of police practices. However, the introduction of equipment that memorializes every detail of an encounter contained many variables and did not always fulfill the intended mission. The collection of police videos alone created controversy as to the handling and validity of the evidence. In some cases, dashcams changed police attitudes and positively altered the outcome of public contacts. Alternatively, in others, the cameras increased enforcement efforts, possibly creating a more significant divide in police/ public relations.

³⁰⁹ Ranjana Natarajan, "Racial Profiling Has Destroyed Public Trust in Police. Cops Are Exploiting Our Weak Laws against It.," *Washington Post*, December 15, 2014, sec. PostEverything, <https://www.washingtonpost.com/posteverything/wp/2014/12/15/racial-profiling-has-destroyed-public-trust-in-police-cops-are-exploiting-our-weak-laws-against-it/>.

³¹⁰ Cappola, Michele. "Camera System Provides Panoramic View for Police." *TechBeat*, April 2015.

³¹¹ Cappola, Michele. "Camera System Provides Panoramic View for Police."

1. Citizen Expectations

Complaints of racial profiling by police on America's highways in the early 1990s spawned discontent beyond the affected class of citizens. In 1991, soon after the Los Angeles Police beating of motorist Rodney King, a 10-member investigative panel declared that the disproportionate treatment of minorities by the police was a national problem.³¹² Warren M. Christopher chaired the commission investigating the incident.³¹³ Christopher stated, in the final report on the Rodney King incident, that the committee had an awareness of its investigation's relevance throughout the country and hoped that its "findings [would] ignite a national effort to prevent excessive use of force by police officers."³¹⁴ One 2001 report completed by PERF researchers supported the relevancy of Christopher's statement. In the 2001 PERF study on racially biased policing, researchers suggested the feelings of focus groups were consistent with national polls that had found racial profiling was prevalent throughout the United States.³¹⁵

As complaints of racial profiling mounted, police departments increasingly turned to the dashcam for evidence.³¹⁶ As part of the 2002 IACP assessment for COPS, the organization mailed a community perception survey. Nine hundred people from 18 states responded to the survey with 94 percent in favor of the police use of in-car cameras.³¹⁷ The IACP found "the single greatest value" in the citizen survey response to be the support and expectations for equipping of all police officers with in-car cameras.³¹⁸ Citizens like Dottie Stepp summed up the public's feelings about dashcams in a *Washington Post* interview: "it will help the court substantiate the case. And if the police

³¹² Reinhold, Robert, "Violence and Racism Are Routine In Los Angeles Police, Study Says," *NY Times on The Web*, January 10, 1991, <http://www.nytimes.com/books/98/02/08/home/rodney-report.html>.

³¹³ Reinhold, "Violence and Racism are Routine."

³¹⁴ Reinhold, "Violence and Racism are Routine."

³¹⁵ Fridell, Lorie A. et al., "Racially Biased Policing: A Principled Response" (Washington, D.C., United States: Police Executive Research Forum, 2001), <http://fairandimpartialpolicing.com/docs/rbp-principled.pdf>.

³¹⁶ Depalma, Jessica, "Caught on Camera."

³¹⁷ IACP Staff, "In-Car Cameras," 20.

³¹⁸ IACP Staff, "In-Car Cameras," 21.

officer does something wrong, it will help nail them too, I view the cameras protection for both sides.”³¹⁹ Similarly, in a 2002 *USA Today* interview on dashcams, Richard Milton, head of the Oklahoma City Chapter of the National Association for the Advancement of Colored People (NAACP), said cameras were a good idea. Milton stated that dashcams “would take away a lot of suspicion, and it would give police the opportunity to shine.”³²⁰ A review of literature from the time indicates that people expected the installation of dashcams to solve societal problems between the public and police. Statements by the IACP, COPS, and responses to interviews all indicated that people overwhelmingly believed recording officers’ actions would lead to acceptable behavior.

Ultimately, dashcams did not provide the panacea sought by administrators and citizens. On a positive note, the IACP reported that, in some agencies, dashcams caused a drop in complaints of police misconduct.³²¹ However, in one agency that responded to the IACP survey, officer complaints increased after the introduction of dashcams.³²² The continued proliferation of officer misconduct captured by dashcams is further evidence that the technology alone is insufficient to solve policing problems. Hundreds of publicly posted videos featuring police misconduct are available via Youtube.com.³²³ The extent of available videos has prompted authors such as Mark Clark, who writes for *Police Magazine*, to warn subscribers that “whatever you do, you’re probably doing it on video . . . [and] anyone with an Internet connection can post on YouTube or Facebook.”³²⁴ Dashcam videos have increased transparency in police actions, but they have not ceased inappropriate behavior.

³¹⁹ Nguyen, Lan, “In-Vehicle Cameras Aid Patrol Work,” *Washington Post*, July 6, 1995.

³²⁰ McMahon, Patrick, “Increased Clamor for Cameras in Cop Cars,” *USA Today.com*, July 18, 2002, <https://usatoday30.usatoday.com/news/nation/2002/07/19/copc cameras.htm>.

³²¹ IACP Staff, “In-Car Cameras.”

³²² IACP Staff, “In-Car Cameras.”

³²³ muzztard, *Police Brutality*, n.d., <https://www.youtube.com/watch?v=ibSwITK4jjQ>.

³²⁴ Clark, Mark W., “On-Body Video: Eye Witness or Big Brother?,” *Police: The Law Enforcement Magazine*, (July 8, 2013), <http://www.policemag.com/channel/technology/articles/2013/07/on-body-video-eye-witness-or-big-brother.aspx>.

As recently as January 2015, a dashcam video captured a stop during which Michigan motorist Floyd Dent was beaten by Officer William Melendez.³²⁵ As a result of the dashcam video, Dent received a \$1.4 million settlement.³²⁶ In the case, former officer Melendez was convicted of assault and sentenced to 10 years in prison. At Melendez's sentencing, Judge Vonda Evans spoke for over 10 minutes on the continued problems between the police and the public.³²⁷ During sentencing, Judge Evans referred to the dashcam as "the eye of justice . . . [that] was watching you."³²⁸ Judge Evans summed up that police misconduct occurs from the failure to provide equal protection under the Constitution but indicated that it should not happen under the protection of video equipment. However, Melendez's defense argument indicated that he relied on his knowledge, training, and experience during the arrest of Mr. Dent. At his defense, Melendez argued that his use of force was reasonable under the circumstances.³²⁹ For the argument to be valid, Melendez's defense must have attempted to correlate the reasonableness by showing compliance with laws, practices, and procedures. In posing such an argument, Melendez's indicated that he believed his actions were justified and thus deterrence by dashcam would not have prevented the tragedy. The analysis of Judge Evan's and Melendez's opposing positions points to a problem in policing that is beyond the use of video equipment as a complete solution.

Like Judge Evans, many continue to place significant weight on the dashcam's abilities. The demand for police dashcam units has increased steadily since the technology's inception. Between 2000 and 2007, public support and funding for

³²⁵ Erik Ortiz, "Floyd Dent, Man Beaten by Michigan Cops on Camera, Settles for \$1.4 Million," *NBC News*, May 28, 2015, <http://www.nbcnews.com/news/us-news/floyd-dent-man-beaten-michigan-cops-camera-settles-1-4m-n365931>.

³²⁶ Ortiz, "Floyd Dent."

³²⁷ TheAdviseShowTV, *Update-Judge Vonda Evans Sentence Former Inkster Cop In Floyd Dent Police Brutality Case*, n.d., <https://www.youtube.com/watch?v=XrXdLvGCRIQ>.

³²⁸ TheAdviseShowTV.

³²⁹ Elisha Anderson, "Ex-Inkster Cop William Melendez Leaves Prison," *Detroit Free Press*, (January 24, 2017), <http://www.freep.com/story/news/local/michigan/wayne/2017/01/24/inkster-cop-melendez-leaves-prison/96984674/>.

dashcams placed the units in approximately 71,000 police vehicles.³³⁰ Since the initial push for dashcams, the technology continues to progress, currently in stages allowing for 360-degree recording. However, monitoring remains limited to either the forward-facing lens or adjacent areas of the vehicle.³³¹

2. Police Officer Perceptions and Productivity

Dashcams had visible effects on the police officers who used them. For a patrol officer, the marked vehicle extends beyond a means of transportation to a mobile office that serves as a hub for police and citizen contacts. It is understandable how the introduction of recording equipment into operations could cause change. IACP research conducted as early as 2002 indicated changes in officer beliefs and behavior resulting from dashcam implementation. COPS recognized how much time officers spend in their cars along with the type of work conducted, and, as a result, the office focused on dashcams and research to enhance officer safety and curtail racial profiling.³³² In 2002, COPS collaborated with the IACP to gauge the impact of the federal government's investment into dashcam purchases, through an 18-month nationwide survey. The IACP staff collected officer responses from written surveys sent in phases to state agencies and from roundtable discussions held in 2003.³³³ The IACP ensured an appropriate sample size by adjusting the amount of survey requests sent to organizations according to their patrol fleet and amount of dashcams in use.³³⁴

In 2004, officers interviewed as part of the IACP study reasoned that dashcams would cause them to issue more summonses and provide fewer warnings.³³⁵ The officer's responses of stricter enforcement indicated a resistance to being recorded. However, initial IACP reports declared that officers were more receptive to dashcams when they

³³⁰ Bureau of Justice Statistics, "Law Enforcement Management and Administrative Statistics Local Police Departments, 2007," *Bjs.gov*, December 2010, <https://www.bjs.gov/content/pub/ascii/lpd07.txt>.

³³¹ Cappola, Michele, "Camera System Provides Panoramic View for Police."

³³² IACP Staff, "In-Car Cameras."

³³³ IACP Staff, "Impact of Video Evidence on Modern Policing. "

³³⁴ IACP Staff, "In-Car Cameras," 13.

