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Marie Eneman

*University of Gothenburg, marie.eneman@ait.gu.se*

Dick Stenmark

*University of Gothenburg, dick.stenmark@ait.gu.se*

Jan Ljunberg

*University of Gothenburg, jan.ljungberg@ait.gu.se*

Erik Borglund

*Mid Sweden University, erik.borglund@miun.se*

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# REGULATING POLICE BODY-WORN CAMERA PRACTICE - A FOUR MODALITY PERSPECTIVE

*Research paper*

Marie Eneman, University of Gothenburg, Gothenburg, Sweden, marie.eneman@ait.gu.se

Dick Stenmark, University of Gothenburg, Gothenburg, Sweden, dick.stenmark@ait.gu.se

Jan Ljungberg, University of Gothenburg, Gothenburg, Sweden, jan.ljungberg@ait.gu.se

Erik Borglund, Mid Sweden University, Härnösand, Sweden, erik.borglund@miun.se

## Abstract

*Police authorities in a number of countries have recently introduced body-worn cameras (BWC). With the use of body-worn cameras, the police have gained access to new forms of wearable and powerful law enforcing technologies. The cameras enable collection of large volume of personal information and in some cases even sensitive information that must be managed and stored within the organisation in line with rules of law. As is often the case when technology develops faster than societal norms and values, a range of questions concerning issues related to regulation of these practises are still uninvestigated. Therefore, this paper will analyse what actually regulates individual police officers' body-worn camera practice. Empirically, we use the Swedish police as a case and our study is based on qualitative interviews. Theoretically we draw upon Lawrence Lessig's four modality model - law, norms, market, and architecture - and we conclude that i) law is considered important although law regarding BWC is still in its infancy, ii) while law and official directives have a more macro applicability, norms are developed and maintained more locally, iii) market regulate indirectly via availability and cost, and iv) architecture is not necessarily as self-executed as often stated.*

*Keywords: Body-worn cameras, Police authorities, Lessig's modalities of regulation.*

## 1 Introduction

Body-worn cameras (BWC) is a technology that has been introduced by police authorities in a number of countries in an effort to enhance trust, transparency, and accountability (Lee *et al.*, 2016; Eneman *et al.*, 2018). The cameras have emerged as a tool that may contribute in "civilising" the police as well as consolidating their legitimacy (Lippert & Newell, 2016). However, concerns are also expressed about what effects the technology may have on privacy and whether there is a risk that it may violate citizens' integrity (Lippert & Newell, 2016; Mateescu *et al.*, 2016). In addition, it has been argued that the police may learn to adapt to being filmed through engaging in "camera-friendly policing", *i.e.*, adjusting behaviour in an attempt to control how they are perceived by viewers of any recorded footage (Sandhu, 2016). The fact that these concerns to a high degree still await scholarly investigations has not prevented authorities in many countries from introducing the technology (Mateescu *et al.*, 2016).

Technology has always been an important change agent and its general effect on humanity over time is well documented in academic literature as well as in popular press (Cascio & Montealegre, 2016). Technological development has also been quite rapid, but looking specifically at information technology, these advancements have been unparalleled in speed. The pace of information technology progress has increased exponential for the last fifty years, as indicated by studies of Moore's Law (Nagy *et al.*, 2013). The introduction of new technology changes the way we live our lives and thus also affects us as professionals. Technology can both enable and oppress people at work (*cf.* Coovert &

Thompson 2014), but regardless of which, it has profound effects on work practices, including governance, routines, information flows, decision making, productivity, and performance, to name but a few (e.g., Brynjolfsson & Hitt 1996, Brynjolfsson & McAfee 2014; Murray, 2016).

Work practices are typically played out in settings governed by local rules and policies, which in turn need to be based on more central laws and directives. These regulations do often change and adopt at a slower pace than does technology, causing what is referred to as “the pacing problem” or “the regulatory disconnection” (Fenwick *et al.*, 2017). Reforming the regulatory framework to address increasing and growing regulatory concerns associated with disruptive technologies becomes increasingly important when the global dissemination of that technology is so rapid. In recent years, we have seen regulators struggle to keep up in a number of different areas, from e.g., genetically modified food to autonomous vehicles (Fenwick *et al.*, 2017). Two factors have been identified to contribute to this situation; legal frameworks are based on a static rather than dynamic view of technology and regulatory institutions are slowing down with respect to their capacity to adjust to changing technologies (*cf.* Marchant *et al.*, 2011; Fenwick *et al.*, 2017). Formal laws are developed particularly slowly and many legal and regulatory problems arise on the technological frontier (Bennett Moses, 2013; Murray, 2016).

Yet, work goes on in also in the absence of clear legal advice. This fluid and malleable situation, when new practices are enabled and before regulatory guidelines are in place, could be referred to a liminality, a state where the dissolution of order enables new customs to become established. It remains somewhat unclear though how employees manage to navigate in this regulatory liminality. What strategies do they employ when trying to interpret the new possibilities brought about by the digital technology and what mechanisms are available in their repertoire as they try to be as effective as possible whilst staying within the allowed action space? We seek answer these questions by studying how a new technology (in our case body-worn cameras) is introduced in a professional context (the Swedish police authority). The police as a case becomes particularly interesting since one of their primary objectives is to make sure that legal regulations are upheld in society.

