

# Leading an Experiment in Police Body-Worn Video Cameras

International Criminal Justice Review  
2015, Vol. 25(1) 80-97  
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sagepub.com/journalsPermissions.nav  
DOI: 10.1177/1057567715574374  
icj.sagepub.com



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## Abstract

Body-worn video (BWV) is seen internationally as having the potential to reduce public complaints against police, police use of force, and attrition of prosecutions due to lack of physical evidence. Beyond the Cambridge trial in Rialto, California, however, no studies have tested the effects of BWV. The present study documents a Police leaders' implementation of a randomized controlled trial of the use of BWV. The main objectives are to identify the challenges to implementing a trial and identify how they were overcome. The solutions to these challenges may provide key lessons for police leaders, not only as they undertake evidence-based testing, but also as they manage police operations and implement change.

## Keywords

body-worn video, police experiments, implementation, randomized controlled trials, resistance to change, tracking police performance

## Introduction

Body-worn video (BWV) is an innovation in police technology that can help address calls for greater transparency, efficiency, and effectiveness of police conduct. Internationally, these issues are being explored with BWV featuring prominently in Western Police Forces. An indication of the popularity of BWV can be seen when the New York Police were ordered by Judge Shira A. Scheindlin (*The New York Times*, August 13, 2013) to wear BWV to monitor disproportionate use of stop and search. Yet much remains unknown about BWV. It is still important to ask whether these cameras are a worthwhile investment of taxpayer's money. Only strong evidence from randomized controlled trials (RCTs) can answer that question. While one RCT has been reported (Ariel, Farrar, & Sutherland, 2014), many others are needed to understand and extend the findings of that first test. All RCTs face challenges to implementation, a key issue in producing good evidence for policing

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(Strang, 2012). The growth of RCTs can only prosper with a growth of literature on their implementation.

This article describes the process of implementing an RCT under the leadership of a senior leader in a single area of a large British police agency. The object of the test was BWV, but the process of the test could have been almost any new technology issued to police officers. The purpose of this article is not to contribute knowledge about the effects of BWV, but on the introduction of BWVs into police work—under the special constraints of an RCT.

The Wolverhampton RCT was designed to test the effects of BWV on the rate of both police use of force and complaints. In order to do that, however, it was necessary for the local commander to implement, with high compliance levels, the procedures for both BWV and an RCT. This task was made more complex by expanding the outcomes beyond Rialto's to include data on criminal justice outcomes, including domestic violence—a high-volume and high-risk offense. BWV has the potential to assist in the prosecution of domestic violence as it captures the scene, injuries, and behavior of the parties first hand. The ability to show juries this detail has the potential to improve both conviction and early guilty plea rates.

Even if repeated RCT tests of BWV show supportive results, and even if every police agency in the world decides to require police to wear BWV cameras, many questions will remain about their use. Those questions are the focus of the present study. We do not present here the results of the Wolverhampton RCT. Instead, we present a case study of implementing BWV in a large English police agency, in the context of an RCT. The study attempts to contribute a qualitative understanding to the application of evidence-based policing, especially in relation to both testing and tracking police practices (Sherman, 2013).

### *Aims and Objectives*

This article documents the journey of implementing a new policy by way of an RCT, using a participant-observation perspective. We detail the challenges we encountered from March through August 2014, concluding 3 months into the full 7-month trial. In documenting how these challenges were overcome, conclusions can be drawn for other police leaders who wish to either run an RCT or implement any kind of change within their force. The need for an evidence base of what works in policing practice is great. Police-led RCTs and the use of new innovation may help leaders accomplish this challenge.

### *Conducting Research as Organizational Change*

Conducting a robust experiment within a policing organization is a challenge for even the most experienced researcher. There is wide concern over the gap between research and police practice (Lum, Telep, Koper, & Grieco, 2012). Research conducted in the Sacramento Police Department found that 75.1% of officers felt that new ideas from Commanders were passing fads and practice would soon return to normal (Lum et al., 2012).

In addition, the moral obligations of the police to serve and protect life and property can be interpreted to be at odds with scientific research (Greene, 2013). The need to allocate people into treatment and control can be opposed by people who see it as ethically wrong to prevent all people benefiting from a new intervention. If these potential issues are not addressed and key stakeholders are not engaged with, then the research can stall under opposition.

Police leaders and researchers can find themselves at odds when conducting experiments in the field. Researchers are concerned with the effects whether positive or negative and maintaining scientific discipline. This can cause conflict with police leaders who are measured on delivering improved performance and service (Strang, 2012). Experiments require thorough planning and

agreed protocols between police and researcher. It is a strong relationship with the commanding officer that underpins a successful experiment. Research into the effects of restorative justice in Canberra, Australia, is a good example of how relationships are critical to a successful experiment. In 1995, the experiment was established with the full support of the Chief of Police. Unfortunately, when a new Chief was appointed who was skeptical of restorative justice, the experiment quickly suffered (Strang & Sherman, 2012). Despite contractual obligations to maintain the experiment, the lack of support from the top soon hampered the researchers and drastically reduced the case flow of new cases for random assignment, for which the only solution was to double the length of the experiment (Strang & Sherman, 2012). These case studies provide a valuable insight for future experiments, emphasizing the need for strong relationships and written contractual agreements prior to embarking on an RCT.

In the case of BWV, the experimental design is done by “batch” rather than with a case-by-case “trickle-flow” (Sherman, 2010). The biggest threat of noncompliance in a batch-random assignment trial is not case flow. Rather, the threat is officers failing to adhere to the random allocation and direction of cameras to be worn or not worn. How can that challenge be met more successfully in light of previous experience with field experiments in policing?