³³⁵ IACP Staff, "In-Car Cameras."

realized the value of the camera in clearing citizen complaints.³³⁶ Still, the officers' responses caused the IACP to issue a warning about dashcam implementation. In a subsequent report for the federal government, the IACP advised agencies adopting the technology that dashcams may drive up complaints and summonses, resulting from fewer warnings and greater enforcement efforts.³³⁷

The IACP reported that officers who stated they would warn less indicated that concerns over supervision drove their expressed opinions.³³⁸ The respondents reasoned they would issue more summonses and provide fewer warnings because their administrators "might review the videotape and question their decisions."³³⁹ In the line-officer interview part of the survey, 28 percent of officers believed the dashcam was a tool for internal affairs to monitor their performance.³⁴⁰ In a different area, officers involved in a roundtable exercise also feared the dashcam was an employee monitoring device.³⁴¹ Officers' expressed fears over intrusive monitoring prompted an IACP response, cautioning that user perception is essential to smooth operations. The IACP warns that, if "officers believe that the system is only being installed for disciplinary purposes, the program will falter and may fail."³⁴² However, the IACP did not complete an empirical study on the impact of dashcams to measure actual enforcement efforts.

The 2004 IACP study resulted in the need for further investigation. Some respondents to the 2004 IACP survey found the cameras to be beneficial, and 33 percent identified that the dashcam gave them an increased feeling of safety.³⁴³ However, 64 percent answering the same question said they were neutral on the dashcams' contribution to safety.³⁴⁴ Three percent of respondents maintained other opinions and

³³⁶ IACP Staff, "In-Car Cameras."

³³⁷ IACP Staff, "In-Car Cameras."

³³⁸ IACP Staff, "In-Car Cameras."

³³⁹ IACP Staff, "In-Car Cameras," 23.

³⁴⁰ IACP Staff, "In-Car Cameras."

³⁴¹ IACP Staff, "In-Car Cameras."

³⁴² IACP Staff, "In-Car Cameras," 28.

³⁴³ IACP Staff, "In-Car Cameras," 13.

³⁴⁴ IACP Staff, "In-Car Cameras," 13.

responded that the dashcam was detrimental to officer safety.³⁴⁵ The IACP recognized the survey limitations surveys and that dashcams potentially affected workplace conditions and followed up with an additional investigation.

The IACP further sought to identify factors of employee satisfaction and productivity effects resulting from dashcam usage through interviews and survey responses. In 2006, the IACP reported that, overall, 15 percent of officers reported an increase while 8 percent of respondents reported a decrease in job satisfaction after dashcam installation.³⁴⁶ On the topic of productivity, 7 percent of officers reported an increase in traffic stops they made while 5 percent reported a decrease in motor vehicle stops.³⁴⁷ If the officers' assessments were accurate, the minimal increases and decreases reported indicate that many of the officers had neutral feelings toward the dashcams. Other survey responses also support claims of officer neutrality toward dashcams. For example, 86 percent of IACP survey respondents said the dashcam had no bearing on their use of discretion, and 89 percent said the dashcam had no bearing on their decision to use force.³⁴⁸

D. POLICY AND PRIVACY ISSUES

At the end of the '90s, police implemented dashcams to promote transparency and accountability. However, limitations in technology and inadequate procedures countered the effectiveness of the units. The 2004 IACP prosecutor survey cited several problems using dashcam videos as evidence. In the report, five of the nine most frequent issues related to operator errors or interference as opposed to equipment problems, as Figure 1 shows.³⁴⁹

³⁴⁵ IACP Staff, "In-Car Cameras," 13.

³⁴⁶ IACP Staff, "In-Car Cameras."

³⁴⁷ IACP Staff, "In-Car Cameras."

³⁴⁸ IACP Staff, "In-Car Cameras."

³⁴⁹ IACP Staff, "In-Car Cameras."

- 1) Limitation of the system's field of view
- 2) Poor quality or lack of audio
- 3) The poor quality of the video image
- 4) Obtaining copies of the videos from law enforcement
- 5) Having inadmissible portions of the audio/visual recording redacted
- 6) Obtaining copies for disclosure to defense
- 7) Video evidence contradicting the officer's testimony
- 8) The lack of available equipment to display the video evidence in court, and
- 9) The chain of custody when handling the video evidence.

Figure 1. 2004 PERF Prosecutors Survey Results³⁵⁰

Such common problems as the failure to turn over evidence, contradictory testimony, video redactions, and issues with the chain of custody are errors beyond the technology. The problems listed by the prosecutors' survey are, instead, attributable to human error. The technology alone could not possibly remedy the situations caused by human errors. In 2004, the IACP recognized the shortcomings of the prosecutor survey. The organization advised agencies that, "prior to installing the first in-car camera, departmental policies and procedures regarding use, storage and handling of the video evidence must be in place."³⁵¹ Without proper policy and procedures in place, improper use or mishandling of evidence may undermine the progress of in-car video programs.

To improve the way dashcam evidence was processed in the United States, the IACP created the Digital Video Systems Advisory Panel for assistance with identified gaps in dashcam implementation and policies.³⁵² The group, consisting of practitioners and manufacturing teams, intended to determine areas in "quality measurement, data

³⁵⁰ Source: IACP Staff, "In-Car Cameras," 2.

³⁵¹ IACP Staff, "In-Car Cameras," 28.

³⁵² IACP Staff, "In-Car Video Camera Systems Performance Specifications."

security, operational measurements, officer safety, interoperability, and testing and certification.”³⁵³ The panel’s goal was to provide end-users minimum performance standards for dashcam systems to ensure “officer safety and quality video for evidence purposes.”³⁵⁴ In 2008, the IACP produced a report based on the panel’s findings; however, the DOJ could do very little beyond providing advice to agencies that were willing to listen. In the United States, federalism prevents Congress from enacting direct laws that govern local law enforcement policies.³⁵⁵ Despite best practice suggestions provided by the federal government, law enforcement agencies continued to come under scrutiny involving issues surrounding dashcam evidence.

Without legislation to regulate procedures, the processing of dashcam evidence remained suspect, as the technology was limited to video cassette tapes and human intervention for storage. In a 2009 article in *Law Enforcement Technology* magazine, Peter Hildebrandt wrote that evidence control problems continued to plague dashcams.³⁵⁶ Hildebrandt cites policies like the one used by the South Carolina State Police as contributing to the problem: in South Carolina, troopers manually activate audio microphones even though dashcams are triggered automatically when overhead lights are engaged.³⁵⁷ Ultimately, the system is circumvented by conducting a motor vehicle stop without overhead lights initiated.³⁵⁸ Hildebrandt’s article proposes that proper training and technology that limits human intervention in evidence collection may alleviate some of the dashcam evidence issues. However, the equipment alone cannot be expected to

³⁵³ IACP Staff, “In-Car Video Camera Systems Performance Specifications,” iii.

³⁵⁴ IACP Staff, “In-Car Video Camera Systems Performance Specifications,” iii.

³⁵⁵ Cornell Law School, “Federalism,” *LII / Legal Information Institute*, November 12, 2007, <https://www.law.cornell.edu/wex/federalism>. “The Constitution limits the powers of the Congress and the powers of the States by placing substantive due process and procedural due process restrictions on both governments, the Constitution gives Congress not the power to regulate states, but only individuals.”

³⁵⁶ Peter Hildebrandt, “Dash-Cams Keep Record,” *Law Enforcement Technology: Fort Atkinson* 36, no. 2 (February 2009): 10,14-19, <http://search.proquest.com/docview/229763131/citation/79A5110190B843F2PQ/4>.

³⁵⁷ Hildebrandt, “Dash-Cams Keep Record.”

³⁵⁸ Hildebrandt, “Dash-Cams Keep Record.”

provide an independent, objective record of a police encounter without eliminating police discretion in camera operations.

Video evidence, regardless of collection source, is locally regulated by agency policies governing equipment use, evidence collection, processing, and release. However, there is currently no mechanism for collecting national statistics on police organizations deploying dashcams policy data. Nonetheless, agencies can implement dashcams without department policies in place. For example, in 2004, PERF reported that some organizations operated without dashcam policies.³⁵⁹ Despite dashcam policy options, collected video evidence is subject to discovery and admissibility standards set by state and federal court rules of evidence.³⁶⁰ However, the Reporters Committee for Freedom of the Press writes that some states lack video evidence laws and that many agencies make up their own rules.³⁶¹

In such states as North Carolina, legislation denies public access to video evidence.³⁶² Even in some places where video evidence is accessible to the public, there are problems with destruction, processing, and release. For example, in 2015, Konkol and Biasco reported that an internal review at the Chicago Police Department found 80 percent of the agency's 850 dashcams did not record audio due to operator error or intentional destruction.³⁶³ According to Chicago Police spokesperson Anthony Gugliemi, an additional 12 percent of dashcams had video issues stemming from the same cause.³⁶⁴ In some cases, equipment failure leads to the unwilling destruction or lack of evidence.

³⁵⁹ IACP Staff, "In-Car Cameras," 3.

³⁶⁰ "General Provisions Governing Discovery," *Code of Federal Regulations*, title 19: II.C.210.27, *LII / Legal Information Institute*, accessed July 2, 2017, <https://www.law.cornell.edu/cfr/text/19/210.27>.

³⁶¹ "Access to Police Body-Worn Camera Video," Reporters Committee for Freedom of the Press, July 10, 2015, <https://www.rcfp.org/bodycams>.

³⁶² Max Blau and Emanuella Grinberg, "This Might Be the Last Police Video You'll See from North Carolina," *CNN*, accessed July 2, 2017, <http://www.cnn.com/2016/09/25/us/charlotte-police-video/index.html>.

³⁶³ Mark Konkol and Paul Biasco, "80 Percent of Chicago Police Dashcams Don't Properly Record Audio," *DNAinfo Chicago*, December 21, 2015, <https://www.dnainfo.com/chicago/20151221/loop/80-percent-of-chicago-police-dashcams-dont-properly-record-audio>.

³⁶⁴ Konkol and Biasco, "80 Percent of Chicago Police Dashcams Don't Properly Record Audio."

However, in a significant number of other cases, evidence problems stem from factors controlled by system administrators and operators.