With the use of body-worn cameras, the police now has access to new forms of wearable and powerful surveillance technology, and large volumes of information about individuals’ behaviour can easily be collected, which means that material consisting of personal information and in some cases even sensitive information must be managed and stored within the organisation in line with rules of law. Joh (2016) argues that the use of body-worn cameras within the police needs to be regulated and that the regulation should focus both on the actual use of the cameras and the collected material. Miller and Toliver (2014) report from studies in the United States that nearly one third of the Police departments claiming to be using body-worn cameras did not have a written policy related to the cameras. The main reason reported by management was that they lacked guidance on what such a policy should entail. This finding was repeated in 2016, when Lee and colleagues reported that only a very small number of the agencies, they examined had policies related to body-worn cameras that were publicly available. Furthermore, the policies that did exist focused on addressing the need of adapting body-worn cameras. Established policies on how to properly handle the cameras and the information they captured were still lacking in 2016 (Lee *et al.*, 2016). Due to the pacing problem described above, we expect this lack of regulatory guidelines to be a general concern that needs to be investigated empirically. The research question for this paper is thus: *What regulates individual police officers’ body-worn camera practice in the absence of explicit guidelines?*

To answer the research question, we have used the Swedish police as a case and conducted qualitative in-depth interviews with respondents from the police and from the Swedish Data Protection Authority. By doing so we start filling the gap of empirical studies investigating body-worn technology within the police. Theoretically, our analysis draws upon Lawrence Lessig’s regulative model with the four modalities law, norms, architecture, and market.

## 2 Lessig's modalities of regulation

In today's digitalised society the effects of law, as regulative mechanism, is challenged by other factors not least technology (Lessig, 2001). Lessig (2006) offers a model with four 'modalities of regulation', laws, (social) norms, architecture and markets, which according to Lessig is the key for regulators to control the actions of individuals whether it take place offline or online (Murray 2016). The model (see Figure 1) suggests that these four modalities regulate the activities of an individual and each of these modalities functions by acting as a constraint on the choices of actions individuals have. Thus, law constraints through the threat of punishment, norms constrain through the application of societal sanctions, architecture physically constraints and the market constraints through price and price-related aspects. Lessig's model demonstrates how these four modalities function individually or collectively on an individual's choice of actions with a 'pathetic dot' in the centre that represents the individual and then the four modalities, which regulate the actions of the individual (Lessig, 2006). It should be noted that the four different modalities are not independent of each other and thus not operating isolated from the other modalities. The modalities are interacting in a number of different ways, regulating directly or indirectly depending on the circumstances.

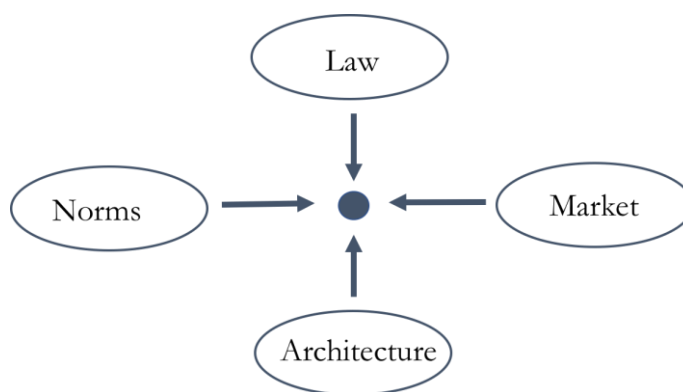


Figure 1. *Lessig's four modalities of regulation and how they affect the individual*

Figure 1 illustrates the four modalities law, norms, architecture, market and the 'pathetic dot' in the middle represents an individual. The regulation of the dot is the sum of the four modalities, any changes in one of the modalities will affect the regulation of the whole whereas some will support others and some will undermine others (Lessig, 2006).

### 2.1 Regulation by Law

Law regulates through the power of the state through the creation and implementation of legislations. Law is sometimes assumed to be a powerful mechanism that affect people to behave in certain ways, but as Lessig (1999) argue, this argument is somewhat problematic and based upon somewhat naive assumptions regarding the power of law. In reality, law is only as powerful as our subjective understanding of the likelihood of being caught, paired with our perception of the strength of the punishment. For example, many drivers are speeding when they think that no one sees, and should they get a ticket the fee is manageable (Murray, 2016). While the direct effects of the law may be failing for certain behaviour, the other modalities can provide an alternative approach for regulation.

### 2.2 Regulation by Norms

The second modality, social norms, regulates through the application of social sanctions. According to Lessig (2006) 'social norms constrain through the stigma that community imposes' and Reed and Murray (2018) suggests that this could take the form of criticism or ostracism. This indicates that norms to some degree are similar to law by threatening with punishment, albeit another form of pun-

ishment, *i.e.*, social sanctions from the surrounding social context/community (here work practice, organisation) and not from government as in the case with law. Even though law criminalises certain behaviour in society, it is assumed not only to be the legal imperative per se that prevents most of us from engaging in illegal activities. Most of us do not steal, not because we fear imprisonment but because we have been morally conditioned to view stealing as socially unacceptable. This highlights the existing mutual relationship between norms and law. Social norms affect the creation of laws and the laws in turn have effect upon norms. An illustrative example of this can be found in the creation of the Swedish law regarding corporal punishment of children that was enacted 1979 and which also succeeded to change the general attitude against the phenomenon in Sweden (Eneman, Gillespie and Stahl; 2010).

