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To cite this article: Anthonie R. Drenth & Ronald van Steden (2020) Everyday patrol work for a data-driven flying squad: advancing theoretical thinking on police craftsmanship in interacting with civilians, *Journal of Crime and Justice*, 43:4, 486-501, DOI: [10.1080/0735648X.2020.1722202](https://doi.org/10.1080/0735648X.2020.1722202)

To link to this article: <https://doi.org/10.1080/0735648X.2020.1722202>



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Published online: 31 Jan 2020.



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# Everyday patrol work for a data-driven flying squad: advancing theoretical thinking on police craftsmanship in interacting with civilians

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## ABSTRACT

From the 1960s onwards, police scholars have accurately documented what patrol officers do when carrying out their job. Their work has been supplemented by miscellaneous publications on police culture, police working styles, and factors influencing police decision-making. Although scholars do recognise the significance of professional freedom, what takes place within this discretionary space to manoeuvre has never been fully studied, especially within the context of predictive policing. We aim to open up the 'black box' of police discretion by offering an empirical study on the everyday patrol work of a predictive policing flex-team (a kind of data-driven flying squad) in Amsterdam, the capital city of the Netherlands. Building on previous literature and on our own insights, we advance a theoretical model of police craftsmanship with particular interest in patrol officer-civilian encounters. This model consists of five, partly overlapping, routine actions: searching for relevant clues, defining a situation, anticipating a situation, dealing with civilians and closing a situation. A deeper insight into such routines will enable patrol officers to reflect on what 'good policing' entails and how to further professionalise their occupation against the complex backdrop of micro-grid crime prevention technology.

## ARTICLE HISTORY

Received 13 March 2019  
Accepted 14 January 2020

## KEYWORDS

Police craftsmanship;  
discretionary space;  
predictive policing

## Introduction

Although politicians and the general public might believe otherwise, patrol officers are not just fighting and preventing crime – quite the contrary (Bayley 1994). As ethnographic studies show, apart from information gathering, criminal investigation, administrative duties, foot patrol and traffic regulation, they spend much time on multifarious requests from the public, usually involving (emergency) assistance, low-level problem solving, peace-keeping and, if necessary, public order maintenance and law enforcement (e.g. Mastrofski, Parks, and Reiss et al. 1998; Smith, Novak, and Frank 2001). According to Bittner, this kind of police work is not governed by a strict legal mandate or organisational controls but requires craftsmanship in the face of a variety of '*demand conditions* for action without arrest' (1967, 701; italics in the original). His remark raises curiosity about what patrol officers do when carrying out their duties, not just out of academic interest, but also from the belief that a better insight into the officers' routines and actions will contribute to the improvement of public policing.

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In sociological studies on the reality of mundane patrol work, one recurrent theme is that officers often make use of their discretionary space: they enjoy a great deal of freedom and autonomy in making decisions and carrying out their job (e.g. Goldstein 1960; Lipsky 1980; Smith et al. 2005; Tummers and Bekkers 2014). This, in turn, has sparked debates about how cultural norms and values may influence the actions of patrol officers – and the other way around: how the character of police work may lead to a unique cultural disposition (Loftus 2010). With regard to the individual preferences of officers, Paoline (2003), for example, suggests that there are various subcultures of police officers, each with their own attitudes and practices. Not all officers are one-dimensional crime-fighters, many of them think that simply providing a service is a vital element of their work. In addition, scholars have given attention to various factors, including officer characteristics, suspect characteristics, organisational environments and situational settings, that might influence police decision-making (e.g. Sherman 1980; Strohine, Alpert, and Dunham 2008), specifically with regard to disputes, violence and whether a person is arrested or not (e.g. Bayley and Garafalo 1989; Bonner 2015, 2018; Smith and Visher 1981). Findings, among other things, suggest that non-forceful measures are often prevalent over alternate repressive forms of action.

Yet, the general weakness of these streams of studies is that they mostly tend to neglect the 'black box' of what really takes place within the discretionary space of patrol officers when making decisions. Much scholarly attention to their work has been preoccupied with assessing the impact of the police on crime reduction while ignoring the actual behaviours of officers as they exercise discretion and make decisions which are of primary concern for civilians (Mastrofski 1996; Willis 2013). Within any social setting, patrol officers routinely act or react by configuring all kinds of clues about what is going on in their interaction with the general public. Put differently, they make sense of their environment and attempt to do the best – or least-worse – thing amongst available options, under particular circumstances (cf. Landman 2015). Patrol officers are not entirely bound by convention but have the freedom to make choices.

Clearly, the relatively new introduction of micro-grid crime prevention technology, including databases and algorithms, may limit patrol officers' choices or may otherwise supplement police expertise (Ratcliffe, Taylor, and Fisher 2019). Predictive philosophies essentially assume that data-driven policing is less subjective than traditional patrol work since officers are no longer guided by their own beliefs and opinions, but rather by unpersonal Big Data and algorithms (Ferguson 2017). In theory, predictive policing should thus result in better – neutral and objectified – police decisions, but this hypothesis is in stark contrast with the idea of policing as a complex mastery of skills and craftsmanship. We are therefore concerned with understanding the work routines and decisions of patrol officer in a unit that is data driven, primarily proactive and focussed on hot spots. This brings us to the research question of how everyday patrol work takes shape within a flexible and prediction-oriented Dutch police team (a kind of flying squad) and how officers make sense of their discretionary space whilst being in contact with civilians. We specifically highlight the discretionary space of individual officers and the craftsmanship – that is 'the knowledge, skill and judgement acquired through their daily experiences' (Willis and Mastrofski 2018, 27) – that lies at its basis.

This craft dimension of police work provides officers with the skills 'to do what jazz musicians do, improvise' (Shearing and Ericson 1991, 495), but has received little attention from scholars. We know surprisingly little about how that process of improvisation in police discretion works in practice, not least within a setting of technologically assisted and algorithmically governed policing. Back in the 1980s, Bayley (1986) and Bayley and Bittner (1984) developed a 'stage model' to discern interactions between police and civilians that covers 'contact, processing and exit' decisions. Our ambition is to build on their model by integrating new empirical findings on a data-driven police squad with knowledge previously found in the literature since any attempt to understand (and change) police practices 'is only likely to succeed if grounded in empirical insights [...] about "what doing a good job" is all about' (Willis and Mastrofski 2018, 27–28). The practical endeavour in this exercise is to gain insider information which will improve patrol work by uncovering 'what works' and 'what matters' (van Dijk, Hoogewoning, and Punch 2015) for an increasingly technology-intensive police profession.

Our paper is organised as follows: the next section starts with a brief overview of the academic literature on discretionary space, craftsmanship and practices related to street-level policing. In addition, we give an account of our case study on a data-driven police flex-team in Amsterdam, the capital city of the Netherlands. We present our empirical findings in two subsequent sections, after which we close with a brief conclusion and discussion.