E. CONCLUSION

Dashcam history has patterns of mixed positive and adverse results. Although dashcam research is limited, contradictions to the effectiveness of the technology exist. Dashcams were implemented to enhance officer safety and help public relations, but both positive and negative effects were reported on the cameras' impact on job satisfaction.³⁶⁵ Research indicated that the dashcam directly affected officer productivity by causing both increases and decreases in enforcement areas.³⁶⁶ The use of cameras in police work created concerns with privacy rights, despite the intention to implement them as a response to public concern regarding discrimination and violence, as well as problems with the processing of video evidence. On a positive note, the public did benefit from dashcam use concerning the viewing of police activities. However, they also suffered as reports indicated that officers issued fewer warnings and increased enforcement activity.³⁶⁷ Of even greater concern, however, is that dashcams did not completely prevent police misconduct. After almost two decades since the onset of recording cameras in police vehicles, acts of police misconduct still occur on dashcam video. The analysis of dashcam data indicates that the camera's ability to prevent misconduct is limited, and other solutions to solve root problems in police/ citizen contacts need exploring.

The issues and concerns arising from dashcam use appear to stem partially from the research, training, and controls associated with the technology. To date, the limited dashcam research has not accurately explained the various results associated with the camera use. The limited depth of the studies also prohibited the transferability of the findings from one agency to the next. In dashcam research, officer opinions and

³⁶⁵ IACP Staff, "In-Car Cameras."

³⁶⁶ IACP Staff, "In-Car Cameras."

³⁶⁷ IACP Staff, "In-Car Cameras."

shortcomings in training were not explored enough to measure their impact on the outcome of camera use. However, at least one survey attributed the lack of training to the cause of operator errors. Still, other problems were associated with the discretionary recording of incidents, causing administrators and manufacturers to seek alternative solutions such as camera automation.

IV. ANALYSIS

The only people who see the whole picture are the ones who step outside of the frame.

—Salman Rushdie³⁶⁸

This chapter analyzes evidence that both supports BWC usage and contradicts the benefits in order to address the main thesis research question. The analysis focuses on how BWCs have affected the ambiguous nature of police decision-making. The inquiry presented here uses a comparison between dashcams and BWCs to establish a historical frame of reference. The investigation looks to identify how discretionary recording, officer training, and the passage of time have influenced the outcome of BWC use. The analysis also weighs the pros and cons of processing dashcam and BWC evidence, seeking to identify the impact of the recording technology on privacy concerns. At the heart of the probe in this chapter is an examination of the social identity internalized by police officers, looking at how it may affect their decisions when BWCs are in use.

A. DASHCAM AND BWC RESEARCH COMPARISON

In dashcam surveys, officers held that camera technology in their vehicles caused them to issue fewer warnings, fearing supervisor scrutiny. Ten years later, opinions remained unchanged. In a 2014 BWC study in Phoenix, Arizona, officers not only held the same views, but the empirical data from the survey indicated increases in summons and arrest activity when BWCs were in use.³⁶⁹ Similarly, in a 2014 report completed for PERF, Miller and Toliver claim “officers embrace body-worn cameras when they see

³⁶⁸ Salman Rushdie, “Quotes About Analysis (93 Quotes),” *Goodreads*, accessed September 20, 2017, <https://www.goodreads.com/quotes/tag/analysis>.

³⁶⁹ Katz, “Deploying Officer Body-Worn Cameras in Phoenix.” |

evidence of the cameras' benefits."³⁷⁰ They noted it was a primary concern for police executives that BWCs may erode trust between officers and the agency. Miller and Toliver further reported that some officers view the BWCs as signals of mistrust and that their administration will use the devices as overbearing monitoring tools.³⁷¹

Analysis of both dashcam and BWC surveys indicate that officer behavior and stated opinions are not necessarily in accord. In recent polls, officers have voiced their views on the acceptance of BWC technology, indicating how the units may affect their methods of policing. One national survey of nearly 8,000 law enforcement personnel suggests opposing views on BWC use.³⁷² In a PEW Research Center report, just over half of those responding said a BWC would cause more appropriate officer behavior, and 44 percent stated BWCs would not change methods of operation.³⁷³ The remaining 5 percent of the interviewees said BWCs "would make officers less likely to act appropriately."³⁷⁴ Studies and research coinciding with the PEW survey indicate that the opinions gathered are not necessarily valid predictors of outcomes, as research on data shows changes in police operations with BWC use. Several studies have reported that police actions, such as arrests and summonses, increase with BWC use.

Dashcam and BWC implementation may affect police productivity because of technologies' impact on employee workplace satisfaction. In 2006, the IACP reported that officers who had greater feelings of satisfaction with dashcams were more likely to report increased productivity.³⁷⁵ The assessment, however, was limited to officer

³⁷⁰ Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

³⁷¹ Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*, 24.

³⁷² Rich Morin, Kim Parker, Renee Stepler, and Rew Mercer, "Behind the Badge," *Pew Research Center's Social & Demographic Trends Project*, January 11, 2017, <http://www.pewsocialtrends.org/2017/01/11/behind-the-badge/>.

³⁷³ Morin, Parker, Stepler, and Mercer, "Behind the Badge."

³⁷⁴ Morin, Parker, Stepler, and Mercer, "Behind the Badge," 6.

³⁷⁵ IACP Staff, "In-Car Cameras," 16.

reporting and included no actual vehicle stop data. Unlike the fixed dashcam, the BWC travels with the officer, allowing for the evaluation of other productivity markers. In the 2014 Phoenix study, officers with BWCs increased arrest activity by 42.6 percent, three times more than their comparison group.³⁷⁶ Katz et al., the researchers from Phoenix, also found officers believed that BWCs removed some of their discretionary power, resulting in the issuance of fewer warnings.³⁷⁷ However, the Phoenix study did not conclude whether the use of the BWCs or the officers' preconceived notions to warn less catalyzed increased productivity. Obviously, the police officers' beliefs and reactions to dashcams or BWCs did not occur in a vacuum. It is entirely conceivable that a police officer's assumptions about dashcams and BWCs influenced their actions.

Dashcam and BWC studies all had limitations that could have affected their results. Also, each of the research investigations noted problems with officer discretion in the recording. In several studies, test subjects failed to compile complete data and selectively recorded calls for service. Ariel et al. noted in one review that discretionary recording was an essential element of the deterrence of officer misconduct.³⁷⁸ Ultimately, the research conducted in this field varies in results and has not shown to be reliable to the point of transferability among agencies. Almost every study concludes with the author stating that further research is needed. This thesis created in 2017 is one of the first to look at the whole picture, the lack of agreeable data so far shows that the long-term and ancillary effects of BWC use are unknown.

B. EVOLUTION OF TRAINING FOR CAMERA USE IN POLICING

In a police officer's career, a significant amount of time is dedicated to the process of ongoing training. The police profession is unique in that on the job training is of equal if not greater importance than a formal education. While some police training is

³⁷⁶ Katz, "Deploying Officer Body-Worn Cameras in Phoenix."

³⁷⁷ Katz, "Deploying Officer Body-Worn Cameras in Phoenix."

³⁷⁸ Ariel et al., "The Deterrence Spectrum."

proactive, a great deal is reactionary, based upon trial and error. The use of dashcams and BWCs are no exception to the ongoing learning process. The use of camera equipment alters police officer behavior and creates subconscious levels of stress. Like other conditions in policing, such as pursuit driving, firearms, and defensive tactics, officers require conditioning to lower stress levels and perform rationally.

The early 2000s showed that training was still lacking. In 2000, the U.S. Commission on Civil Rights published a report acknowledging that, despite national reductions in crime, there were still incidents of officers committing crimes and engaging in racial profiling.³⁷⁹ The commission attributed part of the problem to police training, stating “police officers are essentially trained by the same law enforcement methods that fail to adequately address cultural diversity and civil rights.”³⁸⁰ In 2002, as part of the dashcam probe for COPS, the IACP included questions on officer training.³⁸¹ A portion of the IACP survey attempted to uncover the impact of dashcams on racial profiling and officer safety by asking officers about their feelings on the equipment and the amount of training they had received.³⁸² The IACP study published in 2004 determined that, of the 47 agencies using dashcams under federal grants, only 25 had formalized training for the end-users.³⁸³ The IACP also found that training was lacking in another set of 22 agencies it had probed: 14 had no training in place, and eight reported that training programs were still under development.³⁸⁴

The IACP investigation revealed lack of training, supported by statements made by individual officers about their dashcam training. In response to the survey, 72 percent reported training on the equipment; however, 28 percent stated they were untrained.³⁸⁵

³⁷⁹ U.S. Commission on Civil Rights, *Revisiting Who Is Guarding the Guardians? A Report on Police Practices and Civil Rights in America* (Washington, DC: 2000), <http://www.usccr.gov/pubs/guard/main.htm>.

³⁸⁰ U.S. Commission on Civil Rights, *Revisiting Who Is Guarding the Guardians?*

³⁸¹ IACP Staff, “In-Car Cameras.”

³⁸² IACP Staff, “In-Car Cameras.”

³⁸³ IACP Staff, “In-Car Cameras.”

³⁸⁴ IACP Staff, “In-Car Cameras.”

³⁸⁵ IACP Staff, “In-Car Cameras.”

The same study found that 69 percent received between one and eight hours of training.³⁸⁶ However, 37 percent said the training was inadequate, failing to cover relevant camera laws and regulations.³⁸⁷ Also, most of the respondents to the survey stated that they did not receive a dashcam manual or follow-up training for secondary recipients of the cameras.³⁸⁸ The IACP recognized that a significant amount of camera equipment was issued with little end-user knowledge as to how to fix the slightest of technical malfunctions.

In various reports, the IACP has suggested that police training was inadequate. However, the organization has not provided guidance as to the appropriate amount of training or topics to include in dashcam programs. At best, the IACP reports touched on the subject, indicating that all department personnel requires training in evidence procedures, laws, and dashcam policy. At the culmination of the IACP 2004 dashcam report, the organization did provide best practices and a model policy section. The recommendation sections address support for video equipment procurement, chain of evidence problems, and preventing the destruction of equipment.³⁸⁹ However, the IACP's best practices and model policy did not outline a training curriculum for dashcams. The IACP also did not suggest an educational model integrating the issues driving camera implementation and actual dashcam training.

Reviews of dashcam surveys continued to indicate a significant lack of initial and supplemental training on the technology.³⁹⁰ Similarly, in 2010, the NIJ recognized that BWC use in law enforcement had problems with technical specifications and operational standards.³⁹¹ In turn, the NIJ funded a grant for the production of a BWC implementation

³⁸⁶ IACP Staff, "In-Car Cameras."