There have been a number of documented recommendations made by researchers who have implemented change within a police organization or who have led police-based research. Dr. Heather Strang (2012) identifies the need to maintain support at the top of a police organization. She also highlights the need to maintain a consistent delivery to the experimental conditions (Strang, 2012). This is achieved through training and then a process of monitoring the compliance to the experimental conditions (Strang, 2012). The real test here is how once an issue with compliance has been identified and then addressed. Again, we see the need for strong communication skills especially as there is often very little formal leverage when a researcher is working within the police organization.

The value of training is a common factor raised within the literature (Fixsen, Naoom, Blaze, Friedman, & Wallace, 2005; Lum et al., 2012). It allows for the detailed requirements of the change program to be communicated to every person and for the rationale and value to be given in a process of gaining support. Training is not just a one-step process but can be used to facilitate an evolution of understanding and a two-way feedback process. Without a system of coaching and monitoring, the value of training will be lost and forgotten (Fixsen et al., 2005). Training can break down resistance based on preconceptions and if part of a system of review and feedback can motivate and engender support.

A number of obstacles and issues can be identified and catered for prior to starting research within police organizations. Issues such as funding and resourcing can be identified and allocated. The research methodology can be agreed upon and defined. There is only so much, however, that can be planned for. Experiments need to have a period of pretesting, which allows for unforeseen issues to be identified and addressed. The need for a pretest or phase one can be overlooked by inexperienced researchers leading them to discovering unintended consequences or unworkable treatments when they are in main experiment phase (Strang & Sherman, 2012). Setbacks such as these that are not part of a structured process or pretest and review has the potential to impact budgets, timescales, and the credibility of the researcher.

Skogan’s (2008) research into why police reforms fail discusses resistance at every level within a police organization. Change can be resisted if officers feel that it is more work for them or if the advantages cannot be easily recognized. Skogan reports that resistance often comes from supervisors and middle managers who see change as a challenge to their authority. It is vital to gain and monitor the support of frontline supervisors as they have the potential to undermine the implementation process.

Gaining authority for change or research does not automatically ensure support. Underestimating the need to secure the support of stakeholders in addition to the authorizing decision maker can jeopardize a trial. The politics that surround policing must be considered, as it is a risk to any potential

change if not appreciated fully. From elected officials who hold the police to account to police unions, there must be a considered approach toward gaining their support (Lum et al., 2012). An example of this can be seen with the evolution of community policing within the United States. Community policing was embraced by some police unions, but rejected as “social work” by other unions (Skogan, 2008). Initiatives that have finite time and budgets can become entrenched and fail if political appetite for a venture is not accurately assessed and catered for.

### *Implementing New Technology*

The development and implementation of new technology is a key component of many police agency strategies to improve the effectiveness and efficiency of their officers. Technology such as GPS-enabled radios allow for analysis and tasking of resourcing in a manner never previously possible. However, the technology has encountered resistance, as frontline officers see it as senior management surveillance and removing their discretion (Ariel & Wain, 2014). Middle managers have seen it as being micromanaged and removing their autonomy. This resistance was seen across the United States when the GPS technology was implemented (Manning, 1992). The opposition was addressed by highlighting the increased safety potential for officers who can be located immediately if they need assistance. The theme of officer protection is a powerful one and of relevance for BWV, which can offer officers corroboration in instances of complaints or contested accounts.

### *Models of Tracking Implementation*

Researchers into change management have summarized their findings into models such as Fixsen et al. (2005), Kotter (2012), and Innes (2013). These models assist leaders as they plan and move toward implementing change.

A key model of implementation was devised by Fixsen et al. (2005) after a comprehensive review of research literature and implementation guides in the field of evidence-based practices. The conclusion of the synthesis of the literature was a framework for implementation that consists of five component parts. Component 1 is identified as “Source,” or identifying the best practice. Component 2 is “Destination,” which is the process of supporting and facilitating the innovation. Component 3 is “Communication Link,” led by a change agent to promote and ensure implementation. Component 4 is “Feedback,” which ensures a two-way flow of information about performance of implementation. Component 5 is “Influence,” the wider political, economic, and social factors that effect the implementation (Fixsen et al., 2005).

The change model devised by Kotter (2012) identifies eight stages in implementing major change. The model goes through three main phases of unfreezing the current method of delivery, moving toward a state of change and then refreezing the change to become routine (Iszatt-White & Saunders, 2014). While there has been some criticism of the linear nature of this model (Iszatt-White & Saunders, 2014) it is of value to a leader embarking on implementing change. The model shares common elements of creating a need for change, identifying how crucial communication and feedback is to ensure change is consolidated (Kotter, 2012).

Martin Innes (2013) suggests that innovation goes through three key phases of Revolution, Evolution, and Involution. Revolution is creating the need and context for change within an organization. Evolution is the process of linking change with the current practice. Emphasizing the evolution of an existing practice may then reduce resistance. Involution is the ability to allow innovation to be adapted to local circumstance (Innes, 2013). All of these concepts proved useful in leading the Wolverhampton BWV experiment.

## Research Settings

The West Midlands Police Force covers 348 square miles and serves a population of almost 2.8 million (West Midlands Police, 2014). Wolverhampton is one of three cities within the police force area. It has a population of 250,000. In 2010, it was the 20th most deprived local authority in the country (Wolverhampton in profile, 2014). In April 2014, 6.3% of the population claimed job seekers allowance compared to a national average of 2.7%. The city is policed by over 400 West Midlands police officers, of whom 105 officers are assigned to responding to emergency calls. These officers are split into five teams of 21 constables, 3 sergeants, and 1 inspector. The teams are configured to a three-shift system of early, late, and night. Each team has a minimum deployment of 18 officers per tour of duty. The principal investigator in this trial is the first author, who is an acting Superintendent with responsibility for crime and operations.