## **Police work in the literature**

### ***The importance of discretionary space***

The modern police organisation fulfils a vital social ordering function. Not only do police officers prevent crime, assist civilians and solve many problems, they also give moral direction to society by conserving its generally accepted norms and values and teaching people about what is acceptable behaviour and what is not (Muir 2008). The police thus exhibit a form of 'symbolic power' to 'diagnose, classify, authorise and represent both individuals and the world' (Loader and Mulcahy 2003, 46) in a taken-for-granted, legitimate, manner. Therefore, Muir (1977) describes patrol officers as 'street corner politicians' who, within the remits of the law, have discretion in making choices among the possible courses of action (or inaction) available in their routine encounters with civilians. Or, as Hart (1997), puts it: patrol officers act as 'gatekeepers' of the criminal justice system; they have the power to decide about making an arrest, issuing a fine, giving a warning or doing nothing and, as such, exercise guardianship over the norms and values they serve and stand for.

Not surprisingly, therefore, a huge amount of public administration theory (and, we add, police theory) 'revolves around a single, central problem: that of delegated discretion' (Fukuyama 2004, 189). This freedom of street-level professionals – more precisely patrol officers – to interpret the rules and control situations when coping with multiple pressures such as unwilling civilians, time constraints, high workload and information deficits is definitely not straightforward (Lipsky 1980; Tummers and Bekkers 2014). Organisational goals are not always clear, and rules 'from above' can fail when applied to specific circumstances. This creates tension between 'institutional' and 'situational' logics (Schön 1983). Because laws and regulations can appear ambiguous, contradictory and sometimes unclear, individual police officers inhabit a degree of freedom to offer their own interpretation and act accordingly.

In the 1960s, Joseph Goldstein was already arguing that 'police decisions [...] are generally of extremely low visibility and consequently are seldom the subject of review' (1960, 543). He was especially concerned about decision-making that involved not upholding and enforcing the law, which, contrary to issuing fines and making arrests, remains mostly invisible and hidden to outsiders. Patrol officers habitually make judgements regarding what is and what is not allowed without being subject to external checks and balances designed to demarcate the justness or fairness of the decisions made. Kleinig (1996) even argues that police discretion is undesirable in democratic societies, because it may lead to selective enforcement, unequal treatment and (racial) discrimination. Yet, despite this comprehensible criticism, the need for police discretion seems unavoidable when dealing with complex situations. According to Herman Goldstein, appreciation of discretionary autonomy 'recognises that actions short of arrest may achieve the desired goal' (1963: 140). Not using the human ability to make choices and to improvise potentially leads to a legalistic over-emphasis on rule enforcement and, in the end, unnecessary violence.

### ***Craftsmanship in everyday practice***

Discretionary autonomy is part and parcel of a concrete professional practice that goes beyond immediate activities. It recognises that people are located in a longer-standing and dynamic

tradition of rules, learning and interpretation, which makes them do what it makes sense to do. In short, Reckwitz defines a practice as:

a routinised type of behaviour which consists of several elements, interconnected to one other: forms of bodily activities, forms of mental activities, 'things' and their use, a background knowledge in the form of understandings, know-how, states of emotions and motivational knowledge. (2002, 249)

A practice does not exemplify something completely arbitrary; quite the contrary. Street policing, to take our example, stems from professional activities grounded in an occupational culture within which patrol officers carry out their job. In addition, a practice has a 'teleo-affective structure': it has a specific purpose or *telos* (Schatzki 1996). Without such a purpose, police work becomes meaningless. The philosopher Alasdair MacIntyre may offer the most famous formulation of this insight:

By a practice I am going to mean any coherent and complex form of socially established cooperative human activity through which goods internal to that form of activity are realised in the course of trying to achieve those standards of excellence which are appropriate to, and partially definitive of, that form of activity, with the result that human power to achieve excellence, and human concepts of the ends and goods involved, are systematically extended. (1981, 218)

His definition of a practice puts us on the track of intrinsic normativity. In this regard, MacIntyre speaks of 'internal goods' versus 'external goods'. Internal goods are inherently (or intrinsically) linked to the activity of a practice. In contrast, external goods, such as power, fame and wealth, can be gained from anywhere and always have a competitive element to them.

MacIntyre gives the example of a chess game where the rules of the game define chess and determine its value. For him, chess games can only be played properly when people respect certain standards of excellence since internal goods, including fair play and the beauty of playing a game, constitute this excellence. Playing chess games only for the sake of winning a tournament (an external good) makes people vulnerable to cheating. It is therefore crucial to understand the 'logic' – e.g. the internal good – of a practice, to grasp its underlying values and quality standards that guide proper, not to say virtuous, behaviour.

Along these lines, scholars argue that patrol officers' activities exhibit an intrinsic goal or internal sense related to their capacity to undertake decisive action and, if necessary, use force (e.g. Bayley 1986, 1994; Bayley and Bittner 1984; Bittner 1990 [1970]; Waddington 1999). They represent a last resort in setting the 'moral boundaries' (Boutellier 2019) of what is permissible, and what is not, in society. At the same time, scholars view patrol officers as moral agents who contribute to 'important social values and the confirmation of standards of good and evil' (Terpstra 2011, 7; Loader and Walker 2007). Too-strong an emphasis on strict rule-following and repressive measures may undermine police legitimacy and social cohesion, which makes patrol officers search for other solutions, including negotiation and mediation, in handling conflicts and problems.

Following from this, the practice of police work permeates a form of immanent 'craftsmanship' – a 'normative order of competence' (Herbert 1998, 351) – performed by skilled decision-makers who must intervene in situations where creativeness and inventiveness are needed. Because patrol officers have no blueprint for action, and thus sail on general guidelines, their decisions are guided by (on-the-job) training and 'professional intuition':

Like chess players who recognise situations overlooked by amateurs thanks to thousands of hours of practice, patrol officers making sense of what is going on are guided by all kinds of hunches that can't be reasonably explained. (Landman 2015, 387)

That is to say, the craft of policing contains implicit or 'tacit' (Polanyi 2009 [1966]) – i.e., unwritten and unspoken – knowledge that enables patrol officers' decision-making here and now. Schwartz and Scharpe (2010) speak of 'practical wisdom' – of 'doing the right thing the right way in the right situation' – as the ability to translate very abstract policy aims into concrete action. Patrol officers who understand this *telos* are motivated to improvise and can play with craft skills, including probity, judgement and diplomacy (Rhodes 2016), to function well and arrive at legitimate outcomes.

Nevertheless, the logics of predictive policing possibly infringe on patrol officers' discretionary space through algorithmically calculated forecasts of crime patterns at neighbourhood level which should ultimately guide their behaviours (Ratcliffe, Taylor, and Fisher 2019). Skilful decision-making may get supplemented by technology-driven actions and solutions.

### ***Police – civilian interactions and beyond***

Police – civilian interactions represent important moments in practising the craft of frontline policing. In exploring these moments empirically in cases of domestic disputes and proactive traffic stops, Bayley (1986) and Bayley and Bittner (1984) distinguished 'contact, processing and exit', three distinctly different stages during which patrol officers make all sorts of choices. At first contact, patrol officers judged what was best to do, depending on the nature of the problem. The most common tactic used when juggling a (stressful) situation was to stay calm, ask questions and listen passively to what civilians had to say (Bayley 1986).