³⁸⁷ IACP Staff, "In-Car Cameras."

³⁸⁸ IACP Staff, "In-Car Cameras."

³⁸⁹ IACP Staff, "In-Car Cameras."

³⁹⁰ IACP Staff, "In-Car Cameras."

³⁹¹ Hayes and Ericson, "A Primer on Body Cameras for Law Enforcement," 9.

guide. In 2010, Hayes and Ericson, the grant recipients, utilized the IACP 2004 dashcam study as a source of relevant material when preparing the technology primer for the NIJ.³⁹² Hayes and Ericson based the training guidance on information taken directly from the 2004 IACP dashcam survey, converting the material into recommendations for BWC use.³⁹³ However, there are indications that the lessons learned from dashcams are not transitioning to recognizing the inherent need for training on BWCs.

There are many situations where a review of problems associated with dashcams could be beneficial to BWC programs. For example, in 2002, an IACP training session discovered that officers using dashcams were unable to fix minor problems and operate the equipment properly.³⁹⁴ Using the information to eliminate such issues in BWC use may prevent the unnecessary loss of evidence and, in turn, reduce public suspicion. Analysis of the past problems may also help to avoid significant flaws, such as the failure to train officers on laws and agency policies. A training deficit in the areas of proper procedures and legality can have substantial repercussions resulting from the inability to provide adequate guidance.

In 2014, COPS, along with PERF, published a BWC program implementation manual that highlights explicit training needs. The 2014 PERF report synthesized the responses from BWC surveys along with agency executive interviews at a 2013 conference.³⁹⁵ The report culminated in a series of recommendations that included training, as detailed in Figure 2.³⁹⁶

³⁹² Hayes and Ericson, “A Primer on Body Cameras for Law Enforcement,” 9.

³⁹³ Hayes and Ericson, “A Primer on Body Cameras for Law Enforcement,” 9.

³⁹⁴ IACP Staff, “In-Car Cameras.”

³⁹⁵ Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

³⁹⁶ Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

27. Before agency personnel are equipped with body-worn cameras, they must receive all mandated training.

28. Body-worn camera training should include the following:

- All practices and protocols covered by the agency's body-worn camera policy (which should be distributed to all personnel during training)
- An overview of relevant state laws governing consent, evidence, privacy, and public disclosure
- Procedures for operating the equipment safely and effectively
- Scenario-based exercises that replicate situations that officers might encounter in the field
- Procedures for downloading and tagging recorded data
- Procedures for accessing and reviewing recorded data (only for personnel authorized to access the data)
- Procedures for preparing and presenting digital evidence for court
- Procedures for documenting and reporting any malfunctioning device or supporting system

29. A body-worn camera training manual should be created in both digital and hard-copy form and should be readily available at all times to agency personnel.

- The training manual should be posted on the agency's intranet.

Figure 2. PERF's BWC Training Recommendations³⁹⁷

Unlike the vague training instructions that the IACP provided in the 2004 dashcam report, PERF's BWC training recommendations are direct and explicit.

The training support provided by Miller and Toliver addresses the relevant issues stemming from BWC surveys and the historical perspective of dashcams. PERF's proposed curriculum covers the policy and legal parameters as well as the operational aspects of BWCs.³⁹⁸ Miller and Toliver were careful to include a section on malfunctioning devices and instructions for equipment manual access.³⁹⁹ Additionally, a

³⁹⁷ Source: Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

³⁹⁸ Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

³⁹⁹ Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

progressive suggestion by PERF incorporates scenario-based training for BWC use.⁴⁰⁰ Scenario training allows agencies to evaluate operations and tailor instructions to facilitate expected outcomes.⁴⁰¹ In scenario-based training for BWCs, organizations have the opportunity to customize their programs to fulfill the goals of officer safety, accountability, and agency transparency. However, problems may arise because scenario training can differ significantly from actual operations.

Despite some limitations in scenario training, the method allows police officers to make judgments and determine the applicability of laws in part using case law. According to Larry E. Holtz, when building a case, officers use initial stimuli, and “rational inferences drawn from such stimuli then mix with the officer’s experience, training, and education to build a reasonable basis for the activity which will follow.”⁴⁰² In light of Holtz’s statement, police officers are trained to fill in the absence of information and base decisions on how close a situation resembles a past event. However, problems with camera use may be compounded when the stimuli are focused on the ancillary or negative aspects or BWC use rather than the situation at hand.

Police officers view and analyze BWC video as training and to help create best practices, which also creates a potential for heuristic error. In literature put out by the DOJ, the key elements described for experience-based decision-making are similar to the concepts suggested by other authors for using the BWC as a training tool.⁴⁰³ The DOJ literature indicates that BWC video review can provide immediate feedback and analysis of videos can help create best practices.⁴⁰⁴ In a report for the DOJ, White assessed that BWCs could be utilized as a training tool to serve as a “mechanism for positive feedback, can identify problems in officer behavior, [and] can help identify best practices in

⁴⁰⁰ Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

⁴⁰¹ Kenneth R. Murray, *Training at the Speed of Life*, vol. 1 (Gotha, FL: Armiger, 2004).

⁴⁰² Holtz, Larry E., *New Jersey Law Enforcement Handbook*, 2015 Edition, vol. 1, 3 vols. (Charlottesville, VA: Lexis Nexis, 2015,) 6.

⁴⁰³ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*.

⁴⁰⁴ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*.

handling critical incidents.”⁴⁰⁵ Essentially, White says that the BWC video can be a tool to analyze experience for future positive outcomes. On the same subject, March writes “many of the capabilities of individuals are connected to their abilities to profit from the experiences, knowledge, and practices of others.”⁴⁰⁶ BWCs can contribute to officer memories and, arguably, to the development of information by creating video and audio recordings.

In certain situations, BWC training and usage can develop the effects of the availability heuristic. Since the inception of the BWC, the sharing of videos has been encouraged as a valuable training tool.⁴⁰⁷ Open-source officer videos are used for training purposes and shared via Internet sites such as Policeone.com and BLUtube.com.⁴⁰⁸ Hundreds of videos posted on the PoliceOne BLUtube training site demonstrate examples of BWC recordings in use as training material.⁴⁰⁹ On the two law enforcement–centered sites, BWC videos are available, featuring situations ranging from the routine call to controversial incidents including officer-involved shootings.

The posted videos offer an excellent medium for the exchange of experience and creation of potential memories. There must be an understanding, however, that the memories can also lead to decision errors. If experience creates prior knowledge and sets the starting point for expected observations and assessments, a person’s cognitive bias can cause a form of closed-minded thinking where they view options and possibilities as limited. Considering that the review process is meant to add to knowledge and experience, the process can also potentially work against the officer by limiting perceived options to decisions already made and potentially flawed.

People rely on experience as a guide for future decision making in order to avoid previous poor decisions in favor of better future choices. Research on decision regret has found that people want to avoid repeating past mistakes and regret the decisions they

⁴⁰⁵ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*, 6.

⁴⁰⁶ March and Heath, *A Primer on Decision Making How Decisions Happen*, 245.

⁴⁰⁷ White, *Police Officer Body-Worn Cameras: Assessing the Evidence*, 7 .

⁴⁰⁸ “Police Video | BLUtube,” accessed May 19, 2017, <https://blutube.policeone.com/>.

⁴⁰⁹ “Police Video | BLUtube,” accessed May 23, 2017, <https://blutube.policeone.com/>.

made if they do not turn out as expected.⁴¹⁰ People also tend to repeat actions that have resulted in positive past performance. Experience gained both individually and collectively has been a cornerstone of BWC research and literature since the technology push began in the United States. In 2013, the Police Executive Research Forum (PERF) surveyed over 500 police agencies and held a special conference specifically to gather insights, experiences, and lessons learned about the use of BWCs.⁴¹¹ Professional conferences and surveys, such as the one completed by PERF, are designed to provide guidance toward avoiding past mistakes and repeating positive actions.

C. RECORDING EVIDENCE AND PRIVACY CONCERNS

Dashcam and BWC reports completed for the DOJ adequately documented problems with evidence protection and privacy issues. Despite best practice suggestions provided by the federal government, law enforcement agencies continued to come under scrutiny involving problems surrounding dashcam evidence. As BWCs came online, problems with officers controlling the collection, processing, and surrender of evidence continued, despite the levels of security in BWC technology. However, the modernization of recording equipment did not change the public's distrust in the police's ability to secure evidence. BWC technology advancements limited human intervention in video processing and reduced the fear of police tampering, but officer discretion in when and where to record remained a problem.⁴¹² Beyond evidence tampering and discretionary issues, BWCs generated new areas of evidence concerns.

BWC mobility expanded the areas of interest from dashcam evidence adulteration to the invasion of privacy. BWCs gather evidence in areas with a high expectation of privacy, capturing citizens at some of the most stressful, and most private, times in their

⁴¹⁰ Adi Sagi and Nehemia Friedland, "The Cost of Richness: The Effect of the Size and Diversity of Decision Sets on Post-Decision Regret," *Journal of Personality and Social Psychology: Attitudes and Social Cognition* 93, no. 4 (October 2007): 515–24, <http://dx.doi.org/10.1037/0022-3514.93.4.515>.

⁴¹¹ Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

⁴¹² Alex Sutherland, "Body Cameras: Can Police Have Too Much Discretion?" RAND, accessed July 27, 2017, <https://www.rand.org/blog/2017/03/body-worn-cameras-can-police-have-too-much-discretion.html>.

lives.⁴¹³ In the 2013 ACLU statement endorsing BWCs, the organization explicitly addressed both the new privacy concerns and the issue of evidence preservation. Stanley called for policies and technology to ensure the respect for privacy while raising concerns regarding police ability to alter video evidence.⁴¹⁴ Still, the ACLU maintains that a BWC policy should provide the police latitude to consider the privacy of victims or witnesses and, at times, not record.⁴¹⁵ In a similar opinion, Lindsay and Toliver write that, based on feedback from a culmination of PERF research, officer discretion in BWC operation is a necessity.⁴¹⁶ The authors further write that police discretion is required to ensure citizen cooperation and feelings of trust in certain situations—such as in cases of abuse and rape.⁴¹⁷

In 2017, evidence collected from either the BWC or dashcams has become synonymous. Agency policy and local laws regulate video evidence collection, processing, and release. However, it is unknown if all police agencies in the United States are operating with dashcam and BWC policies in place. Agencies may operate camera programs without internal policies and solely rely on court rules for guidance. In 2004, PERF reported that some organizations operated without dashcam policies.⁴¹⁸ In 2013, Miller and Toliver reported that, out of 63 organizations surveyed, “nearly one-third did not have a written policy governing” usage.⁴¹⁹ In 2014, *USA Today* reported that, in a survey of 254 police agencies, nearly one-third were deploying BWCs without a written policy in place.⁴²⁰ As of August 2016, Upturn, a company compiling information for the

⁴¹³ Henderson, “Body Cameras: Can Technology Increase Protection For Law Enforcement Officers and The Public?”