## 2.3 Regulation by Market

The modality of market constraints through price and price-related signals (Lessig, 2006). Markets do not sanction behaviour, but rather regulates choices directly when that choice is being made. That means that when your desire is to buy for example cigarettes, the price will affect your choice and thus act as a regulating factor (Murray, 2007; Lessig, 2001). Where law fail to have impact, the other modalities as for example market could have effect on the individual's behaviour. This is in line with the industry-solution predicted by Lessig's saying while the effect of legal controls is diluted by remoteness from law enforcement, other modalities are strengthened including market modalities.

## 2.4 Regulation by Architecture

The modality of architecture regulates via the environment, which can refer to 'the way the world is or specific aspects of it are' - or designed and built environments, *i.e.*, hence the use of the term architecture (Reed and Murray, 2018). Lessig (2006) argues that the modality of architecture does not function in the same way as law and norms in that sense that an individual cannot ignore the constraint and wait until later to suffer the consequence. Unlike the other three modalities, architecture always regulates individuals' actions directly, for example a door is locked whether or not you wish to go through it. Law, norms, and markets as modalities are dependent on a further step, in form of human judgement by a person or a group of persons, before they are executed. Architecture differs in that it is 'self-executed', *i.e.*, the execution takes care of itself whereas *e.g.*, law needs law enforcement agencies such as police, prosecutors, and courts to have effect (Lessig, 2006). For norms to have effect it is required that individuals are aware of what is regarded as socially acceptable behaviour in the specific context and follows that, otherwise the surrounding will react with social sanctions. Another difference is that law and norms are dependent on an internalisation process that makes it less likely that people would violate them. This is not the case for architecture. In this paper the architecture modality refers to the involved technology, *i.e.*, the body-worn cameras, and its feature as an infrastructure that afford and/or constrain certain behaviour for the individual police officers. Lessig emphasise self-execution, and argues that this aspect distinguishes architecture from the other modalities. Lessig (1999) acknowledged that there is no certainty that a technology would force a certain behaviour, but it would rather have an impact on it. The regulative force of technology is closely linked to its use and implementation (Hosein *et al.*, 2003), thus it constrains certain actions and affords other.

# 3 Research Design

## 3.1 The Swedish Police as a case

In this paper we are interested to understand what regulates individual police officers' use of body-worn cameras and our study is based upon the Swedish police as a case (Walsham, 1995). The Swedish police is a public authority with a broad societal mission aimed at reducing crime and increasing security in society through preventive, interventive, and investigative activities (Manning, 2008). This implies that the police constitute a concrete case of government work that must relate to a variety of

requirements for a responsible and lawful work. As a case, this provides us with access to a rich material allowing us to examine different aspects, for example technological affordance and regulative mechanisms. This paper is part of a larger ongoing study investigating different perspectives related to the implementation, organisation, and use of body-worn cameras within police authorities (Eneman et al, 2018a; 2019).

### **3.2 Data collection and analysis**

This study has been designed as a qualitative study where interviews have been conducted with 20 individuals during 2018 (Silverman, 2014). The majority of interviews, 17, were conducted with police officers within the Swedish police and the remaining three were done with lawyers at the Swedish Data Protection Authority (DPA). All of the 17 police officers included in this paper have experience of body-worn cameras. They work in different regions in Sweden, have different positions and responsibilities, and cover different levels within the police force - operational as well as strategic. The three lawyers from DPA have experience from working with inspection of body-worn camera use within the police. The DPA is a public authority organised under the Ministry of Justice with the task to protect the individuals' privacy in the information society. They also handle complaints and carries out inspections and ensures that new laws and ordinances protect personal data in an adequate manner.

The interviews were semi-structured and based on an interview guide designed with a number of broader themes that stimulated the respondents for in-depth discussions, follow-up questions and thus also provided for perspectives and ideas that we did not anticipate when we created the guide. We used the same interview guide for all the 20 interviews with the police officers and the lawyers. All the interviews with the police officers were conducted at their workplace and the interviews with the lawyers at the Swedish Data Protection Authority at their office, and the interviews lasted between 60 and 120 minutes. Before each interview, we gave information about the study and asked for permission to audio record, which all interviewees granted. Once the recorded interview material was transcribed by a transcriptions agency, the material was read and re-read and notes were made (Silverman, 2014). In the next stage the material was structured and coded as an iterative process (Coffey & Atkinson, 1996) in relation to Lessig's four modalities of law, norms, market, and architecture. All authors participated in this process, and since the research team is geographically dispersed, most of the work was carried out using a web-based co-authoring tool and subsequently discussed during video conference meetings.

## **4 Results from the field**

The results are structured in line with Lessig's model with the four modalities: law, norms, market and architecture. For each of the four modalities stipulated by the model we use our empirical material to illustrate their role in regulating individual police officers' use of body-worn cameras.