Proceeding from this contact moment to the processing stage, the patrol officers who were the subject of research tried to establish control on their terms by providing services that were meaningful to the civilians involved, sometimes to the point of bending or changing the rules. However, patrol officers do not always 'move towards' civilians (Tummers et al. 2015). They may also issue a fine or make an arrest since, in some instances, a line will need to be drawn. Still, (verbal) aggression is relatively rare (Bayley and Garafalo 1989) and the vast majority of police – civilian interactions result in non-arrest decisions, 'even in cases involving a rather overwhelming amount of evidence (e.g., officers observe the illegal act and the suspect confesses to such)' (Terrill and Paoline 2007, 325). A similar observation goes for patrol officers who do not press criminal charges against disrespectful, oftentimes intoxicated, people, but instead try to de-escalate the situation (Bonner 2015, 2018; Schulenberg 2015). By following their normative orientation, a sense of how to do police work best, many patrol officers try to execute their interventions in a skilful way to bring about non-violent outcomes. At this point, police choose from a wide array of exiting actions needed 'to terminate the encounter and make themselves available for other business' (Bayley and Bittner 1984, 45). Frequently, as Bayley (1986) observed, patrol officers left a scene without doing anything at all.

That being said, it is important to realise that police discretion goes well beyond direct encounters with civilians because this represents only a portion of their daily work. Patrol officers, for example, also enjoy autonomy when conducting crime-related investigations, carrying out administrative duties and patrolling the streets without a clear purpose (e.g. Mastrofski, Parks, and Reiss et al. 1998; Smith, Novak, and Frank 2001). In fact, officers spend hours walking, cycling or driving around, time when there is no call upon them and during which they use (unarticulated) 'working rules' (Stroshine, Alpert, and Dunham 2008) to detect and define suspicious people, places and situations. We must therefore take into account the broad range of time covering patrol officers' activities and decision-making on their beat. In these ways, police occupational culture guides officers' behaviour, but they do not blindly follow rules, values and conventions related to their craft. Instead, individual officers have discretion as to whether to enforce the law, make an arrest or undertake alternative actions. They are, in other words, 'active participants' whose 'guidance stories [...] have an open-ended character' (Shearing and Ericson 1990, 500). Not least for a 'rationalised' intelligence-led predictive policing squad, it is vital to shed more light on this process of decision-making as it has a great impact on the actual use of police authority.

## **A case study in Amsterdam**

### ***Choosing the police flex-team***

To answer our question about how patrol work takes shape and how police discretion plays out in practice – that is, the way in which individual officers interpret their environment and act accordingly

by using micro-grid crime prevention technology – over the spring of 2016 in Amsterdam, the capital city of the Netherlands, we conducted a case study on a predictive-oriented flexible police team (a kind of data-driven flying squad). ‘The essence of a case study’, Schramm (1971, 6) writes, [...] ‘is that it tries to illuminate a decision or set of decisions: why they were taken, how they were implemented, and with what result’. This research method is therefore ideal for gaining an in-depth understanding of real-life police work by observing and interviewing officers about their ‘everyday life attitudes and behaviour’ (Adler, Adler, and Fontana 1987, 219) in a reflective way. Reasons for studying this particular police team were both pragmatic and theoretically motivated. Pragmatically, personal contact with the Amsterdam police unit made it possible to gain access to the officers who participated in our field research. The theoretical importance of our choice lies in the nature of the team, which will be elaborated on below.

First, the deployment of the police flex-team takes place using information derived from CAS, the Crime Anticipation System of the Amsterdam police unit. This system is an example of what can be categorised as ‘predictive policing’, referring to a tactic that uses the power of ‘Big Data’ – computer models and algorithms that recognise and connect patterns in giant data sets – to inform future crime prevention policies. Drawing on previous recordings of, and intelligence about, identifiable places of crime and disorder, patrol officers are sent out to patrol identified ‘hot spots’ in Amsterdam, where they must adapt to the situation and act. In this respect, the idea of police professionalism conjures images of patrol work and decision-making as being highly motivated by scientific knowledge and preprogrammed algorithms. However, as Willis notes, ‘from the perspective of craft, professionalism is defined quite differently. Experience, not scientific knowledge, is the foundation of effective police work. [...] In contrast to a computer-driven robocop, the craft image of the professional police officer is someone who thinks quickly on her feet to behave in ways that are wise, compassionate and fair’ (2013: 3–4). Good policing deserves no less.

Second, although the police flex-team is formally concerned with crime prevention, its members have a broad mandate of patrolling the streets and interacting with civilians in informal and service-oriented ways. Compared to ordinary patrol officers who often respond to emergency calls, flying squad-officers generally operate in a less reactive mode and regularly patrol on bikes, which allows them to be quite open to the general public. These officers also work with relatively high levels of uncertainty since they are flexibly deployed to streets and squares that are most at risk of crime and disorder and do not have much knowledge of a given neighbourhood. As such, the police flex-team is somewhat different from their peers in community policing who are usually intimately attached to a defined urban area. Team members must rely solely on their own judgement when intervening in a situation and thus they enjoy a great deal of discretionary power.

### ***Studying the police flex-team***

Studying the patrol officers’ work, we made use of three techniques: participatory observations, in-depth interviews and video elicitation. To begin with, we went out on six afternoon shifts of 9 hours each (1:30–11:00 pm), which provided 54 hours of observations and informal conversations with 11 members of the flex-team, nine male and two female, aged between 18 and 45. These observations consisted of ‘ride alongs’ with two patrol officers during which we collected information on interactions between the officers themselves, their interactions with civilians, how they acted in these situations, and why so. We chatted informally with officers about their engagement in activities, took ‘scratch notes’ (DeWalt and DeWalt 2002, 144) in the car and then typed up our findings into six expanded field transcripts.

Building on our findings from these observations, we continued by conducting in-depth interviews with eight respondents in total. The interviews were held in two rounds. The first round was mostly explorative in nature and took place directly after our observations. We debriefed the officers about the interactions they had with civilians during their shifts with the aim of getting more clarification of what we had noticed on the streets. Questions revolved around how officers

perceived the situations they encountered, how they acted and why they acted as they did, and how, in hindsight, they reflected on the decisions made. In the second round, a few days after the debriefings, we presented two video clips (described below) of actual incidents to rate our respondents' perceptions of what 'quality police work' entails (cf. Jewitt 2012; Willis and Mastrofski 2018). This time the questions asked related to how respondents judged the police officers' behaviour as displayed on video, how they would use their discretionary space themselves (and why so), how to deal with ambiguities and challenges (such as unwilling civilians and time constraints), and what craftsmanship (i.e. competencies) meant to them.