At the time the RCT began, policing with BWV was not new to the city of Wolverhampton. In 2013, the Wolverhampton Domestic Violence Forum purchased 13 cameras. The numbers were based on the funds available and a belief that BWV would increase the quality of police investigations into domestic violence. The cameras were allocated to response teams without sufficient planning, training, or an agreed process of evaluation. The cameras were too few in number and were being used by exception rather than as a matter of course. When the Domestic Violence Forum asked Wolverhampton Police for an evaluation, it became clear that there were little data available to present. Anecdotally, the cameras were seen as improving the evidential case of domestic violence, especially where victimless prosecutions were pursued, but there was no clear evidence to support that conclusion.

## Designing the Experiment

A study into the effects of BWV therefore became a prime proposal. In a meeting with the second author in the winter of 2013, it was agreed that an RCT in Wolverhampton could attempt to replicate the Rialto experiment. In addition, criminal justice outcomes of arrests for crimes such as domestic violence could be examined for BWV effects. The experiment was designed to test the effect of response officers wearing BWV on the following:

1. The number of recorded incidents of police use of force
2. The number of citizen complaints against response officers
3. The early arrest rate, charge rate, and guilty plea rate for domestic violence, public order, serious sexual assault, drug, and weapon possession crimes

The three-shift system of early, late, and night shifts comprise the units of analysis, with 21 shifts per week. In this trial, the treatment group has BWV allocated to all officers on a tour of duty. All interactions with members of the public are to be recorded. The only exemptions to the procedure of recording are for the following:

- Firearms incidents
- Public order and football deployments
- Emergency situations where activating the device will present safety risks
- The explicit wishes of the victim

These exclusions are either due to operational requirements and policy or to prevent the treatment being counterintuitive in the case of the wishes of the victim. The control group will have no BWV worn by any officers for the entirety of the tour of duty.

A 1-month “dry-run” test period was planned to allow for a review of the experimental design, equipment, and data capture. During the test period, officers were instructed to video-record all interactions with the public for every shift, without any control shifts. This plan created a stress test on the equipment, the practicalities of using the cameras, and the accuracy of the data recording. The subsequent review prior to the start of the 6-month period of random allocation was then able to make adjustments informed by the dry run.

### *Random Allocation*

The five response teams were randomly allocated to treatment and control status on a weekly basis by Cambridge University (Ariel, Vila, & Sherman, 2012). Ensuring the integrity of the experiment is critical and is directly linked to the integrity of the random allocation process (Strang, 2012). Table 1 is an illustration of the random allocation that was employed.

### *Apparatus*

Agreement was made with Edesix to provide 43 BWV cameras for use during this trial. The cameras are small credit card-sized devices attached to the body armor of officers, capable of continuously recording audio and video for a complete tour of duty (see Figure 1). The devices are recharged and downloaded in docking stations located at the parade (roll call) station and custody suite. Docking stations at both the parade location and the custody suite allowed officers to download footage as part of the standard prisoner procedure. All footage was stored on the docking stations for 30 days unless marked for evidential purposes. This storage was in line with current retention guidelines. Evidence for court was transferred to a DVD format.

## **The Challenges of Implementation**

### *Part I: Getting Started*

On March 10, 2014, the first author received an e-mail from the assistant chief constable approving a test of BWV in the city of Wolverhampton. The following 8 months would be a test of leadership to successfully implement the experiment and then maintain the integrity of the protocols.

The first challenge was obtaining a sufficient number of cameras to conduct the experiment. One supplier, Edesix, already had a footprint in Wolverhampton from supplying the 13 cameras purchased for officers by the Domestic Violence Forum in 2013. The company was supportive of a trial and agreed to loan 30 further cameras free of charge. Since there was no budget for the trial, this loan of the equipment was crucial to making the experiment viable. Edesix hoped to develop their product through the feedback from officers and a potential scientific endorsement of the use of BWV. In addition, they saw the partnership as a step to developing a relationship with the second largest police force in the country.

On March 24, the author was informed that the experiment would be terminated. A different decision body within the police force had just authorized a smaller trial of BWV in Birmingham. There was a concern that BWV would devalue the evidential weight of an officer’s statement, so that the evidence of an officer would not be accepted unless supported by video evidence.

This new decision was raised with an assistant chief constable, who then championed the experiment at the next meeting of the board that had overruled the experiment. The differences in demographics and geography between the city of Wolverhampton and the already selected residential site in south Birmingham were highlighted. Reassurance was given that the author could run the experiment and ensure that it would be cost neutral. The experiment was delayed by a month while the case



**Table 1.** An Example of Random Assignment of Wearing BWV by Shift.

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Day shift (7 a.m.–5 p.m.)	T	T	C	T	T	T	C
Late shift (5 p.m.–10 a.m.)	C	C	T	C	C	C	T
Night shift (10 p.m.–7 a.m.)	T	C	C	T	C	T	T

Note. BWV = body-worn video.

**Figure 1.** Picture of BWV used in experiment.

was made and the procurement department checked the agreement with Edesix. Finally, the authority to proceed was given.