⁴¹⁴ Stanley, “Police Body-Mounted Cameras. “

⁴¹⁵ Stanley, “Police Body-Mounted Cameras. “

⁴¹⁶ Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

⁴¹⁷ Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

⁴¹⁸ IACP Staff, “In-Car Cameras.”

⁴¹⁹ Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*, 2.

⁴²⁰ Johnson, “Police Body Cameras Offer Benefits, Require Training.”

Leadership Conference, reports that 24 of 46 police agencies investigated did make their camera policies publically available.⁴²¹

Despite dashcam and BWC policy options, collected video evidence is subject to discovery and admissibility standards set by state and federal court rules of evidence.⁴²² However, the Reporters Committee for Freedom of the Press writes that some states lack video evidence laws and that many agencies make up their own rules.⁴²³ In other states, such as North Carolina, laws deny public access to video evidence.⁴²⁴ Still, in some places where video evidence is accessible to the public, there are problems with destruction, processing, and release. For example, in 2015, Konkol and Biasco reported that an internal review at the Chicago Police Department found 80 percent of the agency's 850 dashcams did not record audio due to either operator error or intentional destruction.⁴²⁵ According to Chicago Police spokesperson Anthony Gugliemi, an additional 12 percent of dashcams had video issues stemming from the same cause.⁴²⁶ In some cases, equipment failure leads to the destruction or lack of evidence. However, in a significant number of other cases, evidence problems stem from factors controlled by system administrators and operators.

To some extent, the lack of laws, policies, and improved practices seems to be the primary condition blocking dashcams and BWCs' ability to provide transparency and accountability. Reports of conditions like those in Chicago or North Carolina indicate a lack of national governance is leading to decisions inclined toward self-preservation rather than the greater good. In an article published in *Project Management Journal*, Muller et al. explain how individuals often make decisions in their favor when there is a lack of organizational governance. In the 2013 business study, Muller et al. attempted to

⁴²¹ The Leadership Conference on Civil and Human Rights & Upturn, "Police Body Worn Cameras: A Policy Scorecard," August 2016, <https://www.bwccscorecard.org/>.

⁴²² "General Provisions Governing Discovery," *Code of Federal Regulations*, title 19: II.C.210.27.

⁴²³ "Access to Police Body-Worn Camera Video."

⁴²⁴ Blau and Grinberg CNN, "This Might Be the Last Police Video You'll See from North Carolina."

⁴²⁵ Konkol and Biasco, "80 Percent of Chicago Police Dashcams Don't Properly Record Audio."

⁴²⁶ Konkol and Biasco, "80 Percent of Chicago Police Dashcams Don't Properly Record Audio."

identify the causes of international corporate scandals by reviewing various cases and the type of organizational controls in place.⁴²⁷ According to the authors, ethical dilemmas arise when there is a lack of direction and governance structure, indicating that, without proper guidance and order, decisions may be unfairly balanced.⁴²⁸ In some cases, the findings of Muller et al. apply to the use of recording equipment in policing. Policy design and administrators may have an impact on the success or failure of camera programs, but repeating problematic conditions with dashcam and BWC use more indicate flaws inherent in systemic police procedures.

D. THE INFLUENCE OF TIME

The amount of time that BWCs are in service may be another factor that affects officer behavior. The significant onset of BWC use within the United States began in late 2014. Studies conducted in the years 2012 – 2014 yielded positive results, indicating that BWCs may cause decreases in complaints against police. However, studies between the years 2015- 2016 began to show contrary results with the steady or increased use of force incidents. Research from the early implementation of dashcams also revealed that officer feelings toward the technology were significantly stronger at the onset.⁴²⁹ However, even when the use of dashcams became routine, incidents of misconduct continue to be captured by the vehicle-mounted devices. Like other technology, the use of BWCs and dashcams may have desired effects at first; after officers become accustomed to the technology use, though, their behavior may revert.⁴³⁰ The amount of time that BWCs are in use may partially account for the difference in investigation results reported by various researchers.

⁴²⁷ Ralph Muller, Erling S. Andersen, Oyvind Kvalnes, Jingting Shao, Shankar Sankaran, and Rodney J. Turner, “Ethical Decisions Project Governance,” accessed July 2, 2017, <https://www.pmi.org/learning/library/ethical-decisions-project-governance-2253>.

⁴²⁸ Muller et al., “Ethical Decisions Project Governance.”

⁴²⁹ IACP Staff, “In-Car Cameras.”

⁴³⁰ Roy Coleman and Michael McCahill, *Surveillance and Crime*, vol. 26 (Thousand Oaks, CA: Sage Publications Inc., 2011).

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V. RECOMMENDATIONS AND CONCLUSION

I don't have a particular recommendation other than that we base decisions on as much hard data as possible. We need to carefully look at all the options and all their ramifications in making our decisions.

—Dorothy E. Denning⁴³¹

Thorough analysis of the limited BWC research between the years 2012 and 2017 shows that camera use can have a different and changing impact on police behavior. Initial studies showed beneficial changes reducing the use of force and citizen complaints while later studies displayed the contrary. The studies commonly asserted the significance of their conclusions; however, the researchers encouraged agencies to conduct independent research before initiating BWC programs. Researchers also reported significant flaws among organizations that allowed discretionary recording and suggested proper training could alleviate many of the problems arising from BWC use. Also, some researchers indicated that automation might minimize human errors as human factors can unpredictably alter the dynamics of BWC use. Based on the analytical results, the question for police administrators becomes twofold. First, how can the positive aspects of BWC use be isolated? Second, how is positive police behavior with BWCs sustainable over prolonged periods? The findings and recurring themes from the BWC research featured in this thesis form the basis for the following recommendations, which may help other BWC programs isolate and sustain positive police behavior.

A. RECOMMENDATIONS

Recommendations are only valuable when based on the objective analysis of hard data and valid research. This research identifies themes based on an investigation of BWC research, the history of dashcams, a comparison between the technologies, and

⁴³¹ “Dorothy Denning Quotes,” *BrainyQuote.com*, *Xplore Inc*, 2017, https://www.brainyquote.com/quotes/quotes/d/dorothyden217513.html?src=t_recommendation.

influencers to decision-making. The analysis suggests that the improvement of BWC use in policing requires independent research, training, policy adjustment, and the utilization of advancements in technology. The following suggestions directly address impediments that currently hinder the BWCs ability to increase police legitimacy and transparency.

1. Conduct Individualized BWC Research Specific to Organizations

Agencies implementing BWC programs should carry out investigations before procurement and use. Michael White has recommended independent testing in an initial BWC assessment for the DOJ as does Barak Ariel throughout his extended research. Studies suggest that the use of BWCs can backfire in that they may increase the use of force, assaults against officers, and citizen complaints. Implementation of BWCs based on research from other departments is, therefore, irresponsible. BWC data from existing studies are not transferable from one agency to the next; it was also not the intention of the investigators that their results be transferable. Policies, methods of operation, and the results from adopting camera programs are all subject to independent variables, which are unique to individual agencies. At no point did the studies' researchers disseminate their results to other locales—let alone extrapolate national policy from local research. At the conclusion of the discussion for each of the experiments discussed in this thesis, the author noted the limitations of their studies and suggested the necessity of further research to mitigate those limitations.

The measurement of the impact of BWCs within an agency is best measured by citizen and officer surveys accompanying the comparison of data. In their 2015 article, Paul Drover and Barak Ariel provide guidance for overcoming the challenges of implementing a BWC trial. Drover and Ariel suggest that police leaders undertake evidence-based testing, managing operations, and implementing change.⁴³² The failure to tailor BWC programs to an organization's individual needs may result in limited short-term success.

⁴³² Paul Drover and Barak Ariel, "Leading an Experiment in Police Body-Worn Video Cameras," *International Criminal Justice Review* 25, no. 1 (2015), 80–97, <https://doi.org/10.1177/1057567715574374>.

2. Provide All Members of an Organization Advanced BWC Training

Training must go beyond the standard practice of covering BWC operations, policies, and legal subjects. Reports that summarize factors surrounding both BWCs and dashcams indicate significant shortcomings in camera training programs. BWC training should include areas that allow for a change in officer behavior, such as education about the psychological aspects of BWC use. Miller and Toliver suggest that law enforcement incorporate scenario-based training for BWC use.⁴³³ Scenario training allows agencies to evaluate operations and tailor instructions to facilitate expected outcomes.⁴³⁴ The scenario process allows organizations the opportunity to customize programs to fulfill the goals of officer safety, accountability, and agency transparency. Training programs should also incorporate feedback from officer and citizen surveys, mitigating problems before they create lasting damage.

The end goal of BWC training programs should be eliminating the initial catalyst for camera use in policing. Camera training programs have traditionally focused on the equipment use, policies, and evidence protocols. However, optimal BWC use requires training to address the causes of police-public conflict. In 2014, the Center for American Progress published an article containing four ideas to reform the criminal justice process and improve police-community relations.⁴³⁵ In addition to enhancing data collection and increasing police supervision, the Center's staff recommended implicit bias training to help officers understand their unconscious views of various demographics of society.⁴³⁶ Similarly, in 2015, the President's Task Force on 21st Century Policing published an implementation guide recommending policing reforms.⁴³⁷ The Task Force

⁴³³ Miller and Toliver, *Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned*.

⁴³⁴ Murray, *Training at the Speed of Life*.