The second round was meant to provide more depth to the whole idea of 'good policing' related to real-life situations and circumstances. We selected two episodes from the police reality series *The Control Room* (*De Meldkamer* in Dutch). The first was about a violent brawl outside a supermarket. When arriving at the scene, the patrol officers found only a drunk man who was unable to say what exactly had happened. He got very aggressive, whereupon the police arrested him. This scene was shot by body-worn cameras. The other clip also depicted an intoxicated person causing commotion. He was lying on the pavement at a tram stop, hardly able to stand up. Again, the scene got out of hand and the police took the man into custody. We chose both situations because they nicely depict challenges that police officers have to face and have to deal with on a regular basis. It is quite common to find intoxicated people in Amsterdam. The goal of our case-study was not so much to sketch a completely representative picture of the flying squad, but rather to highlight a colourful diversity of opinions and experiences among patrol officers about police craftsmanship where predictive technology had been in use.

### **Coding and analysing our data**

After finalising the fieldwork, we coded all findings from the observations, interviews and video elicitations separately with the help of Atlas.ti, a qualitative research and analysis software package, to allow the key issues to emerge naturally from our data (cf. Charmaz 2014; Friese 2014). The coding process encompassed three steps. The first was 'initial coding', to get a quick glance of what the data were about. For example, moments when police officers 'talked to civilians' would be one type of data. 'Focussed coding, part 1', as a second step, searched for the most significant codes and important patterns such as 'giving a warning' when talking to the owner of a double-parked car. During the third step – 'Focussed coding, part 2' – we took into account the circumstances of any patterns found, for instance, to stay with our example, patterns related to 'feeling empathy' for someone unlawfully parking his car on a very busy shopping street (and thus restoring to giving a warning only).

This systematic process of labelling text fragments, ordering information, highlighting patterns and shaping categories iterated towards 'a theory which closely fits the data' (Eisenhardt 1989, 541) and provided new understanding of how professional craftsmanship translates into daily decision-making. As such, our methodology arrived at an 'analytical generalisation', defined as 'the extraction of a more abstract level of ideas from a set of case study findings' (Yin 2013, 325), that could apply to other situations and contribute to theory building. Close-up scrutiny of what happens in a real-world setting thus offers a firm foundation for 'generative principles' (Hammersley and Atkinson 2007) by which the 'how' and 'why' of what patrol officers do can be explained.

### **The craft of street policing in dealing with civilians**

As touched upon above, the members of the police flex-team under study were governed by predictive policing technology. Being fed by demographics, socio-economic figures, weather forecasts, earlier crime records, the local presence of known suspects and the infrastructural layout of neighbourhoods, CAS analyses and predicts where so-called 'high-impact crimes', including robberies and burglaries, might occur. At a daily briefing, the officers then selected clear 'hot spots'. This



makes their job dynamic: today, the flex-team might be working in the northern part of town, while, tomorrow, they might be deployed to the western suburbia of Amsterdam.

On the next pages, we are particularly interested in what police craftsmanship – a mixture of culture, knowledge, vocational skills, judgement and decision-making acquired on the job – means and looks like within in the remits of a data-driven flying quad. As touched upon above, craftsmanship refers to a source of normativity stipulating an artisan way of doing things without having a clear road map or design for future actions. Patrol officers must trust in their inner logic and improvisational creativity, and, as such, let ‘practice speak for itself’ (Trommel and Boutellier 2018, 21; Sennett 2009). Emerging from our empirical fieldwork and inspired by a previous analysis of ‘blue patterns’ in street police work (Landman 2015), we distinguish five primary stages and routine actions by means of which patrol officers go about their job and exercise their discretionary space. These are searching for relevant clues, defining a situation, anticipating a situation, dealing with civilians and closing a situation. As such, we have reached a theoretical advancement and specification of the original three-stage model (‘contact, processing and exit’) originally proposed by Bayley (1986) and Bayley and Bittner (1984). The here-and-now of each stage is key here: it requires genuine skill to act wisely under a specific circumstance and in a particular situation (Polanyi 2009 [1966]; Landman 2015; Schwartz and Scharpe 2010). Interestingly, the predictive CAS only mattered insofar it flexibly deployed patrol officers to certain ‘hot spots’ in town. Once there, officers immediately fell back on their own routines and discretionary space when dealing with civilians. In fact, most patrol officers interviewed were quite sceptical about the usefulness of predictive models as they played out on the streets. But let us first discuss the officers’ stages and routines one by one.

### **Searching for relevant clues**

Bayley (1986) and Bayley and Bittner (1984) describe the tactics chosen by police officers when handling highly problematic encounters with civilians in domestic disputes and in stop-and-search situations. Yet, as previous publications (e.g. Mastrofski, Parks, and Reiss et al. 1998; Smith, Novak, and Frank 2001) and our own empirical research indicate, most of the hours spent on patrol do not involve police-civilian interaction and responding to (emergency) calls. The patrol officers studied conducted a lot of (crime-related) administrative work, were sometimes *en route* without a clear purpose and consumed much time just driving around spotting patterns that deviate from ‘normal’ or ‘ordinary’ behaviour. In so doing, on the basis of intuition or ‘a sixth sense’, officers searched for relevant clues that might indicate (potential) bad conduct (Alpert, MacDonald, and Dunham 2005; Stroshine, Alpert, and Dunham 2008). However, their activities were not based on a magical capability. Patrol officers used three sources of (tacit) knowledge that guided their searches, told them what to look at and informed their action. First, they drew on their legal knowledge to discern whether behaviours or situations involved a (criminal) offence. Suspicious conduct should directly or indirectly be traceable to criminal law, which opens the possibility of imposing sanctions and taking other legal measures. For example, after stopping a car driving through a red light, officers had a certain ‘gut feeling’:

If we feel that there is something going on in the context of drug-related crime, we have the authority to search the vehicle and the passengers. (officer # 2; fieldnote #13)

Furthermore, patrol officers were on the lookout for wanted criminals, known offenders and suspicious-looking people or objects. They carried a mental map of what, in their view, suspicious behaviour looks like – a profile or set of characteristics that separates the ordinary from the extraordinary:

You look at age, gender, the type of vehicle, and non-verbal communication (officer #3; first interview round). A young lad noticing our police car suddenly got into his own and drove off. We checked his number plate and

found some antecedents, so we decided to follow him for a while and waited for things to happen. (officers #8 and #9; fieldnote #81)

Lastly, the patrol officers' knowledge of locations and hotspots, which had previously been the location of burglaries, street robberies or youth nuisance, helped them decide whether the behaviours and situations they encountered appeared normal or not. An officer explained:

If I cycle around Dam Square [Amsterdam City Centre] I am always alert to pickpockets, street thieves and alcohol abuse. You just learn this on the job. (officer #1; fieldnote #12)

Locations with a bad reputation thus automatically enjoyed more police coverage than other, less troublesome, parts of town.

### ***Defining a situation***

When arriving at a (crime) scene, patrol officers tried to diagnose and define the situation at hand by observing closely people's behaviour and extracting any clues from what they sensed in the environment. Officers automatically sought to confirm whether their own findings matched what had been reported in an (emergency) call and put their own safety first before taking immediate action (Bayley and Bittner 1984; Bonner 2018; Mastrofski 1996). Because they often didn't know what they might encounter and situations could look grim, officers collected and interpreted signals as supporting evidence from their immediate surroundings: 'what do I see, smell, taste? What are the possible risks?' An officer responded to a video fragment of a policeman finding someone lying on the pavement (second video fragment on a violent brawl). What would he do?