The challenges of authorization from above were kept out of local discussions. This was to prevent any doubt among the officers and staff in Wolverhampton about whether the experiment would go ahead. This decision was supported by the experiences of researchers such as Strang (2012). The work involved in gaining authorization was significant and it became likely that there would be other unforeseen challenges ahead. It was with this in mind that a team was gathered to assist in implementing this experiment. The purpose of the team was to prevent the “planning fallacy” (Kahneman, 2011, p. 249) of underestimating the requirements to get the experiment completed. A wide set of skills that would be required across the course of the trial.

There were two key people who would be crucial to the success of the experiment: one each for operations and data. First, someone was needed to deal with daily issues and ensure the protocols of the experiment were adhered to. This would allow the profile of the experiment to be maintained while allowing the first author to continue with the core role of managing the police response to crime and operations in the city. A constable with over 25 years of policing experience was chosen to fulfill this role, in order to encourage response officers to speak freely about the

experiment. This PC had the respect of fellow officers within the city and crucially had a background in training. He was able to take the research protocols and translate them into a training program that was delivered in a manner to which the officers were accustomed. The training covered the practicalities of using the equipment, the protocols of the experiment, and a forum to address concerns.

A second key role was the data collection manager. The area performance analyst took this second key position on the team. Her knowledge of police systems allowed us to quickly gather the baseline data, which highlighted a new problem: There was no conventional process within West Midlands Police to capture police use of force. To close this gap, an officer on restricted duties was tasked to manually review arrest and custody records and note where use of force had been used.

The final key team member dealt with the public communications strategy. Already assigned to lead the partnerships team within the city, he was tasked with raising the use of BWV within the city forums, ensuring that support was obtained and partners were updated. He would also be able to feed back any issues or concerns raised within partner or public meetings that would help to prevent a repeat of issues encountered in the earlier project for using BWV for domestic violence arrests.

Without this team, the experiment would have floundered in the planning stages. The skills of each of its members would become critical in establishing and running the RCT. The main two elements prioritized were gaining support for the experiment and creating a process where the random allocation and data collection could be swiftly and accurately completed. The team was able to assist in both these areas. The biggest challenge for the team at this early stage was generating and maintaining support for the experiment.

*Police hearts and minds.* From the start of this process, it was identified that the support of the response teams would be essential. There are many ways to approach briefing and addressing the officers who were to partake in the experiment. The response Inspectors could have been instructed to brief the team or inputs could have been put out on e-mail and the briefing system. It was decided that the author would address the teams in person without PowerPoint so that the message was undiluted and the issues raised were clear. It was believed that by making it personal the importance of the experiment could be stressed and the issues raised could be directly tackled.

Over the month of March, briefings for the five response teams were conducted. The briefings covered the value of understanding more about the effects of BWV and how the experiment would work in Wolverhampton. The initial feedback was negative and full of concern. Officers found the fact that they were required to record all interactions with members of the public troubling. Not only was discretion being removed, but there was also a fear that supervisors would trawl through footage looking for opportunities to discipline. All the teams shared a degree of concern in this area, which interestingly indicated the potential deterrent effect of having officer actions recorded. However, to ensure that there would be continued support for the experiment, the first author ordered that the footage could only be reviewed for either evidential purposes or dealing with a public complaint. This went some way to convincing officers that this was not an elaborate witch hunt to allow supervisors to find fault with them.

The supervisors were concerned with the random allocation process. While they understood the principles behind random allocation, the costs of not wearing cameras to incidents that would benefit from video footage they viewed as very high. A key role for a police officer is to gather the best evidence possible. Therefore, not wearing BWV to incidents such as serious assaults and murder was considered to be neglectful.

This was a moral dilemma to which a response was planned prior to the briefings. The response emphasized that BWV had been made available in Wolverhampton on a loaned basis, for only a relatively short period. Prior to having BWV, police officers managed to deal with the same incidents using methods and resources other than BWV. It was explicitly explained that nothing was being



taken away from the way we police. The only change was that we were doing something extra on the treatment shifts.

The teams seemed reassured with the direction around reviewing footage and the ethics of not wearing BWV on control shifts. Questions began to turn toward more practical issues. The questions reaffirmed the need to run a test phase. This would allow for officers to become accustomed to the use of BWV and for the implementation team to review the realities of the experimental design, data capture, and identify any technological issues. The operational lead PC was tasked to run a series of training sessions for all response officers to ensure they understood how to use BWV and the experimental design, especially the camera use being randomly assigned. The feedback from the training was that most officers were happy to use BWV and they could see the value in testing its effects.

*Gaining partners and public support.* Gaining the support of key stakeholders was a vital criterion for the central oversight of the experiment. Failure to consult and engage key external constituencies could result in the experiment being misrepresented and opposed. The key stakeholders concerned in this experiment were identified as the Crown Prosecution Service (CPS), Courts, and the Domestic Violence Forum. Finally, to ensure there was not a repeat of the domestic violence project, there would need to be a transparent and open engagement with the public.

The Domestic Violence Forum was the first to be approached out of consideration to their existing investment into BWV. A risk was foreseen in explaining to the forum that cameras would be allocated randomly and that there would be domestic violence incidents where no recording would occur. In a similar way, as with the response supervisors, the Forum was reassured that there would still be the standard police response. The Forum was satisfied that conducting an experiment would answer the same questions about the effect of BWV on domestic violence cases that they had originally asked in 2013. Having the support of the Forum strengthened the case in the negotiations with both external partners and central oversight.

The support of these external partners was obtained at a regional criminal justice meeting between the CPS, Courts, and Police. The meeting was positive, with the CPS asking a number of questions around disclosure. They were satisfied when informed that the footage would be available with the file for immediate use. A concern was raised regarding the impact of victims being filmed, as it may show them in a manner that juries may not be sympathetic to. It was quickly agreed that victims and witnesses must be taken as they are found and make a decision on charge accordingly.