⁴³⁵ Michele Jawando and Chelsea Parsons, "4 Ideas That Could Begin to Reform the Criminal Justice System and Improve Police-Community Relations," Center for American Progress, December 18, 2014, <https://www.americanprogress.org/issues/courts/reports/2014/12/18/103578/4-ideas-that-could-begin-to-reform-the-criminal-justice-system-and-improve-police-community-relations/>.

⁴³⁶ Jawando and Parsons, "4 Ideas."

⁴³⁷ Department of Justice, "President's Task Force on 21st Century Policing Implementation Guide," (Washington, DC: United States Department of Justice, Office of Community Oriented Policing Services, 2015), <https://www.hsdl.org/?abstract&did=790014>.

recommended updating training, policy, and data collection, along with community engagement.⁴³⁸ Contemporary research such as these may not provide absolute solutions either, and agencies may need to recognize the natural lack of complete answers. Consideration must also go to guidance on reforms with insight into policing problems, as they are understood by the public and civilian leadership.

Before BWC deployment, agency personnel should understand psychological factors associated with the manifestation of a social identity, as well as an understanding of heuristics. Personnel require an understanding of their personal biases and how the BWC subconsciously affects the way they make decisions. Some research has shown that warning participants about the pitfalls of anchoring effects can sufficiently change self-generated anchors.⁴³⁹ Training programs should also ensure that officers realize the potential for BWCs to change behaviors, especially how reductions occur in de-escalation techniques. Officers should receive information about previous and ongoing BWC research. Moreover, training programs should incorporate all agency personnel to help alleviate the pressures of overbearing supervision and foster mutual understanding between supervisory personnel and their subordinates.

a. Training on BWC Use and Police Decision-making

People inherently want to make safe decisions, and, in law enforcement, serious consequences can result from making bad decisions. To avoid risk and repeat success, Marsh contends that “past actions tend to be repeated leading to observations that are concentrated in the same or similar situations.”⁴⁴⁰ Making decisions that are based on experience and previous positive outcomes can help reduce the risk associated with decision-making.⁴⁴¹ Decisions that rely upon experience also help fill the gaps created by

⁴³⁸ Department of Justice, “President’s Task Force on 21st Century Policing Implementation Guide.”

⁴³⁹ Nicholas Epley and Thomas Gilovich, “The Anchoring-and-Adjustment Heuristic: Why the Adjustments are Insufficient,” *Psychological Science* 17, no. 4 (2006), http://www.psychologicalscience.org/pdf/onlyhuman/anchor_adjustment.pdf?q=perspective-taking-as-egocentric-anchoring-and-adj.

⁴⁴⁰ March and Heath, *A Primer on Decision Making: How Decisions Happen*, 243.

⁴⁴¹ “Risk Management...the What, Why, and How,” Business Improvement Architects, accessed May 21, 2017, <https://bia.ca/risk-management-the-what-why-and-how/>.

the decision-makers' limited cognitive capabilities and lack of complete information.⁴⁴² The use of experience in decision-making is also not limited to personal events; research evidence shows that individuals can make personal judgments based on the experiences or expectations of other persons, too.⁴⁴³ Experience available in short-term memory can be useful for the efficiency of decision-making, but it can also create a series of cognitive biases that can lead to decision errors.

Decision errors can occur because people give readily available memories a greater value than old memories. According to Beach, this will cause decision-makers to judge familiar events as more likely to occur than unfamiliar events.⁴⁴⁴ For example, a person reading a news article on motor vehicle theft will be more likely to believe a vehicle theft will happen, rather than another type of crime. There is also no need for the available information to be factual or first hand; easily available information that is imagined is also given preference for a greater probability.⁴⁴⁵ Tversky and Kahneman conclude that this error of the availability heuristic can lead to an "illusory correlation," whereby information combines to form an answer, despite contradictory evidence.⁴⁴⁶ Similar to the representativeness heuristic, contradictory evidence is ignored, and greater weight is given to the available information. Because the weighting of information in memory can have both positive and negative effects, understanding limitations of the process can assist in understanding the cause of various influences on decision-making.

Police trainers are aware of the effects imparted from recent and repetitive memories and often tailor their programs to take advantage of the way people process information into forming decisions and habits. Dr. Matthew J. Sharps, a police research

⁴⁴² March and Heath, *A Primer on Decision Making: How Decisions Happen*.

⁴⁴³ James H. Kuklinski and Buddy Peyton, "Belief Systems and Political Decision Making," *The Oxford Handbook of Political Behavior*, (September 2009,) <http://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780199270125.001.0001/oxfordhb-9780199270125-e-003>.

⁴⁴⁴ Beach, *The Psychology of Decision Making People in Organizations*, 92.

⁴⁴⁵ Beach, *The Psychology of Decision Making People in Organizations*, 92.

⁴⁴⁶ Tversky and Kahneman, "Judgment under Uncertainty: Heuristics and Biases," 1128.

consultant who specializes in cognitive psychology in law enforcement, says that memory can be separated into three dimensions long-term, short-term, and working.⁴⁴⁷ Sharps believes that the memory dimensions overlap and that the working and short-term dimensions have limited duration and capacity. In the book, *Processing under Pressure*, Sharps concluded that, when information is available in long-term memory, unless it is immediately present and available in short-term memory, it is often not present in the context of the decision. Sharps recommends that “to facilitate the best decisions,” information needs to be loaded into short-term or working memory even if the information is already known to the person.⁴⁴⁸ Sharps further suggests that memory loading can be facilitated by reading material, the posting of notes, or the watching of videos.⁴⁴⁹ Sharps did not specifically discuss BWC videos; however, BWC videos are used for police training as previously mentioned.

In addition to the legitimate training sites, police videos generated from vehicle and BWCs have become prevalent and easily publicly accessible. An Internet query using a conventional search engine, entering the keywords “police,” “Body-camera,” and “video” results in seven million searchable web addresses and 680,000 news articles.⁴⁵⁰ A search on Youtube.com for the keywords “top” “police” “body” “camera” “videos” yields over one million results with eighteen out of the top twenty featuring officer-involved shootings.⁴⁵¹ Several of the posted videos have had millions of views with one particular officer BWC shooting receiving over five million views.⁴⁵² The broad public exposure to readily available BWC videos may create memories that influence decisions made by the subconscious application of the availability heuristic. The consistent

⁴⁴⁷ Sharps, Mathew J., *Processing Under Pressure* (Flushing, NY: Looseleaf Law, 2010).

⁴⁴⁸ Sharps, *Processing Under Pressure*, 149.

⁴⁴⁹ Sharps, *Processing Under Pressure*, 149.

⁴⁵⁰ “Police Body Camera Videos,” Google Search, accessed May 9, 2017, <https://www.google.com/search?q=police+incidents+captured+on+body+camera&aq=chrome..69i57.10767j0j8&sourceid=chrome&ie=UTF-8#q=police+body+camera+videos>.

⁴⁵¹ “Top Police Body Camera Videos,” YouTube Search, accessed May 19, 2017, <https://www.youtube.com/>.

⁴⁵² “Police Release Videos of Fatal Shooting,” YouTube Search, accessed May 19, 2017, <https://www.youtube.com/>.

exposure to BWC videos in training and through media outlets facilitate short-term memory loading.

Available memories speed cognitive processing and provide pathways for the linking of similar situations. Memories that have relevance to a given problem to be addressed can also be the starting point in the decision-making process.⁴⁵³ The starting point for decisions can start at the conception of the problem or may begin with a partial gauge of the problem.⁴⁵⁴ Tversky and Kahneman call this initial starting point “anchoring” and the subsequent modifications to the decision “adjustment.”⁴⁵⁵ Beach describes the adjustment part of the heuristic as assessments, which are adjusted up or down according to the circumstances surrounding the situation.⁴⁵⁶ Tversky and Kahneman’s research on the subject found that the adjustments made from formed biases are usually insufficient, too high or too low, and they contributed decision-maker subjectivity as the cause of the adjustment errors.⁴⁵⁷ Additional studies building on the work Tversky and Kahneman attempted to find the origins of the insufficient adjustments by adding variables to the study design.

Further research also suggests stress effects decision-making, particularly applicable as many police decisions are made during times of high stress. In a 2006 research study by Epley and Gilovich, the researchers found that their subjects’ adjustments were inadequate because the adjusting ended when the decision-maker reached a plausible solution.⁴⁵⁸ Their study also concluded with a correlation between stress and the amount of adjusting people made from original anchor points. On one hand, they found that, in stressful situations, people change less from their original anchor point; on the other hand, individuals who were motivated to complete a task and

⁴⁵³ Tversky and Kahneman, “Judgment under Uncertainty: Heuristics and Biases.”

⁴⁵⁴ Tversky and Kahneman, “Judgment under Uncertainty: Heuristics and Biases.”

⁴⁵⁵ Tversky and Kahneman, “Judgment under Uncertainty: Heuristics and Biases,” 1128.

⁴⁵⁶ Beach, Lee R., *The Psychology of Decision Making People in Organizations*, 92.

⁴⁵⁷ Tversky and Kahneman, “Judgment under Uncertainty: Heuristics and Biases.” 1130.

⁴⁵⁸ Epley and Gilovich, “The Anchoring-and-Adjustment Heuristic,” 311.

were not under stress made greater adjustments from their anchor points.⁴⁵⁹ Epley and Gilovich's results support Sharps's training recommendations that information needs to be loaded into long-term memory to be used. Their results also support the reasoning that stress caused by BWC use can increase the bias effect on decision-making.

In addition to the possible stress caused by video recording and the potential for memory availability caused by video review, the BWC unit alone may be the basis for a heuristic anchor point. A national study conducted in 2016 shows that some police officers might have a preconceived notion of public behavior because of BWC usage.⁴⁶⁰ The PEW Research Center survey reported that, when officers were asked about the use of BWCs and citizen behavior, 33 percent said the public is more likely to cooperate while 10 percent stated that they were less likely to cooperate.⁴⁶¹ Still, 56 percent of officers surveyed said that BWC activity would not make a difference in public behavior.⁴⁶² Despite the opinion of the majority of the study respondents, the results indicate that 43 percent of the surveyed officers may have an anchor point to start their assessments on citizen behavior before actual personal contact.

b. SIAM and the Police Officer

The application of the cultural identity markers do not provide rigid, exact answers but, instead, a framework in which to analyze events and relationships.⁴⁶³ Several minor traits associated with the police occupation can be viewed as contributors to group cohesiveness, such as standard uniforms and methods of operation. However, the relationship between the officer and the profession of law enforcement most strongly indicates group influence on individual decision-making. A police career is more than employment; it is a form of social interaction that stretches beyond the organization of employment. As members of a group, police officers develop a sense of belonging that

⁴⁵⁹ Epley and Gilovich, "The Anchoring-and-Adjustment Heuristic," 316.