I would walk around him, make sure his eyes are open. Is he conscious or not? Perhaps I would gently push my baton into his side. (officer #6; second video fragment)

However, in real-life situations, information gathered from their own observations was usually not self-evident enough, so patrol officers requested further information from bystanders and other witnesses. They also split up larger groups for safety reasons, checked identity cards and listened to what various (assemblies of) people had to say. Splitting up people furthermore served as a tactic to increase the objectivity of stories told and to circumvent contestation of testimonies:

A witness may have seen something completely different to a victim, so we wish to avoid any chance of parroting. People are inclined to reciprocally influence each other. (officer #2; first video fragment)

As a third step, patrol officers validated what they had heard and seen by discussing and comparing their own findings with those of other officers. Although it could occasionally still be difficult to discern what had really happened, patrol officers always needed to come to an acceptable conclusion and act vigorously. They did not always agree on what to do next, though, as some would have arrested an intoxicated man causing commotion (first video fragment), while others would have let him go.

### ***Anticipating a situation***

Defining a situation sooner or later led to a police intervention, but it was not immediately clear what to do or how to act. A combination of high uncertainty and unpredictability made patrol officers somewhat suspicious towards the outside world (Loftus 2010). Therefore, 'anticipating a situation' was a critical skill patrol officers employed to get more grip on what was going on, since seemingly routinised encounters with civilians might escalate in a split second:

Intoxicated people can be carrying a knife or something sharp which is why we always keep a safe distance in such situations. (officers #1; first video fragment)

Patrol officers remained vigilant and took precautionary measures by taking strategic positions in relation to a person and made sure they could effectively protect themselves and their colleagues (Bayley and Bittner 1984; Mastrofski 1996). As we observed during one of their beats,

officers #5 and #6 detected a van parked down a street. They pulled over and each approached the vehicle from different sides. Officers #5 talked to the driver, while officers #6 checked the passenger seat: 'we do so to get clear oversight and make sure that there are no firearms lying around'. (fieldnote #50)

If necessary, patrol officers blocked escape routes with their vehicle and displayed a latent possibility that physical force might be used: 'you need to stay firm [...] People must feel there is no other option than to cooperate' (officer #3; first interview round).

Since each officer had their own strengths and weaknesses, they preferred to operate in complementary duos to share the workload and align tasks accordingly. For example, one would do the talking, while the other took notes and checked a licence plate. Patrol officers, in effect, naturally developed role patterns that cleverly fitted the various interactions, contexts and environments in which they found themselves:

You are possibly familiar with the phenomenon of the 'good' cop versus the 'bad' cop. If people respond aggressively to my colleague, we immediately change roles to calm down angry characters. (officer #9; first video fragment)

Thus, anticipating a situation involved several routine actions geared towards staying in control at all times and lowering the risk of harmful behaviour.

### ***Dealing with civilians***

In the process of anticipating and defining a situation, police officers had to deal with sometimes reluctant, yet mostly non-violent, civilians. This made personal communication skills and the ability to be persuasive central features of their competence in the course of carrying out day-to-day patrol work (Muir 1977; Willis and Mastrofski 2018). These communicative skills went beyond verbal communication and tone of voice. Body language, facial expressions and hand gestures were crucial elements too. Under normal conditions, patrol officers tended to converse a bit, showed interest in people's life world or paid them compliments in order to extract valuable information from them:

I regularly share chit-chat with some chaps. How can they afford an expensive scooter? Do they go to school? Do they have paid work? (officer #10; second video fragment)

This strategy served to lower (latent) tensions between the patrol officers and civilians, improve mutual trust and avoid unnecessary escalations.

However, not everybody was willing to listen and cooperate with the police easily, and this challenged patrol officers to stay relaxed but firm in what were, from time to time, stressful situations. Drawing on their experience and training, officers examined ways of calming down and pacifying a person before using force and making arrests (Bayley and Garafalo 1989). During one of our observations, patrol officers pulled over a young male scooter driver who was very rude in response, yet the situation did not get out of hand. Reflecting on this incident, the police officer involved said:

It is vital to remain tranquil, being emotional doesn't help, things may escalate [...]. We try to balance things out if people are high on negative emotions. (officer #2; first interview fragment)

Although patrol officers admitted that they sometimes felt emotionally hurt, they were mostly apt to rationalise rude behaviour: 'some persons are clearly mentally confused' (officer # 6; second interview fragment) and 'people don't mean it personally, [...] they are just scolding my uniform' (officer #3; first interview fragment).

Nevertheless, patrol officers switched to another, more cautionary and admonishing, mode when people continued to push moral boundaries, acted dangerously, became aggressive or clearly broke the law. For example, over the course of our fieldwork, officers pulled over

a speeding car ('your driving behaviour is irresponsible!'; officer #4, #5; fieldnote #43), stopped a scooter driver without a proper licence ('this is the second time already, next time we will seize your vehicle!'; officer #8; fieldnote #82) and spotted a driver wearing no safety belts ('what do you think will happen in case of an accident?!'; officer #7; fieldnote #61). People normally listened, but a few began to doubt the officers' decisions and motives at the time of interaction. They accused them, among other things, of arbitrariness and racial profiling, making patrol officers prone to defend and legitimise their actions:

A driver said that 'you always choose the same guys'. The patrol officers, in turn, replied by asking just why he was so aware of what the police did anyway: 'I hope that you're gonna behave yourself. This has nothing to do with your appearance'. (officers #4, #7; fieldnote #69)

For reasons of public trust in, and compliance with, the police, five respondents stressed how important it was that civilians thought of their decision-making as appropriate, legitimate and fair, even when outcomes went against their immediate interests. Accurate and transparent communication with people should give a positive spin to sometimes laborious and conflicting conversations.

### ***Closing a situation***

The patrol officers' discretion became most evident in the closing of an interaction with civilians (Bayley 1986; Bayley and Bittner 1984). They could choose from an arsenal of interventions in order to normalise a situation: doing nothing, giving a warning, issuing a fine, making an arrest, initiating mediation or providing help and assistance. Which outcome was chosen depended on a combination of setting, human behaviour and the desired goal. As to the setting (context) of a situation, whether it was day- or night-time (light/dark), the location of an interaction (private/public places, 'hot spot' or not) and the kind of person ('known suspect' or not) made a difference to how patrol officers responded (Stroshine, Alpert, and Dunham 2008). Furthermore, it obviously mattered whether people had reported a problem to the police or had caused problems, which in itself called for police action. Patrol officers were also inclined to intervene more swiftly when they came across dangerous situations and breaches of the public order, not least when bystanders were present and were put at risk:

There was a female walking through red traffic light, while other people kept waiting, hoping we would do something. We really felt the pressure to act in that moment. (officer #5; fieldnote #54)

Not wearing a safety belt is a good example: I would give adults a warning since they should look after themselves. However, I do issue a fine if the same adults fail to fasten their child's safety belt. Children don't choose to sit unharnessed in the back seat, their parents are responsible for them. (officer #3; first interview round)

How patrol officers understood and judged a situation dictated what kind of (law enforcement) decision they finally made.