The experiment now had the support of all the key partners in the city. The effort to present and consult with them ensured that there was no official external opposition to the experiment, which then assisted in convincing the internal decision makers that the process was worthwhile. All that remained was to consult with the people of Wolverhampton.

A communication strategy for the public was needed to run in parallel with the other elements of engagement to ensure that people were aware that officers would be filming on the streets of Wolverhampton. Any issues needed to be identified early so as not to jeopardize the experiment at a later time. A series of press releases had already been delivered with the use of BWV provided by the Domestic Violence Forum in 2013 (Facebook, 2013; Flickr, 2013). Social media would be used again in 2014 to publicize the use of the cameras. Web chats and local community meetings raised awareness of the use of the cameras. In addition, the Police Crime Commissioner was briefed and supported the experiment. As of late 2014, there had yet to be a single concern or public complaint made with regard to officers using BWV.

## *Part II: Up and Running*

By May 2014, the research had the full backing of West Midlands Police, the key partners, and the camera providers, Edesix. May was to be the start of stress testing the equipment, officer

behavior, and the recording process. After a review and amendments, June was the start of the RCT. Yet that is just when the response teams were subjected to other changes.

In June 2014, as part of a wider change within Wolverhampton, all response officers were moved from a satellite station to the headquarters within the city center—where no parking was available for the officers. Attempts to keep the profile of BWV among officers high were challenged. In BWV briefings, there was only one topic that officers wanted to discuss: parking. At the previous station, officers had enjoyed free parking, but now they had to pay. It was clear that the issue needed to be addressed as officers had no interest in BWV when they felt the senior leaders were in reality reducing their pay. A solution was quickly identified to allow partial parking at the station, and favorable rates were negotiated with a nearby car park. These issues were crucial at the time to ensure officers' support.

*Dry-run phase.* The dry-run, all-shifts BWV phase identified a number of practical issues to be addressed. The support team and the author kept the regular face-to-face meetings with the response teams to obtain feedback. Officers raised several unforeseen issues such as using the cameras in hospitals causing a conflict with medical confidentiality. The use of cameras when conducting strip searches was also raised. Leadership quickly agreed that the consent of the medical staff should be sought, and strip searches should not be recorded. Asking for a supervisor from each team to lead for the BWV experiment developed a sense of officer "ownership" of the trial even further. The team supervisor's role was to champion the experiment and ensure compliance with the research design.

Support among the teams was fostered as the month continued by celebrating the successes. Using the PC and response team leads, the first author was quickly able to build up a number of crime incidents where camera footage had led to a guilty plea by the defendant. In addition, there had been a number of instances where a member of the public had changed their behavior from aggression to reluctant compliance after being informed they were being recorded.

At the end of the dry run, the main stage of the experiment was entered optimistically with the belief that the teams knew what was expected of them and that they supported the trials' objectives. The data capture process was functioning. At the conclusion of the test phase, a report on camera usage by the teams was commissioned. These findings "tracking" camera use (Sherman, 2013) gave an insight into the usage of BWV far beyond that of the feedback sessions conducted.

As Table 2 shows, the camera usage by response teams varied substantially as a percentage of the total time cameras were booked to officers. There was a large disparity, between 6% and 18%, in the percentage of time while officers wearing cameras were actually recording.

The figures show two teams, C and E, were recording far more hours than Teams A, B, and D, both in total and as a percentage of the time they had the cameras on. While this is not conclusive evidence of differing compliance levels between the teams, it does allow for the issue to be explored with them.

Each team and their supervisor were spoken to and the issue of officer compliance was raised. A few issues were presented that helped in understanding the difference in recording time. One was a lull in recording time for several days while the response teams located to their new station—and the BWV were transported across and calibrated. Another was that officers forgot whether they were on a treatment or control shift on a number of occasions. Third, if a camera was taken out of one docking station and later placed back in another, then the device would not recharge or download; officers who had finished a night shift were prone to making this mistake due to fatigue.

The leadership team decided to use aspects of Nudge Theory to address some of these issues. Nudge Theory advocates the use of subconscious "suggestion" over enforced compliance to achieve a goal (Thaler & Sunstein, 2008). The first author decided to use "suggestion" to get officers to adhere to the random allocation of treatment and control and resolve the docking stations issue.

**Table 2.** The Test Period May 19 to June 18.

	Number of Shifts on Duty	Total Hours Camera Booked Out	Total Recording Time	Percentage Camera Hours Spent Recording	Number of Officers Attending Incidents
Response A	13	1904.6	113.5	6	526
Response B	12	2096.7	169.5	8	628
Response C	13	2257.8	330.8	15	508
Response D	12	2000.3	164.2	8	581
Response E	13	2089.6	365.8	18	404