⁴⁶⁰ Morin et al., "Behind the Badge."

⁴⁶¹ Morin et al., "Behind the Badge."

⁴⁶² Morin et al., "Behind the Badge."

⁴⁶³ Brannan, Darken, and Strindberg, *A Practitioner's Way Forward*.

fulfills their set of prescribed values and emotional needs.⁴⁶⁴ Horwitz and Rabbie describe a person who has developed their socially constructed identity from group membership as having an affinity for their group (in-group) and a tendency to depersonalize people outside of the group (out-group).⁴⁶⁵

The dominant sources that cause a person to create their social identity and in-group affinity stem from the cognitive, emotional, and evaluative perceptions that people experience as part of a group.⁴⁶⁶ For example, there is a feeling of symbiotic benefit between individual members and a police organization. Analyzing the individual/organization exchange as a patron/ client relationship identifies the organization as the patron and the individual group members as the clients. As the patron, the organization fills the needs of the clients by providing cohesiveness, security, and an element of a social identity. The organization, in turn, functions through the labor of the clients. The feeling of safety provided by the organization and other individual members fulfills a significant primary need for the police officer. Through the patron/ client exchange cycle, the police officer develops an in-group affinity.

Police experience in-group affinity and the naturally resulting out-group bias. The development of an in-group affinity creates a bias against individuals, groups, or formal organizations that are perceived as part of the out-group. Identification with group membership is both individual and collective, contributing to a belief system that can lend itself to a position of “me vs. you” and “us vs. them.”⁴⁶⁷ The 2017 PEW Research Center national survey of police officers provides a contemporary example of the in-group / out-group bias. In the PEW study, police responses indicated that officers have significant safety concerns and feel there is a great divide between the police and public.⁴⁶⁸ The officer’s safety concerns could be related to the 2016 increase in officer

⁴⁶⁴ Brannan, Darken, and Strindberg, *A Practitioner’s Way Forward*.

⁴⁶⁵ Murray Horwitz and Jacob M. Rabbie, *Individuality and Membership in the Intergroup System* (Cambridge: Cambridge University Press, 1982).

⁴⁶⁶ Brannan, Darken, and Strindberg, *A Practitioner’s Way Forward*.

⁴⁶⁷ Brannan, Darken, and Strindberg, *A Practitioner’s Way Forward*.

⁴⁶⁸ Morin et al., “Behind the Badge.”

line of duty deaths or increasing crime rates.⁴⁶⁹ However, some researchers found that crime rates were irrelevant in previous years. According to Hanley, despite declining crime rates, police security needs exist and are the catalyst for increased cohesiveness based on a perceived sense of danger.⁴⁷⁰

Hanley's conclusion is also evident in a review of organizational and individual officer's responses when group security is challenged. Responses to challenges of police security are often met with overwhelming effort. For example, the search efforts when a police officer is killed or injured often go well beyond the resource allocations when non-police officers are involved. When, on September 12, 2014, an assailant opened fire at a Pennsylvania State Police Barracks injuring Trooper Alex Douglas and murdering Corporal Byron K. Dickson II, police from New York, New Jersey, and throughout the Northeast responded to assist in the search.⁴⁷¹ Over 11 million dollars was spent on police salary and benefits in the 48-day manhunt for Corporal Dickson's killer.⁴⁷² In this case, the financial expenditure and cross-jurisdictional authorizations indicate that the feelings of police cohesiveness transcend across agencies and their hierarchies.

Another indicator of the relationship between the individual and their profession is observable in the response by officers to police funerals. Hundreds, if not thousands, of uniformed officers from multiple jurisdictions often attend funerals of fallen officers in the line of duty. When, in December 2014, Officer Wenjian Liu was assassinated along with his partner, Rafael Ramos, more than 10 thousand police officers from across the United States and Canada attended his funeral.⁴⁷³ The attendance at funerals is also a

⁴⁶⁹ "Latest Memorial Fund Fatalities Report," National Law Enforcement Officers Memorial Fund, accessed June 16, 2017, <http://www.nleomf.org/facts/research-bulletins/>.

⁴⁷⁰ Hanley, "Killing Barney Fife."

⁴⁷¹ Ed Payne and Joshua Berlinger, "Pennsylvania Trooper Dies in Shooting; One Wounded - CNN.com," *CNN*, accessed June 16, 2017, <http://www.cnn.com/2014/09/13/justice/pennsylvania-shooting/index.html>.

⁴⁷² "Eric Frein Manhunt Cost More Than \$11 Million," ABC News, November 17, 2014, <http://abcnews.go.com/US/eric-frein-manhunt-cost-11-million/story?id=26924795>.

⁴⁷³ Edgar Sandoval, Eli Rosenberg, and Stephen R. Brown, "NYPD Officer Wenjian Liu Remembered in Emotional Funeral," *NY Daily News*, January 5, 2015, <http://www.nydailynews.com/new-york/nypd-officer-wenjian-liu-remembered-emotional-funeral-article-1.2065766>.

direct outward showing of response to an honor challenge and a direct function of in-group affinity. Individual and representative replies to honor challenges are direct defensive measures to protect group identity and their positive feelings. People who identify themselves as members of a group accept the group as a part of their socially constructed identity and, as such, the value of the group has implications for a person's self-worth.⁴⁷⁴ Decisions that people make in this context directly relate to their belief that their choices are relevant to the overall honor of the group.⁴⁷⁵ In addition to SIAM, similar veins of psychological research suggest that people will make decisions if they feel that their choice is personally relevant.⁴⁷⁶

Research suggests that, if people believe that their decision is personally relevant, that sense of relevance can influence their decision. In 2004, through the study of a research group's voting habits, Acevedo and Krueger concluded that people voted more often when they believed their vote mattered and when their chosen vote coincided with the general population.⁴⁷⁷ In the study, the participants voted despite the fact that their actual vote may have been irrelevant because of the U.S. Electoral College system.⁴⁷⁸ Acevedo and Krueger's study shows that personal-relevance-based decisions in certain circumstances may be favored over rational-choice-based decisions, similar to the findings of SIT. The belief in personal relevance suggests that people emphasize selecting their decisions and actions based on a sense of self-interest, sometimes despite contradictory evidence of their decision mattering.

c. In-Group Response to Social Pressure

A person's perceived social identity carries with it a presumption that their decisions and actions are relevant to group representation. According to Tajfel, social

⁴⁷⁴ Brannan, Darken, and Strindberg, *A Practitioner's Way Forward*, 51.

⁴⁷⁵ Brannan, Darken, and Strindberg, *A Practitioner's Way Forward*, 51.

⁴⁷⁶ Melissa Acevedo and Joachim I. Krueger, "Two Egocentric Sources of the Decision to Vote: The Voter's Illusion and the Belief in Personal Relevance," *Political Psychology* 25, no. 1 (March 2004): 115–34, doi:10.1111/j.1467-9221.2004.00359.x.

⁴⁷⁷ Acevedo and Krueger, "Two Egocentric Sources."

⁴⁷⁸ Acevedo and Krueger, "Two Egocentric Sources," 116.

identity is “part of an individual’s self-concept which derives from his knowledge of his membership in a social group (or groups) together with the value and emotional significance attached to that membership.”⁴⁷⁹ Adherence to group membership can be so strong that members will disregard personal losses, sometimes even physical mutilation, for the sake of group loyalty.⁴⁸⁰ SIT suggests that members of a group will make decisions in favor of the group, even at the loss of their own benefit. To members of a group who have developed a strong social identity, the beliefs, culture, and regulations of the group become the individual’s accepted standard behavior. The United States Military, for example, capitalizes on the principles of SIT group membership to create operational teams rather than individual operators. For example, the Navy Basic Underwater Demolition SEAL course is designed to cultivate team accomplishment and discourage individualism, emphasizing that people do not get through the course by themselves.⁴⁸¹

Members of organizations, such as police departments, that are interlaced with adherence to group identification are also prone to being individual representatives for the entire group. According to Vanek, the actions of officers working in a collaborative team are interpreted on three levels “1. As the police in general, 2. As the police department you represent, 3. As an individual.”⁴⁸² The identification of individuals as representatives of an entire group further adds to the already existing influence resulting from group membership. To the same extent, equipment such as the BWC that can convey an officer’s behavior may also be influential in a person’s choice of actions. With a BWC in use, the person is aware that there is a greater chance of scrutiny from both within and reflecting on their group.

⁴⁷⁹ Henri Tajfel, Henri, “Social Categorization, Social Identity and Social Comparison” 1972, <http://psychology.anu.edu.au/files/Manuscripts-3-Social-identity-social-categorization-and-social-comparison-in-intergroup-behaviour.pdf>, 6.

⁴⁸⁰ Tajfel, Henri, *Social Identity and Intergroup Relations* (Cambridge University Press, 1982), 505.

⁴⁸¹ Stew Smith, “Teamwork and Mental Toughness: More Important than Fitness, But...,” Military.com, accessed June 16, 2017, <http://www.military.com/military-fitness/general-fitness/teamwork-and-mental-toughness-more-important-than-fitness-but>.

⁴⁸² Vanek, John, “Why Individual Integrity Is a Fundamental Value in Police Leaders,” *PoliceOne*, accessed June 16, 2017, <https://www.policeone.com/police-leader/articles/8640835-Why-individual-integrity-is-a-fundamental-value-in-police-leaders/>.

BWC use demonstrates that the officer's performance is evaluated not only by the public but also by their supervisors and peers. The BWC brings with it a firsthand view of officers' actions, demeanor, and knowledge, as well as their reluctance to act. The police that use the BWC are expected to work within the norms of the group, which includes defending the group's honor. In other words, when an officer is faced with an honor challenge in the field while wearing a BWC, they are no longer the sole witness to their response. An officer with a strong group identity will likely, therefore, act according to their perception of how the group believes they should respond, limiting their possible options, giving rise to heuristic errors on several layers. Under group identity conditions, the officer's decision-making is influenced by their perceptions of self-worth and self-interest. Subconsciously, they are likely to balance decisions between expected response and the risk of losing self-esteem. The decision-making obstacles presented by the feelings of personal relevance and self-identification with group membership are further compounded by society's view of police agencies as systematic and broken.