The closing phase of police-civilian interaction was greatly influenced by the morality of a situation and people's own behaviour (Bonner 2015). Some had a reasonable excuse for breaching the law and officers felt sorry for them:

We were called to a supermarket after an elderly lady was caught with a bottle of wine. It turned out she lived on a small pension and did not have any criminal record. Should we make an arrest and put her in jail? No, she was in shock and that was punishment enough. (officer #4; fieldnote #30)

However, others tried to play tricks on the police, and this often resulted in harsher measures from the officers' side: 'I realise quickly when people are trying to screw me' (officer #9; second interview round). In particular, a disrespectful attitude could easily lead to patrol officers changing their minds when they were initially intending only to give a warning. This latter point related to the desired outcomes that patrol officers wanted to see. Overall, they would rather let deviating civilians learn from their own bad behaviour and avoid future recidivism than impose fines and make arrests (Terrill

and Paoline 2007). A good conversation might have more impact than law enforcement, and some officers thought that the severity of some penalties was disproportionate to the infraction:

Using a mobile phone behind the wheel, a relatively small traffic violation, costs you 240 euros – for shop theft, a crime, we only charge 150 euros! (officer #8; second interview round)

At the same time, patrol officers acknowledged the limits of their discretionary space. For example, they talked endlessly, warned, negotiated and mediated in ambiguous interpersonal conflicts, but eventually didn't hesitate to move in on people who were behaving badly (Bayley and Garafalo 1989). In a final act, patrol officers attached a label to whatever had happened, and many afterwards retold their story in a formal police report.

### ***Predictive policing and police craftsmanship***

Predictive policing systems, such as CAS, have been criticised in the literature on the grounds that they may lead to an unfair distribution of law enforcement strategies aimed at 'suspect communities' (van Brakel 2016; Ferguson 2017), that there is no clear empirical evidence for the accuracy of future predictions of crime (Bennett Moses and Chan 2018; Williams, Burnap, and Sloan 2017) and that algorithms do not give any better forecasts than untrained people without special expertise in the field of criminal justice (Dress and Farid 2018). Furthermore, some patrol officers may hope that software could help them to perform better, whilst, simultaneously, many think that this will never happen at all (Ratcliffe, Taylor, and Fisher 2019). In line with such observations, the respondents in our study were also quite sceptical about their high-tech crime prevention tool. Four things matter here: patrol officers (1) doubted the effectiveness and reliability of algorithmically governed crime control, (2) emphasised the power of contextual knowledge in police work, (3) thought that policing is more than crime fighting and (4) would in fact set their own priorities. We will briefly discuss these points in turn.

First, the patrol officers interviewed didn't feel that the CAS system predicted crime very well: 'crime never happens where the software deploys us to' (officer #14; first interview round). Insofar as predictive policing is able to prevent crime and other types of trouble, this has more to do with the mere presence of patrol officers on the streets. In their experience, a criminal has never been caught as a result of technology-based intelligence. One officer openly declared that CAS is just confirming the obvious: he didn't 'need a computer system to forecast that poor neighbourhoods are relatively vulnerable to crime' (officer #3; second interview round).

Relatedly, our respondents generally put more trust in their 'gut feeling' and in their contextual knowledge of a local neighbourhood and its inhabitants. Yet, since the flying squad is flexibly deployed around the city of Amsterdam, its officers sometimes felt devoid of that important guidance:

You are not acquainted with the local problems, the drunk and the scum. You have no idea who deserves positive attention, and who to keep an eye on. (officer #8; second interview round)

This point raised a fundamental problem with the flying squad character of the police team. Unlike community police officers responsible for a small part of town, the flexible patrol officers lack any social bonding with the area they serve, which could hamper the effectiveness of their work.

In addition, patrol officers maintained that police work involves much more than catching criminals. Predictive policing technologies, in their view, tend to deploy disproportionately amounts of police time to burglaries and street robberies, while there is much more going on around a neighbourhood. Therefore, our respondents quite naturally broadened their crime-fighting scope to a problem-solving one by looking at disorders, incivilities as well as the (urgent) needs of civilians. Police work is also about 'being there' for people:

We issue a warning or have a good conversation with someone who seems hopelessly out of their depth. That is police work too. (officer #8; first interview round)

The net result is that the officers involved in predictive policing still relied heavily on their improvisational skills and their personal taste for what defines 'good' or 'quality' police work. CAS promised rationality and direction in the form of sophisticated intelligence-led policing, but being devoid of proper orientation, the police team could do nothing other than fall back on their own trained intuitions. Predictive policing technology sometimes even conflicted with patrol officers' craft-based knowledge. They knew better from experience what they should do and, as such, rather set their own priorities in the areas where CAS sent them to.

## Conclusion and discussion

Following Willis and Mastrofski (2017), scientific comprehension of the nature of today's police craft deserves a proper update (most relevant findings were published decades ago) by thoroughly describing and classifying police officer discretion as they perform street-level patrols. This update is particularly urgent since predictive policing proponents assume fairly unproblematic connections between algorithm-based priorities on one hand, and how officers act in daily practice on the other (Ratcliffe, Taylor, and Fisher 2019). In the previous pages, therefore, we have presented our fieldwork on the craftsmanship of a data-driven and algorithmically governed police flex-team in Amsterdam, the Netherlands. The following, partly overlapping, stages and routine actions in carrying out patrol work were identified:

- *Searching for relevant clues* refers to the social control exercised by patrol officers on the beat. Building on their *legal knowledge* and *legal powers*, they are trained to *signal abnormal and illegal behaviours* while on the watch for (known) suspects roaming the streets. Patrol officers do this by means of direct intelligence or by the profiling of risky-looking characters. The observation of the course of events takes place in particular *locations* – not least 'hot spots' – and provides officers with a framework for interpretation and judgement in accordance with what is tolerated or not.
- *Defining a situation* occurs when patrol officers *observe and collect information* about their physical environment. They ask themselves questions: does what I see fit the information of the original (emergency) call, does the situation look threatening, are there any bystanders and are they at risk? Officers then *validate* what they see, hear, feel and smell by weaving together various pieces of evidence that compose the story of what is happening. This (unconscious) process of inference and interpretation determines what to do next and connects to previous experience in similar situations.
- *Anticipating a situation* takes place when patrol officers who arrive at a scene are not sure about what to expect or what to do. They *position* themselves strategically when facing disrespectful, aggressive, confused or otherwise unpredictable people (and bystanders) so they can *protect* each other when force is used against them. This routine involves frequent cross-referencing and *alignment* between officers in order to undertake appropriate action. Mutual trust, sensing each other, communication and split-second reactions are vital elements here.
- *Dealing with civilians* involves different levels on a communication ladder that allows patrol officers to simply *chat* with the general public, *settle down* heated conversations, or *warn* offenders. During this process, they try to be *transparent* about their rationale, actions and decisions so as to *legitimise* their responses to (grudging and reluctant) civilians.
- *Closing a situation* can take several forms ranging from leaving a situation as it is to apprehending deviants. Officers have the power to issue a fine or make an arrest, but they may also choose just to caution a person, assist a victim or mediate in a conflict. Good police work ultimately demands a continuous balancing act between being firm and remaining gentle. The strategy chosen depends on the *context* of a situation, the *statements* and *attitudes* of people involved and the *desired outcomes* patrol officers want to achieve.