### **4.1 Law**

The modality law regulates through legislation and the threat of punishment and aims also to act as a crime preventive measure. An obvious theme that was brought up when interviewing the three lawyers at the Swedish Data Protection Authority (DPA) regarding how police officers' use of body-worn cameras within the Swedish police is regulated, was that the law currently offers insufficient support. They explained that there had been a number of commissions suggesting that this new practice should be regulated by law but this has not yet happened. One thing is particular that prompted the need for proper legislation was, according to the DPA lawyers, the fact that the cameras enable large-scale collection of personal information, in some cases even sensitive personal information. Unlike previous surveillance cameras, body cameras are carried around and may be brought into people's houses and other otherwise private areas. In addition, body cameras record also audio, which adds to the sensitivity. The need to protect individuals' integrity was thus emphasised by all the three lawyers:

*We think it is desirable that this is regulated by law since it constitutes such an intervening action on integrity. You record both picture and sound and sound makes it extra sensitive for integrity. (DPA 2)*

The lack of clear routines and guidelines may have severe consequences for the police officers as it places large responsibilities on them to make correct on-the-fly interpretations regarding what legal leeway they have to use their cameras. If it is later concluded that they have used the cameras inappropriately, the officers risk being charged with misconduct. The three lawyers were therefore unanimous in their view that rules and guidelines must be formulated and enacted to regulate body-worn camera use and guide police officers' everyday practice.

*It places a large responsibility on the individual police officer when he presses the [recording] button ... the absence of legal support places extra-large demands on the police authority to produce clear routines and guidelines for their officers so they know how to conduct their work. (DPA 2)*

The knowledge concerning different laws, national and local guidelines and routines differed somewhat amongst the interviewed police officers. Some officers reflected upon the fact that not only do they represent an authority and must abide by existing legislation but that their work consists of the exercise of authority. Therefore, the police need to follow, and have knowledge about, legal rules. Still, this was not always evident in the answers given by the respondents. As stated by a police officer:

*You need to be careful, because you cannot just film. We are an authority ... and that means that you should know what law you are dealing with ... I will not gabble laws to you, because I'm not that familiar with the laws. (Police 12)*

The same police officer continues to discuss the importance of clear guidelines informing what you are allowed and not allowed to do since the work within police authorities should be organised and conducted in line with rule of law. It is emphasised that when police officers act wrongly, when conducting work, there may be severe consequences for themselves:

*[...] you need to know what you are allowed to do and not, because otherwise it is easy to do wrong and it causes quite large consequences for us as police officers if you do wrong. (Police 12)*

When talking about regulating aspects of the use of the body-worn cameras one of the police officers directly expressed that there is a guideline available informing how the cameras are allowed to be used. The dimension of approval is emphasised by the respondent as a critical aspect and a major difference compared to stationary camera surveillance. It is interesting to note that the police officer spontaneously when discussing routines and guidelines refers to the major difference that the use of hand-held cameras (and body-worn cameras) cameras don't require any permission to use since it is not regarded as camera surveillance:

*We do have a guideline about how we are allowed to use it and you don't need to have an approval. Because a hand-held camera is not considered as camera surveillance. That's a big difference so, you don't need any permission. (Police 11)*

Even though that a few respondents expressed awareness about routines and guidelines, it was obvious that the majority were uncertain about these aspects. One respondent discussed that legislation, routines and guidelines are not following the same pace as the introduction and use of new technology within the police organisation:

*It is a bit behind regarding how these (body-worn cameras) should be used, how they should be regulated. Well, it feels like all this is lagging behind a bit. (Police 9)*

Some of the respondents told us that they have received some form of training lasting between from one hour up to a half day before they started to use body-worn cameras. The content seemed to be focused more on the actual handling of the camera and not so much on the legal aspects of filming. One officer describes that he understood some of the content of the education as you should use your common sense when conducting work, which is closely connected to the concept of professional discretion:

*[...] it is called education, but it is more of a short-short review on how the camera really works and then maybe only two minutes about some form of law around it. [...] What I remember from that is just 'film as much as you can' so I interpreted that as it is common sense that applies. (Police 7)*

In the light of the insufficient legal status and lack of clear national routines and guidelines, local initiatives have been made to develop routines and guidelines. The police in one region described that they have formulated their own guidelines for the use of body-worn cameras. Soon after they had purchased a number of cameras, they faced legal uncertainties and didn't know how to proceed. Therefore, the local police took the initiative, together with lawyers in the police organisation at the regional level, to create guidelines for their practices regarding body-worn cameras:

*[...] we purchased a number of cameras, they are quite expensive and then we immediately ended up in these difficulties, a legal mess, damn what are we going to do with this now? They should not be mixed with each other and this and that. So, we draw up a guideline here together with our lawyers on how we should handle it ... so we made our own guideline so to speak on how to practice this. It was the first in Sweden, I think, that was developed like that. Our chief lawyer took part in drawing this up with an administrator here. (Police 1)*

According to the respondents in this region, the same region has now taken a further local initiative by creating a steering group related to body-worn cameras. In addition to developing routines and guidelines related to the practical use of body-worn cameras, the group will also consider new legislation related to these new cameras. As recognised in this study, the legal rules, legislation, routines and guidelines, regarding the use of body-worn cameras still seem to be in its infancy and therefore the legal imperative could not be regarded as clear.

## 4.2 Social norms

The modality norms refer to when individuals' behaviour are regulated through social norms and the application of societal sanctions within a group or a practice. The respondents talked about different norm systems in relation to the use of body-worn cameras within the police, and the interview data shows that police officers have created their own norms and values within their work practices. These norms can be seen as a set of rules within their practices and defines what is allowed and what is not.