Day	Date	Shifts per day	RA	Team
Lates	Monday	06/10/2014	Cameras On	C Response
Nights	Monday	06/10/2014	No Cameras	A Response
Earlies	Tuesday	07/10/2014	No Cameras	B Response
Lates	Tuesday	07/10/2014	Cameras On	E Response
Nights	Tuesday	07/10/2014	Cameras On	C Response
Earlies	Wednesday	08/10/2014	No Cameras	B Response
Lates	Wednesday	08/10/2014	Cameras On	E Response
Nights	Wednesday	08/10/2014	Cameras On	C Response
Earlies	Thursday	09/10/2014	Cameras On	D Response
Lates	Thursday	09/10/2014	Cameras On	B Response
Nights	Thursday	09/10/2014	No Cameras	E Response
Earlies	Friday	10/10/2014	Cameras On	D Response
Lates	Friday	10/10/2014	Cameras On	B Response
Nights	Friday	10/10/2014	Cameras On	E Response
Earlies	Saturday	11/10/2014	Cameras On	A Response
Lates	Saturday	11/10/2014	No Cameras	D Response
Nights	Saturday	11/10/2014	No Cameras	B Response
Earlies	Sunday	12/10/2014	Cameras On	A Response
Lates	Sunday	12/10/2014	Cameras On	D Response
Nights	Sunday	12/10/2014	Cameras On	B Response
Earlies	Monday	13/10/2014	No Cameras	C Response
Lates	Monday	13/10/2014	No Cameras	A Response
Nights	Monday	13/10/2014	Cameras On	D Response
Earlies	Tuesday	14/10/2014	Cameras On	C Response
Lates	Tuesday	14/10/2014	No Cameras	A Response
Nights	Tuesday	14/10/2014	No Cameras	B Response
Earlies	Wednesday	15/10/2014	Cameras On	E Response
Lates	Wednesday	15/10/2014	No Cameras	C Response
Nights	Wednesday	15/10/2014	No Cameras	A Response
Earlies	Thursday	16/10/2014	No Cameras	E Response
Lates	Thursday	16/10/2014	No Cameras	C Response
Nights	Thursday	16/10/2014	Cameras On	A Response
Earlies	Friday	17/10/2014	No Cameras	B Response
Lates	Friday	17/10/2014	No Cameras	E Response
Nights	Friday	17/10/2014	No Cameras	C Response
Earlies	Saturday	18/10/2014	No Cameras	B Response
Lates	Saturday	18/10/2014	Cameras On	E Response
Nights	Saturday	18/10/2014	Cameras On	C Response
Earlies	Sunday	19/10/2014	No Cameras	D Response
Lates	Sunday	19/10/2014	No Cameras	B Response
Nights	Sunday	19/10/2014	No Cameras	E Response
Earlies	Monday	20/10/2014	Cameras On	D Response
Lates	Monday	20/10/2014	No Cameras	B Response
Nights	Monday	20/10/2014	Cameras On	E Response
Earlies	Tuesday	21/10/2014	Cameras On	A Response
Lates	Tuesday	21/10/2014	Cameras On	B Response
Nights	Tuesday	21/10/2014	No Cameras	B Response
Earlies	Wednesday	22/10/2014	Cameras On	A Response

**Figure 2.** Treatment and control planner.

The random assignment communication was shifted from electronic posting the random on the daily briefing system to a low-tech, colored-paper solution. The random allocation was color-coded according to shift to allow easy referral and then posted in the parade room by the cameras, batteries, and workstations. Figure 2 is an example of what officers saw every shift when they first came on duty.

The intent was to make officers check the planner as part of their daily routine of getting ready for duty. By making it easy and accessible, the intention was to reduce the number of shifts lost due to contamination of control shifts by officers wearing cameras.

While the nudge had some effect, it was not a complete solution. During the first few weeks of the random assignment, the compliance rates were low. The analyst completed a review of the download data for the teams. The review identified instances where officers on a control shift were downloading videos where no cameras should be in use. At first, the compliance was low with multiple shifts each week showing contamination. However, with these small interventions and ensuring the issues were raised on a personal level with supervisors and the teams, the compliance rate improved.

A review in August showed that of the 94 shifts, 80 showed complete compliance with the random allocation. Of those that had been contaminated, the majority were one or two recordings where officers had overruled the allocation due to the nature of the crime or incident they were attending. While not perfect, the 85% compliance rate with random allocation showed clear improvement. The contamination was not, however, equal between treatment groups; it was biased against controls. Almost all (13 of the 14 contaminated shifts) of the contamination happened on control shifts, where officers had used the camera at least once. This equated to 28% of all control shifts (of the 46 assigned) during the month of August. The main reason for noncompliance given by the officers who did it was the need to gather evidence for a serious crime.

To address the issue of officers failing to dock their cameras in the correct position, a different nudge was used. Officers were fatigued after night shifts and gave little effort to recall the location of the camera docking station they had used 8 hr earlier. To address this pattern, the lead PC devised a simple color-code system, placing colored symbols on each camera and its unique docking station. At the end of shift, officers just needed to carry the correct color camera to the dock. The color-coding that completely solved the issue of evidence not being downloaded and multiple cameras failing to charge.

In addition, color-coding the docks also helped prevent random assignment contamination. Camera use could be falsely recorded as used by the next shift officers re-docking the cameras later. The main method to check compliance is to compare the download times against treatment and control shifts. Prior to the color-coding scheme, there was the potential for the data to show footage downloads in a control shift, which actually was the previous (and compliant) shift's footage. This nudge helped more than the other one. But as compliance issues persisted, nudges were not enough.

*A push.* The nudges worked well to assist officers who were supportive by easing the requirements of the experiment as part of the daily routine. They did not work well with officers who opposed the experiment and the use of BWV. The recommendations by Kotter and Schlesinger (2008) were now used. Moving from coercion to direction, the lead PC was able to quickly identify which officers were resistant to turning on the cameras. To identify these officers a review of the amount of time each officer had booked out BWV was requested in addition to how many times the camera had been used to record encounters with citizens. A review of the first 30 randomly allocated shifts found 24 of the 105 officers who had used the cameras less than 10% of the time they had booked the cameras out. Thirteen of these officers were from B Unit, so that is where more directive supervision would be targeted.