Although being directed by a predictive policing computer model, the officers involved in the flying squad emphasised that, in everyday patrol work, they still relied heavily on their discretionary space – their freedom to act – in highly volatile and unpredictable contexts. Mundane street police work, after all, first and foremost remains a human activity. Micro-grid crime prediction technology did not seem to have much impact on the patrol officers' everyday craft, discretionary space or decision-making processes.

Admittedly, our impressions have been garnered on the basis of a limited empirical study in which we interviewed and observed a small population of patrol officers employed by a police flex-team in Amsterdam, the Netherlands. The unique organisation of the flex-team makes it technically impossible to generalise our findings to other police teams experimenting with predictive technologies, which makes our theory of police craftsmanship open to further replication, validation, expansion and cross-national comparison. A way forward would be to rehabilitate the venerable tradition of participatory action research as a means of coming to better grips with the reality of police work on the ground and of stimulating patrol officers' professional development. In other words: there is an urgency for engaged scholarship immersing itself in the 'swampy lowland' of daily practice rather than staying safely on the 'high ground' of technical rationality and managerial issues (Schön 1983). If predictive policing is here to stay, then the further development of data-driven police craftsmanship must be grounded in the tangible experiences of regular patrol work. Other attempts to implement high-tech innovations into the police organisation seem to be a recipe for disillusionment and for disappointing results.

## Disclosure statement

No potential conflict of interest was reported by the authors.

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## References

- Adler, A., P. Adler, and A. Fontana. 1987. "Everyday Life Sociology." *Annual Review of Sociology* 13: 217–235. doi:10.1146/annurev.so.13.080187.001245.
- Alpert, G., J. M. MacDonald, and R. G. Dunham. 2005. "Police Suspicion and Discretionary Decision Making during Citizen Stops." *Criminology* 43 (2): 407–434. doi:10.1111/crim.2005.43.issue-2.
- Bayley, D. H. 1986. "The Tactical Choices of Patrol Officers." *Journal of Criminal Justice* 14 (4): 329–348. doi:10.1016/0047-2352(86)90126-1.
- Bayley, D. H. 1994. *Police for the Future*. Oxford: Oxford University Press.
- Bayley, D. H., and E. Bittner. 1984. "Learning the Skills of Policing." *Law and Contemporary Problems* 47 (4): 35–59. doi:10.2307/1191686.
- Bayley, D. H., and J. Garafalo. 1989. "The Management of Violence by Police Officers." *Criminology* 27 (1): 1–25. doi:10.1111/j.1745-9125.1989.tb00861.x.
- Bennett Moses, L., and J. Chan. 2018. "Algorithmic Prediction in Policing: Assumptions, Evaluation, and Accountability." *Policing and Society* 28 (7): 806–822. doi:10.1080/10439463.2016.1253695.
- Bittner, E. 1967. "The Police on Skid-row: A Study of Peace Keeping." *American Sociology Review* 32 (5): 669–715. doi:10.2307/2092019.
- Bittner, E. 1990 [1970]. *Aspects of Police Work*. Boston: Northeastern University Press.
- Bonner, H. S. 2015. "Police Officer Decision-making in Dispute Encounters: Digging Deeper into the "Black Box." *American Journal of Criminal Justice* 40 (3): 493–522. doi:10.1007/s12103-014-9274-2.

- Bonner, H. S. 2018. "The Decision Process: Police Officers' Search for Information in Dispute Encounters." *Policing and Society* 28 (1): 90–113. doi:10.1080/10439463.2016.1147040.
- Boutellier, H. 2019. *A Criminology of Moral Order*. Bristol: Bristol University Press.
- Charmaz, K. 2014. *Constructing Grounded Theory*. 2nd ed. London: Sage.
- DeWalt, K., and B. DeWalt. 2002. *Participant Observation: A Guide for Fieldworkers*. Walnut Creek, CA: AltaMira Press.
- Dress, J., and H. Farid. 2018. "The Accuracy, Fairness, and Limits of Predicting Recidivism." *Science Advances* 4: 1–5.
- Eisenhardt, K. M. 1989. "Building Theories from Case Study Research." *Academy of Management Review* 14 (4): 532–550. doi:10.5465/amr.1989.4308385.
- Ferguson, A. G. 2017. *The Rise of Big Data Policing: Surveillance, Race, and the Future of Law Enforcement*. New York: New York University Press.
- Friese, S. 2014. *Qualitative Data Analysis with Atlas.ti*. 2nd ed. London: Sage.
- Fukuyama, F. 2004. "Why There is No Science of Public Administration." *Journal of International Affairs* 58 (1): 189–201.
- Goldstein, H. 1963. "Police Discretion: The Ideal versus the Real." *Public Administration Review* 23 (2): 140–148. doi:10.2307/973838.
- Goldstein, J. 1960. "Police Discretion Not to Invoke the Criminal Process: Low-visibility Decisions in the Administration of Justice." *Yale Law Journal* 69 (4): 543–594. doi:10.2307/794445.
- Hammersley, M., and P. Atkinson. (2007). *Ethnography: principles in practice* (3rd ed.). London: Routledge. <https://www.amazon.co.uk/Ethnography-Principles-Practice-Martyn-Hammersley/dp/0415396050>
- Hart, B. 1997. "Arrest: What's the Big Deal." *William Mary Journal of Women and the Law* 3: 207–222.
- Herbert, S. 1998. "Police Subculture Reconsidered." *Criminology* 36 (2): 343–370. doi:10.1111/crim.1998.36.issue-2.
- Jewitt, C. (2012). "An Introduction to Using Video for Research". (working paper). Southampton: National Centre for Research Methods Working Paper. doi:10.1094/PDIS-11-11-0999-PDN
- Kleinig, J. 1996. *The Ethics of Policing*. Cambridge: Cambridge University Press.
- Landman, W. 2015. *Blauwe patronen: betekenisgeving in politiewerk* [Blue Patterns: Sense-making in Police Work]. The Hague: Boom-Lemma.
- Lipsky, M. 1980. *Street-level Bureaucracy: Dilemmas of the Individual in Public Services*. New York: Russell Sage Foundation.
- Loader, I., and A. Mulcahy. 2003. *Policing and the Condition of England: Memory, Politics and Culture*. Oxford: Clarendon Press.
- Loader, I., and N. Walker. 2007. *Civilizing Security*. Cambridge: Cambridge University Press.
- Loftus, B. 2010. "Police Occupational Culture: Classic Themes, Altered Times." *Policing and Society* 20 (1): 1–20. doi:10.1080/10439460903281547.
- MacIntyre, A. 1981. *After Virtue: A Study in Moral Theory*. Notre Dame: Notre Dame University Press.
- Mastrofski, S. D. 1996. "Measuring Police Performance in Public Encounters." In *Quantifying Quality in Policing*, edited by T. L. Hoover, 223–224. Washington DC: Police Executive Research Forum.
- Mastrofski, S. D., R. B. Parks, A. J. Reiss, R. E. Worden, C. DeJong, J. B. Snipes. 1998. *Systematic Observation of Public Police: Applying Field Research Methods to Policy Issues*. Washington DC: U.S. Department of Justice.
- Muir, W. K. 1977. *Police: Streetcorner Politicians*. Chicago: University of Chicago Press.
- Muir, W. K. 2008. "Police and Social Democracy." *Policing & Society* 18 (1): 18–22. doi:10.1080/10439460701718526.
- Paoline, E. A. 2003. "Tacking Stock: Toward a Richer Understanding of Police Culture." *Journal of Criminal Justice* 31 (3): 199–214. doi:10.1016/S0047-2352(03)00002-3.
- Polanyi, M. 2009 [1966]. *The Tacit Dimension*. Chicago: Chicago University Press.
- Ratcliffe, J. H., R. B. Taylor, and R. Fisher. 2019. *Conflicts and Congruencies between Predictive Policing and the Patrol Officer's Craft*. online first. doi:10.1080/10439463.2019.1577844.
- Reckwitz, A. 2002. "Towards a Theory of Social Practices: A Development in Cultural Theorizing." *European Journal of Social Theory* 5 (2): 243–263. doi:10.1177/13684310222225432.
- Rhodes, R. A. W. 2016. "Recovering the Craft of Public Administration." *Public Administration Review* 76 (4): 638–647. doi:10.1111/puar.12504.
- Schatzki, T. 1996. *Social Practices: A Wittgensteinian Approach to Human Activity and the Social*. Cambridge: Cambridge University Press.
- Schön, D. A. 1983. *The Reflective Practitioner: How Professionals Think in Action*. New York: Basic Books.
- Schramm, W. 1971. "Notes on Case-studies of Instructional Media Projects." Working paper. Washington DC: Institute of Education Sciences. <https://eric.ed.gov/?id=ED092145>
- Schulenberg, J. 2015. "Moving beyond Arrest and Reconceptualizing Police Discretion: An Investigation into the Factors Affecting Conversation, Assistance, and Criminal Charges." *Police Quarterly* 18 (3): 244–271. doi:10.1177/1098611115577144.
- Schwartz, B., and K. Scharpe. 2010. *Practical Wisdom: The Right Way to Do the Right Thing*. New York: Riverhead Books.
- Sennett, R. 2009. *The Craftsman*. London: Penguin Books.
- Shearing, C. D., and R. V. Ericson. 1990. "Culture as Figurative Action." *The British Journal of Sociology* 42 (4): 481–506.
- Shearing, C. D., and R. V. Ericson. 1991. "Culture as Figurative Action." *The British Journal of Sociology* 42 (4): 481–506. doi:10.2307/591444.