According to our respondents, the existing regulations are vague and open up for individual interpretations and the officers tend to rely on gut feelings and their own experiences when it comes to activate the cameras or not. Attitudes towards the cameras also varied amongst our respondents. Some officers compared wearing a camera with wearing other given tools, such as weapons, handcuffs, or OC-spray. They meant that you wear the tools you have been given, without too much questioning. Other police officers, however, expressed a more sceptical attitude towards wearing a camera, partly since camera use, unlike use of other equipment, is not subject for clear guidelines. Another dimension of the scepticism refers to the police officers' discomfort of being subject for surveillance while conducting work. Most officers therefore agreed that it can be rather unclear when to activate recording during work, *i.e.*, when to actually use the camera. Decisions about activating the camera were based either on the kind of job they were doing or where the job took place geographically. The police officers expressed that it was their own experience that guided them many times when to use or not to use the camera. Some of the officers expressed that it would be easier if a commanding officer gave a direct order whether or not to use the camera.

There is also a new awareness about the evidential value of video recordings. Amongst the interviewed police officers many stated that the evidential value the legal system put upon video recordings almost force the officers to record everything. Many indicate that the record-



ing is more worth than a witness statement from the police. This has prompted the officers to be more active in using the camera.

*Yeah, it is one thing that is raised now and then. If there are no pictures of the situation, then it never happened [...] If there exists no forensic evidence but just different witness statements, they tend to be more reluctant to prosecute. (Police 1)*

When back at the office, if a police officer has filmed something and wants to use the recording for any purposes, he/she needs to request the recording. Recordings that have not been requested for 60 days are then deleted. However, officers quite often feel that their cameras have captured things that would be “nice to have” but not serious enough to motivate a formal request. They have therefore developed a praxis to view the content on their phone before the camera is docked and the content is uploaded. By viewing the material on the phone, the officers can use the phone’s print screen function to capture images from the video recording and combine that with notes for their own use. Even if the quality of the video is reduced when viewed on the phone, it is often good enough for individual officers’ purpose.

In sum, three norms are presented above that affect and implicitly regulate the individual police officer’s use of body-worn cameras. The first relates to when and where to activate the camera, the second refers to the societal norm that digital evidence is given more weight in court, and the third relates to more organisational where the recordings could also be usable for other purposes.

### 4.3 Market

The introduction of body-worn cameras within Swedish police is a relatively new and ongoing phenomenon on which the market has had a decisive albeit implicit impact. According to our respondents, the Swedish police force has been experimenting with cameras since at least six years, and when these initiatives started – often sprung out of local initiatives – each actor had to make do with what was available on the market. The body-worn cameras available at the time were typically designed for the adventure/recreational business, and for outdoor activities such as mountain biking and hang-gliding.

*I think it was at a rather local level you started with these GoPro cameras, long ago. Each policing area bought stuff on their own, as I understood it. Like, ‘We see this need and here’s a technology. It’s not for police use but for the adventure market, but we can use it anyway’, and they went ahead and purchased. (Police 4)*

So during the early stages, the police was dependent upon what was available on the market and our respondents explain how they played around with different sorts of equipment, based on what they could lay their hands on. As the use and the interest in cameras grew, Swedish police started an evaluation of their current practice, but there was such a high demand for cameras that the evaluation had to be rushed so that more cameras could be purchased and distributed. One of our officers explains:

*Out there, others wanted to have this camera solution as well, [...] so we had speed up the evaluation so we could get some cameras out, you know. And we tried different..., GoPro released a new model and there were others. So we had to borrow a few cameras, it was some miscellany equipment, you know. (Police 1)*

Early adoption was clearly characterised by a make-do-with-what-you-have strategy, where different brands and models were mixed. This meant that cameras had different functions and features and no unified handling could be established. Another – and related – aspect brought up by the respondents was cost. Adventure cameras are not cheap and since most initiatives were launched locally, each department had to finance their own equipment, which limited the number of devices they were able to purchase. Although the long-term goal was for each officer to have his or her personal device, this could initially not be realised, which itself generated a number of undesired consequences.

*Equipment that isn't personal has a tendency to disappear, or break down, no-one takes responsibility, and they are not handled properly. I think it would have been better with personal devices. But it's obviously a cost issue. But I think that's the long-term idea and I think that is good.* (Police 2)

Our respondents explain that Swedish police is now starting to standardise their camera equipment and are at the same time moving away from the adventure cameras towards devices more specifically designed for police work, since such cameras are now becoming available. Our respondents thought that equipment specifically designed for police work had many advantages, in terms of user interaction and field handling but also when returning to the station for uploading and recharging.

*So there's this provider of law enforcement and security equipment that is quite large in the US, I believe. And they've provided and produced equipment there, so there you already had a police thinking that makes it fit in quite well. It is robust stuff, it is impact-resistant and it is user-friendly, and several aspects that are good, so... [...] Instead of taking something from the civil market and try to squeeze it here and there. We use it every day and then it's every... every little corner you can round off where you don't have to get stuck, can do pretty much. And it's pretty nice at the end of the shift, just be able to dock it and then it is done. Then it solves all that, by itself. So that's a big advantage.* (Police 4)

So in sum, availability and cost of purchase were two market factors that had a decisive regulatory effect, albeit in an indirect fashion.

#### 4.4 Architecture

The regulative force of a camera emanates from its capability to document events, and the control over the functionality related to this capability. Furthermore, the body worn cameras have a dual regulative force. They regulate the behaviour of both the wearer of the camera and the persons being filmed. One particular dimension of camera technology is its intrusiveness, *i.e.*, how much it interferes with a situation by just being visible as a camera. An ordinary camera is very intrusive: a “GoPro” camera is mounted on a special belt, while the new Axon cameras are fitted into the uniform by a magnet, and is more like any artefact that is part of the uniform. Being part of the uniform makes the camera less visible and hence less intrusive. For the public this may make it more accepted, and for the wearers of body cameras their use would be more internalised.