The compliance report was distributed to all the Inspectors, but the B Unit Inspector was instructed to personally account for their team's performance in a closed-door meeting. Such meetings are a rare occurrence, noted by all the other Inspectors. In the meeting with the B Unit Inspector, the issues were explicitly outlined and the Inspector was required to lead on improving the use by B Unit. All the Inspectors were instructed that the failure of officers to take out and use the cameras to be a discipline offense. Within days, the volume of footage and officer use had risen. Collecting the usage data allowed it to become performance information. No targets were set, as the desire was for the teams to record as much footage as possible. Table 3 shows the recording levels for August. B Unit was now the team using the cameras the most.

**Table 3.** Recording Levels for August 2014.

% Recorded	Number of Shifts on Duty	Total Hours Cameras booked out	Percentage Recording Time	Number of Officers Attending Incidents
Response A	10	1816	6.4	398
Response B	9	1534	20.0	390
Response C	11	1929	7.3	423
Response D	7	1305	12.1	298
Response E	12	1947	16.6	384

There was never a point in the experiment when all teams achieved above a 10% recording level. The impact of the Inspectors was critical in keeping the officers focused on using the cameras. During the trial, both response teams A and C had a number of temporary Inspectors cover the shifts due to sickness or annual leave. Periods of interrupted leadership resulted in decline in recording. The approach of direction and accountability did not work on A and C unit. In both cases, the turnover of temporary Inspectors frustrated attempts to hold individuals to account, as they would have moved post by the end of an individual's performance review period. The B, D, and E units all retained the same Inspectors, and all showed consistent levels of recording across the period.

Having an analyst provide timely data tracking camera usage by response teams empowered the first author to direct his attentions to what the data revealed. This information was delivered to all the response team Inspectors so they could compare each other. Both good and poor performance feedback was given face-to-face to ensure the maximum impact.

*Pressure to mainstream.* As the experiment evolved, the challenge shifted from getting the officers to wear the cameras to getting them *not* to wear them. Through July and August, officers repeatedly asked if exceptions could be made so that they could wear the cameras. The officers liked having the cameras and each team had numerous stories of where the cameras played a valuable role. The World Cup, serial complainers, murder scenes were all presented as requests to go outside the random allocation of treatment and control.

In response, the leadership team reminded response officers that if there is no difference between treatment and control, then the experiment would fail and the business case to buy the cameras would be lost. The fear of not having the cameras was now the greatest method of continuing to achieve compliance.

*Working with technology.* After the initial training was completed, the majority of the lead PC's time on this experiment was devoted to dealing with technology issues. On a weekly basis, he might have to deal with everything from a faulty camera to a software update to advising officers how best to use and present the footage as criminal evidence. Some of these issues posed the threat of undermining the credibility of the experiment and the first author. It was fortunate that the lead PC had an interest in technology and was able to solve all the issues quickly himself or with the support of Edesix. Local technological support was not factored into the experiment but it was vital to have the PC available to address these issues.

## Conclusions

### *Gaining Support*

The key issue for implementing this experiment was gaining support from all necessary quarters. Each of them could have had a veto, from police Headquarters to the Prosecution service to the



response team officers themselves. Ultimately, however, the most powerful veto is rank and file resistance.

Police resistance to change was both anticipated and encountered during this experiment. Visible leadership supported by continual engagement and feedback ultimately gained the support of the majority of the officers. Initially, time was invested with the teams to discuss the experiment and allow concerns to be raised. Measures were then put in place to address these concerns. After the test phase, innovative methods or “nudges” were utilized to make the experiment easy to work with and become part of officers’ daily routine. Raising successes within team briefing ensured that the profile of the experiment was kept high. Recruiting sergeants to represent their team allowed for the experiment to be championed when the author was not present.

Training was another key factor in generating support as the input allowed for the potential benefits of BWV to be explored. It ensured that both the importance of adhering to the research protocols, specifically random allocation and the benefits of the subsequent results were clearly explained. It developed familiarity with the cameras and was delivered in the same format as other training. This was an attempt to make the trial seem like an evolution of our tactics (Innes, 2013) and prevent police resistance to change. It also created another forum where the lead PC, rather than the first author, could explain and address the concerns—especially that officer footage would not be routinely scrutinized with the intention to discipline.

### *Maintaining Compliance*

When compliance could not be achieved through communication and negotiation, discipline was used. The review of officer usage conducted at the end of the test phase showed that 78% of officers were using the cameras for more than 10% of the time they wore them. That was good news, but it also helped to identify the targets for improvement. Accurate and timely data from the experiment facilitated conversations with the team Inspectors for both praise and improvement. Giving the Inspectors individual officer details empowered them to address the issue. They found some officers had valid reasons for low use. Some had been given duties within the station or who had been on annual leave. However, they also found officers who had no reasonable excuse. These officers were then subject to review and where resistant disciplined.

Compliance was best where the Inspectors were in post for the duration of the experiment. Continuity and consistency of leadership is “what worked.” The impact of tracking and accountability was lost when temporary Inspectors were used on the response teams. Inspectors who had not been with the experiment from the start had not gone through the process of developing ownership. Trying to influence these temporary Inspectors was frustrated by their short periods in post. The message of adhering to the random allocation and using the cameras needs reinforcing on a daily basis.

### *Learning in the Context of the Literature*

Previous research by Fixsen et al. (2005) and Kotter (2012) into change management has allowed for the creation of implementation models to be devised. These models have assisted in guiding the author through the core elements of change implementation. In this instance, the core components do not share equity of importance. The emphasis needs to be on communication, feedback, and influence. Of these communication was at the heart. This tool was used as a circular rather than linear process throughout the change program, to ensure that issues were quickly identified and addressed.