3. Minimize Officer Discretion for Incident Recordings

Agency policy should explicitly spell out when officers are to commence and end BWC activation, complete with consequences for failing to record and a system for ensuring compliance. When officers fail to record an incident, despite the availability of BWCs, public sentiment reverts to suspicion and accusations of misconduct. For example, in 2017, when police shot a woman in Minneapolis, Minnesota, the fact that the officers failed to turn on BWCs created as much controversy as the actions surrounding the shooting.⁴⁸³ Several studies, including one in Phoenix in 2013, have shown that officers selectively record calls for service when allowed.⁴⁸⁴

One of the main purposes for BWC implementation has been to deter misconduct. Deterrence is based on three elements: the likelihood of apprehension, severity, and

⁴⁸³ John Eligon and Mitch Smith, "Woman Shot by Minneapolis Officer 'Didn't Have to Die,' Police Chief Says," *The New York Times*, July 20, 2017, <https://www.nytimes.com/2017/07/20/us/police-shooting-minneapolis-body-cameras.html>.

⁴⁸⁴ Katz, "Deploying Officer Body-Worn Cameras in Phoenix."

swiftness of punishment.⁴⁸⁵ However, agencies are still attempting to achieve optimal operational levels, without maximizing the deterrent effects of the BWC. It is possible that agencies favor minimum deterrent levels out of fear that they will deter actual police work. Optimum functional levels are achievable if officers work with the expectation that all incidents are recorded. In 2015, in a follow-on investigation to a multi-site study, Ariel et al. argued that the deterrence of misconduct is closely linked to activation policies and discretion in BWC operation.⁴⁸⁶ Ariel et al. also contended that when organizations allow officers greater discretion to record without consequences for deactivation, the deterrent factors of the BWCs were less effective.⁴⁸⁷ Evidence from the same study suggests that when recording commences after an encounter has escalated, the BWC does not have deterrent effects on the police use of inappropriate force.⁴⁸⁸ There is a possibility that BWCs limit de-escalation techniques when used selectively. For BWC use to have the highest chance to support the de-escalation of a situation, officers should notify people of BWC recording, and it should be at the very onset of or before the engagement. Ultimately, if officers are allowed to modify or opt-out of mandatory activation procedures without consequences, BWCs will not likely improve behavior.

4. Allow Automated Systems to Record Incidents within Practical Limits of Acceptable Agency Parameters

There are several reasons why agencies should look at automatically activating or continuously recording BWCs. Evidence recovery and selective activation have posed problems with officers since the police started using dash cams. Beyond dash cams, several BWC experiments, including those in Phoenix and Denver as well as the RAND multi-site study, noted problems with officer inconsistency in activating the units. Automated systems ensure that evidence is captured despite an officer's desires, and they provide police psychological conditioning. In some cases, there are definite benefits

⁴⁸⁵ Ariel et al., "The Deterrence Spectrum." "

⁴⁸⁶ Ariel et al., "The Deterrence Spectrum."

⁴⁸⁷ Ariel et al., "The Deterrence Spectrum."

⁴⁸⁸ Ariel et al., "The Deterrence Spectrum."

when officers are conditioned to having all incidents recorded. One study found that when agency BWC policies mandated recording and officers had limited authority to turn off the camera, improper use-of-force incidents declined.⁴⁸⁹ Complaints of recording failures have several manufacturers creating camera units that activate on physical triggers such as overhead light engagement or the removal of a weapon from the holster. There is also a benefit to automated BWC systems that override the officer's ability to intentionally failing to record incidents. Automated BWCs may also provide safe recording when officers are unable to activate their cameras.

During critical incidents, as officers are fighting for survival, there may not be enough time for them to turn on their BWCs. During vehicle pursuits, automobile accidents, or deadly force encounters, the action may occur at speeds that prohibit the opportunity to do anything at all except focus on completing the task safely. Under survival conditions, stress levels may be at a point that activation is physically impossible. Colonel David Grossman writes that the human brain cannot activate fine motor skills, such as pushing the button of a BWC, when a person's stress is elevated to fight-or-flight mode.⁴⁹⁰ Automated systems may also link critically triggered BWC activations to other safety features, such as dispatch alerts complete with GPS locations and open-ended communications. Andrew Rathburn, writing for *Police Magazine*, says that police adaptability with emerging technologies is necessary, as the integration of electronics will likely shape operational methods.⁴⁹¹ Rathburn recommends organizations adapt to the influx of electronics quickly rather than fall behind technological progress.⁴⁹²

⁴⁸⁹ Ariel et al., "The Deterrence Spectrum."

⁴⁹⁰ Christopher Pendas, "Conquering the Freeze," *Staying Safe-Self Defense*, December 18, 2014, <https://staying-safe-selfdefense.com/tag/dave-grossman/>.

⁴⁹¹ Andrew Rathburn, "Trouble for Obamacare: Aetna Reduces Exchange Presence," *U.S. News & World Report*, May 16, 2017, <https://www.usnews.com/news/articles/2016-08-15/trouble-for-obamacare-aetna-reduces-exchange-presence>.

⁴⁹² Rathburn, "Trouble for Obamacare."

B. CONCLUSION

Isolating law enforcement operations in a neat, testable experiment is akin to studying any human decision making under serious pressure; results may vary. Significant variables can affect behavior outside BWC use. Specialized training, pressure from national or local events, the psychological aspects of being recorded, and countless other factors all may concurrently, with or absent of BWC use, influence a shift in policing methods. The culture, personality, education, and training of the test subjects alone make ascertaining transferable BWC test results difficult, and challenges also exist in attempting to extrapolate national data from local and regional research. Thus, unsurprisingly, the analysis revealed varying results among the previous studies. Some studies showed positive results with decreases in complaints and use of force while others concluded with neutral or adverse effects arising from camera implementation. However, the variations in results of BWC research conclusions are entirely logical if other factors are considered. When results are matched against the history of dashcams and consideration is given to a police officer's perceived social identity, it is understandable that research results will have varying results.

Under conditions in which an officer is accustomed to a BWC and pressured by a challenge to his or her social identity, the use of the camera technology may speed up the time in which a police encounter is resolved. Before the utilization of a BWC, an officer had the option to allow a citizen or suspect time to vent emotions and comply with commands, without the possibility of later public scrutiny. However, the use of the BWC reveals an officer's actions, demeanor, and knowledge, as well as one's reluctance to act—to their supervisors, peers, and the public. When an officer must protect a social identity on video, taking verbal abuse or time to de-escalate a situation, may not seem, on camera, to be a professional response by the police when actually talking things through, even if it means getting called names, may have saved lives or at least decreased use of force on either side. The officers, conditioned with a perceived social identity, may act as if their decisions and actions represent their group, and an officer with a strong group identity will likely act according to their perception of how the group believes they should respond, limiting their possible options.

If the hypothesis is correct that a BWC limits the de-escalation abilities of the police because of the impact the recordings may have on social identity, then research indicating the neutral or increased use-of-force incidents makes sense. Also, an officer wearing a BWC may feel a reduced need for gathering evidence, based on the perception that the camera acts as an independent witness. An officer's opinions that the BWC provides support in justifying his or her actions may explain why Pang and Pavlou found increases in deadly force incidents with camera use. The theoretical explanation that follows helps explain how the findings reported by researchers Ariel et al. as well as Pang and Pavlou are possible.

Before the use of a BWC, an officer had a requirement to gather enough articulable evidence to justify an enforcement action or the use force. The independent gathering of proof necessary for prosecution created a process that extended officer and suspect contact. During the extended contact period between officers and suspects, negotiations were repetitive, and time was allotted for logical decisions to prevail. The time it took officers to gather enough reasonable articulable evidence to justify a subjective arrest, or use of force, inherently fostered a de-escalation dialogue. Also, exchanges between officers and civilians remained isolated to the knowledge of the witnesses. An officer extending a courtesy or a civilian berating an officer was not second-guessed by the public or available for public review, as video evidence was unavailable. However, the situation changed when BWCs were introduced into the environment.

With BWC use, there is a high probability that officers may curb behavior, issue fewer warnings, and work tightly within the rule of law. An officer with a BWC also knows that video recordings as evidence have a sound impact on judicial proceedings. The officers may have a presumption that a BWC recording assists in justifying an action, in turn making the officer less averse to deploying force. The assumption that a BWC acts as an independent witness alleviates some of the officer's responsibility for collecting a substantial amount of reasonable articulable evidence. In turn, there is a reduction in the processing time for a scenario requiring subjective decision making. Less processing time means less repetitive orders and a decrease in time for constant efforts to

de-escalate the situation. As the officer initiates action faster, the parties engage during a point in time when emotions are at their highest. When an officer and a subject engage with limited de-escalation time, compliance is limited, leading to an escalation in the use of force. The theoretical explanation described applies in many situations where officers face subjective decisions. In police work, an officer subjectively decides the interpretation of circumstances in cases that range from disorderly conduct to the use of deadly force.

Within this situation, the officer's organization exerts pressure as well. Under the conditions described, the officer's decisions are more likely to favor protecting his or her social identity, lowering one's tolerance to honor challenges. The officer is less likely to allow perceived honor challenges to pass, acting to save face for the group. The BWC recording is a memorialization of the incident available to supervisors, peers, and the public. An officer less inclined to let honor challenges pass may be more willing to use force as resolution. Within this context, a situation resolved through de-escalation or avoidance may not satisfy the officer's psychological needs at the time.

The BWC is not just a piece of equipment that is distributable without due consideration. If the elements presented here are correct, BWC use may contribute to increased use of force due to decreased officer tolerance. However, BWCs do show great promise; the equipment does have the ability to provide transparency and bolster police legitimacy. As many authors stated before, no more than dashcams are, BWCs are not a panacea for the problems that exist between society and the police. Unintended consequences of BWC use may occur if not avoided through a comprehensive system of policy, training, education, and quality management.

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