*People didn't even notice that we had cameras. There were so many other things to look at, our equipment and us, that it kind of blends in with the uniform.* (Police 17)

The newer cameras may be adjusted so they clearly indicate if the camera is in recording mode or not, by a small flashing light. In some situations, this is good, since being aware that camera is running would calm down heated situations. In other situations, it would hamper police work, for example in situations where just the suspicion of being on video would ruin the possibility to build relations with people.

*I am a local area officer who is supposed to hang out in the hoods but no one would talk to me [if I were filming]. “Do you film me? Are you recording?” They would just walk away, and I wouldn't be able to build any trust or relations. It is impossible, completely impossible for me to use a body camera.* (Police 15)

It is the individual police officer that controls if the camera should be switched on or not, and if the recording status should be visible for the public.

*Because these are all functions you can turn off, I mean all indicators and lamps and such, just so that you can record without anyone knowing.* (Police 15)

When it comes to accessing the film, the wearer of the camera can look at the film (via his or her mobile phone) as long as it is not uploaded to the server. However, in the new cameras there is no possibility to edit the contents, as was the case with the GoPro cameras. This creates an awareness of the behaviour when the camera is on, since officers are anxious that private conversations or bad language in a stressful situation might be recorded. After the film is uploaded to the server, the individual police

officer has no access or control over the film or who will watch it. This also creates some anxiety, according to some respondents.

There is also a duality in the "truthfulness" of the film as medium. On the one hand, it documents a situation and persons' expressions of emotions that could be difficult to capture fully in a textual report. Many informants mention this as especially important in investigations of domestic violence, where victims tend to directly give a rich emotional picture of what has happened, while later changing their mind and withdraw their testimonies. In that case, the camera captures the situation. On the other hand, from the perspective of the police officers, a video is not always perceived to convey fully the impression of the situation, when later watched in the safe environment of the home office:

*You don't know how it is out there, when you're in the middle of it. I am worried that if you only view it on film, you don't get the feelings and the impression of the situation as the police officer experience it. (Police 14)*

In sum the architecture modality of body cameras is not self-executed as in Lessig's examples, e.g. the low bridges of Long Island blocking buses. The regulative force of the camera technology and its impact on individual police officers use of the cameras is highly related not only to the camera functionality, but to the whole infrastructure surrounding the cameras

## 5 Discussion

The police constitutes a clear example of an organisation that is exposed to the requirement to develop skills and practices that ensure responsible and lawful enforcement in a continuous manner. There is a strong belief that the introduction and use of digital technology such as body-worn cameras within police authorities will lead to more efficient work and improve transparency and accountability. It is however important that police officers' use of the new technology is legally appropriate and responsibly regulated (Joh, 2016). It is obvious from our study that law has limited regulatory effect on the use of body-worn cameras since the legal rules surrounding the camera practices are unclear and insufficient. The lawyers described that the legal support regarding body-worn cameras is currently non-existent and many of the police officers expressed noticeable uncertainty regarding the existence of legislation and guidelines related to BWC use.

The importance of protecting integrity was emphasised by the lawyers since the cameras enables mobile and powerful surveillance that can be used for large-scale collection of personal and sensitive information consisting of both picture and sound. The digitalisation has enabled new and improved forms of surveillance systems and body-worn cameras can be used to monitor the surrounding of citizens as well as the police's own behaviour. It is mentioned that law is lagging the introduction of the cameras within the police force, and this gap between adequate regulation and modern technology is well-known (*cf.* Fenwick *et al.*, 2017). Many of the police officers mention that they have taken part in some form of training activity, but it does not seem to have made any lasting impression since they don't remember much of the content. This indicates a need for a more thorough educational activity related to the BWC use, where the legal boundaries surrounding use receives much more attention.

In addition, our material also shows that in the lack of national regulations, local initiatives have been made to design and enact guidelines that should guide the BWC practice. On the one hand this could be seen as an interesting attempt to try to solve the regulation dilemma in a legal and responsible way, but on the other hand it is not desirable that different police regions develop their own, potentially different, regulations that should guide their actions when conducting work. The Swedish police is *one* authority and they should be regulated in a consistent way. Organisational challenges related to the large size of the police organisation were highlighted by the lawyers when they discussed the task for the police force to implement routines and guidelines within the organisation and secure that all police officers use them.

To sum up law as a regulatory force, the current failure of law does not mean that the use of body-worn cameras within the police could not be subject to appropriate and responsible control. As Lessig (2006) points out, one should not make the mistake to confuse how something is currently regulated

with how it can be regulated in the future. For while the direct effects of the law may be failing, the other modalities of norms, market and/or architecture may provide an alternative means of regulation of the camera practice (Reed & Murray, 2018).

In the implementation process of the body-worn cameras it is noticeable that several norms have been regulating the practice of body-worn camera use within the police. Of the three mentioned findings above, two are definable as related to the police work practice and one is related to the wider legal system. When and where to activate the camera is closely related to the police officers' work, as the decision will in some way affect the outcome of the work. One agreed upon police norm is to serve and protect, and that norm influences the need to establish a new norm about when to activate the camera, as the official regulations do not guide the police in this question. Officers want to do a good job, and the body-worn camera is a tool that in many situations helps them to perform with high quality. The new norm developed to support when to start a recording relies on police experience and guides the officers when to activate the camera. It is also found that dependent of where you work geographically, there are local norms established that become the regulation applied for one workgroup of police officers.