The research by Kotter and Schlesinger (2008) gives a framework for overcoming the predicted resistance by police officers (Innes, 2013). This was employed in the BWV experiment, this time in a linear fashion. Compliance and support was achieved by first educating and then supporting through



the implementation. Finally, direction was used through discipline to address the residual resistance posed by a core group of officers.

Previous research (Strang, 2012) in police organizations highlights the need to track and maintain experimental integrity in the delivery of treatment and control conditions. This study applied that lesson by tracking treatment conditions in a timely manner. The Inspectors were then held accountable for the compliance of their officers. The review of camera use in August showed that 15% of allocated shifts had evidence of noncompliance. All the instances of contamination were recording in control shifts. While there were low recording levels suggesting single-incident recording, they still contaminate the data and show the difficulties of maintaining experimental discipline in a policing environment. The accuracy of the data does however allow for these contaminations to be identified.

There is little specific guidance in the Literature for police leaders as they attempt to implement a scientifically robust experiment. The Rialto BWV study (Ariel et al., 2014) was field-managed by the Chief of Police. Coming from a position of total authority within an organization gives a different perspective to that of the Wolverhampton Study. The need to negotiate up the organization with higher-ranking decision makers brings a new dimension to our understanding of implementation. Understanding the need to influence and gain support of decision makers within the organization is not a factor when you are the agency's chief executive, but it is for mid-rank leadership. Yet there are also great advantages of working closely with response officers, who were actually more numerous in Wolverhampton than in Rialto.

Generating the support and maintaining the level of compliance within this experiment was only possible due to the first author's position within the senior leadership team of Wolverhampton. In this position, he was able to bring the permanent response team Inspectors to account through direct feedback and management. Even in this position, compliance was not completely achieved. Any attempt to manage compliance remotely or via the support of other senior leaders would have been a significant challenge. Owning the risk of a failed trial cannot be easily transferred to another senior leader. Running the trial in the area where you have direct authority allows the experiment's importance to be communicated directly, in an undiluted manner. It allowed for unforeseen issues or resourcing demands to be immediately addressed. While remote ownership could have created the danger of negotiating with other leaders who have little investment in the trial, direct ownership brought clarity to key elements of the trial such as resourcing and team accountability.

### *Policy Implications for Leading Experiments*

Evidence-based practice is growing in prominence within Western policing. There are a number of areas of practice that have come out of experimental research that are already within the mainstream of police tactics, such as hot spots policing. However, policing is a long way from the proliferation of evidence-based practice seen in medicine (Sherman, 2013). Police leaders have a key role to play in ensuring that their organizations are not only *utilizing* research in practice but are actively involved in *developing* research evidence. Working alongside academics and supporting their study is one way to achieve this. The other is for police leaders to actively run their own experiments in partnership with academics. The Wolverhampton BWV experiment has shown that a local senior leader in a large Western police force can successfully implement an RCT. Before this could become a mainstream activity, however, a number of issues would need to be resolved.

Training for police officers in relation to evidence-based policing and scientifically testing practice is currently the privilege of the few. This training should be incorporated into senior officer leadership development. Facilitated through the College of Policing, this would create a wider awareness of evidence-based practice and encourage leaders to support new research. This research centered on a local police leader to run the RCT into BWV. Consideration for a centralized specialist team who

are dedicated to developing and testing innovation could be far more effective than a locally run experiment. This would ensure a more effective process of academic scanning to identify innovative practice or equipment. It could ensure the stages of gaining authority were streamlined as the specialist knowledge developed. It would still require a local lead with position and motivation to ensure the essential combination of support and compliance. However, this is entirely possible if evidence-based practice and testing became a feature of every senior officer's development.

What has become clear through conducting this research is that a police-led RCT is extremely difficult but not impossible. This research gives an additional perspective of the challenges faced by a senior officer in a large police organization. It develops our understanding by supporting the proposition that a randomized control trial into the effects of BWV can be conducted by a middle manager and does not need to be led by a Chief of Police. The journey of a middle manager implementing an RCT into the effects of BWV has been documented and could provide guidance to others who might make the same journey.

The key lessons from this research are to plan, ensure the support of a skilled team, and have a communication style that can escalate from empathy, to persuasion, to direction. Within the team, an officer to manage the daily issues and training is paramount. The support of an analyst is vital to ensure that the trial lead is informed in an accurate manner to allow them to track the performance of the experiment and hold key personnel to account. Accountability can only occur where there is continuity of team Inspectors. Finally, a trial needs a leader who is visible and has the presence and attitude to ensure it can succeed in the face of resistance and apathy.

## Next Steps

This research has been an implementation study of the period from March through August 2014. The RCT itself ran until December 2014. The next step is for an analysis into the effects of police using BWV to be conducted. That analysis will add evidence to the growing understanding of the effects of BWV on criminal justice outcomes of arrests, rates of citizen complaints against police, and use of force by police. It will also contribute to the steady growth of randomized experiments in policing. The authors seem likely to do so as well, with future experiments that build on the evidence of implementation from the Wolverhampton BWV experiment.

## Authors' Note

Lawrence Sherman and Alex Murray are special editors for this article.

## Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: The first author received financial support for the research and authorship of this article from the College of Policing (UK) and West Midlands Police to attend the Cambridge University Police Executive Programme, where he conducted this research in part for a master's thesis in successful completion of the requirements for the MSt in Applied Criminology and Police Management at the Institute of Criminology, University of Cambridge.

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