- Sherman, L. W. 1980. "Causes of Police Behavior: The Current State of Quantitative Research." *Journal of Research in Crime and Delinquency* 17 (1): 69–100. doi:10.1177/002242788001700106.
- Smith, B. W., K. J. Novak, and J. Frank. 2001. "Community Policing and the Work Routines of Street-level Officers." *Criminal Justice Review* 26 (1): 17–37. doi:10.1177/073401680102600103.
- Smith, B. W., K. J. Novak, J. Frank, and C. Lowenkamp. 2005. "Explaining Police Officer Discretionary Activity." *Criminal Justice Review* 30 (3): 325–346. doi:10.1177/0734016805285260.
- Smith, D. A., and C. A. Visher. 1981. "Street-level Justice: Situational Determinants of Police Arrest Decision." *Social Problems* 29 (2): 167–177. doi:10.2307/800422.
- Stroshine, M., G. Alpert, and R. Dunham. 2008. "The Influence of "Working Rules" on Police Suspicion and Discretionary Decision Making." *Police Quarterly* 11 (3): 315–337. doi:10.1177/1098611107313029.
- Terpstra, J. 2011. "Two Theories on the Police – The Relevance of Max Weber and Emile Durkheim to the Study of the Police." *International Journal of Law, Crime and Justice* 39: 1–11. doi:10.1016/j.ijlcrj.2011.01.009.
- Terrill, W., and E. A. Paoline. 2007. "Nonarrest Decision Making in Police-citizen Encounters." *Police Quarterly* 10 (3): 308–331. doi:10.1177/1098611107299998.
- Trommel, W. A., and J. C. J. Boutellier. 2018. "The Emergence of a New Paradigm in Governance of Welfare and Security." In *Emerging Governance: Crafting Communities in an Improvising Society*, edited by J. C. J. Boutellier, and W. A. Trommel, 9–28. The Hague: Eleven.
- Tummers, L. L. G., and V. Bekkers. 2014. "Policy Implementation Street-level Bureaucracy and the Importance of Discretion." *Public Management Review* 16 (4): 527–547. doi:10.1080/14719037.2013.841978.
- Tummers, L. L. G., V. Bekkers, E. Vink, and M. Musheno. 2015. "Coping during Public Service Delivery: A Conceptualization and Systematic Review of the Literature." *Journal of Public Administration Research and Theory* 25 (4): 1099–1126. doi:10.1093/jopart/muu056.
- van Brakel, R. 2016. "Pre-emptive Big Data Surveillance and Its (Dis)empowering Consequences." In *Exploring the Boundaries of Big Data. Amsterdam/Den*, edited by B. Sloot van der, et al., 117–144. Haag: Amsterdam University Press/WRR.
- van Dijk, A., F. Hoogewoning, and M. Punch. 2015. *What Matters in Policing: Change, Values and Leadership in Turbulent Times*. Bristol: Policy Press.
- Waddington, P. 1999. *Policing Citizens: Authority and Rights*. London: Routledge.
- Williams, M. L., P. Burnap, and L. Sloan. 2017. "Crime Sensing with Big Data: The Affordances and Limitations of Using Open-source Communications to Estimate Crime Patterns." *British Journal of Criminology* 57 (2): 320–340.
- Willis, J. J. 2013. *Improving Police: What's Craft Got to Do with It? (Ideas in American Policing, 16)*. Washington DC: Police Foundation.
- Willis, J. J., and S. D. Mastrofski. 2017. "Understanding the Culture of Craft: Lessons from Two Police Stations." *Journal of Crime and Justice* 40 (1): 84–100. doi:10.1080/0735648X.2016.1174497.
- Willis, J. J., and S. D. Mastrofski. 2018. "Improving Policing by Integrating Craft and Science: What Can Patrol Officers Teach Us about Good Police Work?" *Policing and Society* 28 (1): 27–44. doi:10.1080/10439463.2015.1135921.
- Yin, R. K. 2013. "Validity and Generalization in Future Case Study Evaluations." *Evaluation* 19 (3): 321–332. doi:10.1177/1356389013497081.