When police officers use the print screen function to get their hands-on parts of the recording that could be useful for them in future work, this is a norm that probably also is driven by the ambition to do a good police work. As bricoleurs (Lévi-Strauss, 1966) the police collect "nice to have" images for future use. The activity to use print screen is also an effect by the existing architecture of the entire BWC system that aims to ensure a secure and trustworthy management of the recordings. Therefore, individual access and use of the recordings are regulated and print-screen workaround is needed.

The third example of norms that regulate, is also about the goal to do good police work. But the norm has its roots in the entire legal system, where digital recordings have become almost a necessity in courts to get a conviction. The police officers know that they need to have every situation recorded if they are to be successful in doing good police work. One can summarise that old norms - when still applicable - regulate some of the practice of body-worn cameras, but that new norms are established to fill the gaps created by the new technology.

When it comes to market as a regulatory force, we note that the effects are primarily indirect and caused by availability and cost. The individual police officer's daily use of his or her body-worn camera while patrolling is obviously not directly regulated by market forces; they go about their business as best they can with what tools they have. However, market certainly has an indirect regulatory effect in that only features available in the market can be purchased and each such item is linked to a cost. Even though individual officers may not worry too much about the price tag, it does become a factor for those who have to deal with budget issues. Many of our respondents mentioned that they did not have enough cameras to equip everyone who expressed an interest and that certain geographic areas had to be prioritised. This fact that only some officers in some regions had cameras had a decisive impact on the emerging practice.

The initial lack of custom-build police cameras also regulated use. Adventure cameras are intended for individuals who typically can plan their events and go over the settings in advance to fit the specific activity and conditions in question. There is probably no need for a unified way to upload footage or to share videos; each user attends to these matters as they see best and according to individual needs. Police work is quite opposite; it is difficult to know in advance what will be filmed and a unified approach is highly desired. Having to deal with what the market provides make unified handling more difficult to implement and require the police officers to learn a lot more about the devices than simply how to turn it on and off. As a result, early practice is shaped more by availability and less by conscious design decisions. However, the market is also influenced by the police's camera usage. As soon as there is a demand, there is an opportunity for someone to provide a supply, and a market for cameras specifically designed for law enforcement situations has emerged.

So far, we have discussed the external market or the supply-side. It was also evident that the internal or demand-side of the market also could regulate usage. When the interest exceeded the number of resources available, not everyone could be invited to participate. This lead to all sorts of prioritisa-

tions; on a macro scale, management had to decide what cities or geographical areas to equip, and on a micro scale, local team leaders had to choose what individuals in the team to equip.

In sum, the modality of market constraints through price but also through availability. In our material we have identified that the market modality could be used to understand the logic why certain regions within the Swedish Police have purchased a larger volume of cameras while some others have few. We have also discerned differences of the purchased technology, *i.e.*, some regions have cheaper camera system with less functionality while some other regions have been able to buy more advanced camera technology. As shown above the technology and its features affects the police officers' behaviour and the organisation that needs to handle the introduced technology.

Body worn cameras is a regulative technology that can be used to enforce the law, *e.g.*, by using video footage in court. It also has an impact on people's behaviour, by adhering to norms when they know that the camera is on. At the same time the camera technology and its usage is itself regulated by the four modalities. The functionality of the BWC and their surrounding infrastructure in terms of usability, storage, and access rights, constrain or enable certain camera practices. The cameras and their functionalities are also embedded in everyday policing practices, were the camera could support or disturb that practice. Compared with earlier camera models, the new cameras provide a harder technical regulation, in terms of restricted access and editability.

To conclude so far, it is evident that Lessig's four modality model can be useful to understand regulations. In our case it has enabled us to move beyond pure law as a regulative mechanism, and we have found that in the absence of clear legal advice, other mechanisms play a decisive role in regulating early and emerging practice. However, it is also clear that our respondents, all of which are active in law enforcement agencies, think that explicit guidelines regarding the legal leeway is needed, and must eventually be introduced.

## 6 Conclusions

The aim of this research was to understand what regulates individual police officers' body-worn camera practice in the absence of explicit guidelines. Our study contributes to the existing literature with empirical insights on regulating factors related to BWC use. The police constitute an interesting case since it can teach us how the logic that shapes the requirements of public authorities also affects the way the employees organise themselves as a legal authority.

Further, as demonstrated, Lessig's four modality model was useful as a theoretical lens to help us examine different aspects of regulation that *de facto* govern individual police officers' use of body-worn cameras. Building on Lessig's work and the Swedish police as a case we contribute with knowledge about different dimensions of regulation related to the use of body-worn cameras. Despite having encountered certain limitations with the framework itself, it has been useful since it enabled us to analyse regulatory mechanisms other than only law, which is otherwise often in the foreground in the discussion of regulation.

Our findings can be summarised as follows:

- We conclude that law is considered important although law is in its infancy and therefore the legal imperative could not be regarded as clear in relation to the body-worn camera practise. The absence of national guidelines may spark local initiatives that can later create problems if they are too heterogeneous.
- Regarding norms, we find that while law and official directives have a more macro applicability, norms are developed and maintained more locally, and norms may emerge differently in different contexts.
- Market has shown to regulate primarily in an indirect manner, since cost and availability are dealt with at an organisational level, and not by individual officers.
- Architecture, finally, is not necessarily as self-executed as in Lessig's examples. The regulative force of the camera technology and its impact on individual police officers' use of the

cameras is highly related not only to the camera functionality, but to the whole infrastructure surrounding the cameras.

In this paper we have focused solely on the specific practice of the individual police officers' use of body-worn camera. There are, however, other related practices that also needs to be investigated from a regulative perspective, such as how to store and manage the personal and sometimes even sensitive information that the cameras capture. More work in this area is thus required.

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### References

- Bennett Moses, L. (2013). "How to Think about Law, Regulation and Technology: Problems with 'Technology' as a Regulatory Target", *Law, Innovation and Technology*, 5:1, 1-20.
- Brynjolfsson, E. and Hitt, L. (1996). "Paradox lost? Firm-level evidence on the returns to information systems spending". *Management Science*, 42(4):541–58.
- Brynjolfsson E. and McAfee, D. (2014). *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*. New York: W.W. Norton.
- Cascio, W. F. and Montealegre, R. (2016). "How Technology Is Changing Work and Organizations", *Annual Review of Organizational Psychology and Organizational Behavior*, 3:349–75.
- Coffey, A. and Atkinson, P. (1996). *Making sense of qualitative data*, SAGE Publications Ltd.
- Coovert, M.D. and Thompson, L. F. (2014). "Toward a synergistic relationship between psychology and technology". In Coovert & Thompson (Eds.) *The Psychology of Workplace Technology*, New York: Routledge, pp. 1–17.
- Eneman, M., Ljungberg, J., Rolandsson, B., and Stenmark, D. (2019). "Being filmed at work: How police perceive citizens' use of cameras to conduct sousveillance", *Proceeding of the 24th UK Academy for Information Systems International Conference*. Oxford, UK, 2019.
- Eneman, M., Ljungberg, J., Rolandsson, B., and Stenmark, D. (2018). "Encountering camera surveillance and accountability at work—case study of the Swedish police", *Proceeding of the 23rd UK Academy for Information Systems International Conference*. Oxford, UK, 2018.
- Eneman, M., Gillespie, A., Stahl, B. (2010). "Technology and Sexual Abuse: A Critical Review of an Internet Grooming Case", *Proceeding of the International Conference for Information Systems*, Saint Louis, Missouri, USA, 2010.
- Fenwick, M. D., Kaal, W. A. and Vermeulen, E. P.M. (2017). "Regulation Tomorrow: What Happens When Technology Is Faster than the Law?", *American University Business Law Review*, 6(3).
- Hosein, I., Prodromos, T. and Whitley, E. (2003). "Regulating Architecture and Architectures of Regulation: Contributions from Information Systems". *International Review of Law, Computers and Technology*, 17(1).
- Joh, E. (2016). "Beyond Surveillance: Data control and body cameras", *Surveillance & Society*, 14(1): 133-137.
- Lee, J., Wang, J., Cliff, G. and Rao, H.R. (2016). "Management of Digital Evidence: Police Judgment about ethical Use of Body Worn Camera", *Proceeding of 37th International Conference on Information Systems*, Dublin, Ireland, 2016.
- Lévi-Strauss, C. (1966). *The savage mind*, University of Chicago Press.
- Lessig, L. (2006). *Code Version 2.0*, Basic Books.
- Lessig, L. (2001). "The Law of the Horse: What Cyberlaw Might Teach", *Harvard Law Review*, 113, 501-546.

- Lippert, R. K. and Newell, B.C. (2016). "Debate Introduction: The Privacy and Surveillance Implications of Police Body Cameras", *Surveillance & Society*, 14(1): 113-116.
- Manning, P. K. (2008). *The Technology of Policing: Crime Mapping, Information Technology and the rationality of Crime control*, New York, London, New York University Press.
- Marchant, G. E., Allenby, B. R. and Herkert, J. R. (eds) (2011). *The Growing Gap between Emerging Technologies and Legal-Ethical Oversight*, Vol 7, Springer: International Library of Ethics, Law and Technology.
- Mateescu, A., Rosenblat, A. and boyd, d. (2016) "Dreams of Accountability, Guaranteed Surveillance: The Promises and Costs of Body-Worn Cameras", *Surveillance and Society*, 14(1).
- Miller, L., and Toliver, J. (2014). "Implementing a Body-Worn Camera Program: Recommendations and Lessons Learned", Police Executive Research Forum. Washington, DC: Office of Community Oriented Policing Services.
- Murray, A. (2007). *Regulation of Cyberspace*, Oxford University Press.
- Murray, A. (2016). *Information Technology Law: The Law and Society*, Oxford University Press.
- Nagy, B., Farmer, J. D., Bui, Q. M., and Trancik, J. E. (2013). "Statistical Basis for Predicting Technological Progress". *PLoS ONE*, 8(2)
- Reed, C. and Murray, A. (2018). *Rethinking Jurisprudence of Cyberspace*, Edward Elgar Publishing.
- Sandhu, A (2016). "Camera-friendly policing: How the police respond to cameras and photographers", *Surveillance & Society*, 14(1): 78-89.
- Silverman, D. (2014). *Doing Qualitative Research*, SAGE Publications Ltd.
- Walsham, G. (1995). "Interpretive Case Studies in IS research: Nature and Method", *European Journal of Information Systems*, 4(2), 74-81.