

## Policing Matter(s)

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## Summary

### **Introduction**

Policing matters. The obvious reading of this book title suggests that policing services are likely to gain an increasingly important role in contemporary (European) societies. Of course, policing has been one of the key institutions of sovereign states, entrusted with the use of force in a large array of situations and activities. Policing matters in controlling crime, in protecting property, in securing order and in many other situations with potential for conflict, disturbance and deviance. Moreover, policing receives new challenges and importance against the background of heightened levels of global terrorism and of an increasingly mobile and migratory citizenry, in which massive amounts of people, goods and information are able to move across areas, often in different cities and jurisdictions.

At the same time, these broader socio-technical trends are fostering processes that are not leaving policing matters unchanged. On the one hand, a movement in policing promotes a shift from reactive, investigative approaches towards more proactive and preventive styles. While reactive policing aims to solve committed crimes, proactive approaches aim to strengthen the preventive character of policing. This involves risk assessments rather than only post-factum identification of suspects and perpetrators, assessing suspicious behaviour before an actual crime is committed or performing profiling and early signalling.

On the other hand, a constant of this trend has been the increasing engagement of digital surveillance for exercising decision-making and resource allocation. Digital technologies have become pervasive in our environments and are increasingly relied upon in many policing practices. From intelligent video surveillance and other sensors distributed throughout our smart cities to profiling algorithms and geographical information systems – processing location data and connecting to other databases to enable spatial-temporal analyses – information technologies are steadily becoming constitutive of contemporary policing. Police bodies may vary widely in terms of their organization, functions, themes, priorities or jurisdictions, but they share styles, models and technologies for doing policing.

Chapter 2 gives an overview of contemporary policing models and their association to information technologies: Community policing and its ‘low-tech’ practices, Compstat and geographic information systems, intelligence-led policing and surveillance technologies, and knowledge-based policing and automated profiling. This review of policing literature includes a brief historical account of the ways in which these influential policing models came about in the past decades. At the end of the chapter, the reader should be familiarized with the panoply of contemporary policing models and associated information technologies.

### **Questions and approach**

While information technologies promise to improve the speed and efficiency of police decisions in protecting us from criminal manifestations, they may also bring about problematic outcomes: erroneous interventions that are difficult to prevent, as databases often contain hidden partiality,

ambiguity and error; violations of personal privacy, as they facilitate easy access to the personal data of large numbers of people; discriminatory measures towards persons, groups, areas or communities, as algorithms often contain explicit or implicit, intended or unintended problematic classifications – often based on behaviour but also on socio-economic status and identity attributes (e.g. race or ethnicity); erosions of the presumption of innocence, as they automatically generate indicators of suspicious behaviour before/without crimes being committed; and redefinitions of deviancy and suspicion that call for critical reflection.

These kind of practices and outcomes can have profound social influences: they can lead to unjustified arrests, provoke debates, influence laws, trigger protests and in general shape our society. Of course, issues such as false positives, privacy violations or discriminatory practices are not new in police studies. The gap that may need extra attention though concerns the detailed role of information technologies in these practices. If we want to promote a fast and efficient police while avoiding problematic outcomes we need to investigate the role that technologies play in influencing the decision-making process in policing. If fundamental human rights and values should be persistently upheld, if we want them to play an important role in shaping our future societies, it matters how policing is done. If we want a police that is transparent and accountable in a dynamic, technologically-pervaded environment, this gap needs to be bridged.

From one direction of this ‘bridge’, the present book aims to contribute with an analysis of the ways in which digital technologies are implicated in transformations of policing practice. This implies a study of their role in changing policing routines, shaping practitioners’ perceptions and influencing police action. Therefore, one set of sub-questions derived from this goal looks at the ways in which technologies influence police decision; what roles do they play in processes of inferring suspicion; how do they influence practitioners’ behaviour? In sum, what are the police doing with technologies and what are the technologies doing to them?

If the problematic outcomes of certain contemporary policing practices partially stem from the normative charge of technologies, we should also reflect on the ways in which norms get built in technology design. From the other direction of the ‘bridge’, this book aims to contribute with an analysis of the ways in which the design of policing technologies is being shaped within socio-technical arrangements. This implies asking what values are implicitly built in policing technologies; how do designs get their moral charge; how do values and norms get to play a role in the design of classifications, profiles or suspicion categories in police systems; how do the developers of technologies explicitly build values and norms in design; what are the ethical implications of the practice of translating norms and values into computer code?

Engaging in an analysis of the policing matter – i.e. the material dimension of policing – with potentially profound implications for social values and fundamental human rights, requires a sufficiently broad understanding of the relations between technology and society. In this respect, the book draws on the body of knowledge developed in the fields of police studies, social studies of science and technology, philosophy of technology and surveillance studies.

Chapter 3 offers an analysis of the ways in which technology has often been rendered in the policing studies literature. Drawing from insights from philosophy of technology, the chapter illustrates the influence, implications and limitations of several discourses on technology. It points out how some authors render technology as a tool for efficient police work or as being instrumental for implementing organizational innovations in policing, while others give it an almost autonomous agency, whether with a positive or a negative character. In-between these views the chapter lays out the analytical stance of the book. It explains and shows the relevance

of insights from science and technology studies (STS), surveillance studies and philosophy of technology in providing a more nuanced analysis of policing practices.

The study analyses the mediating role of technologies in contemporary policing. It does this by studying socio-technical arrangements in a variety of organizational settings. Instead of focusing considerations on one policing context, the chapters analyse the mediating role of technologies within multiple sites and policing situations. These span a diverse range of European police organizations – from local to national – concerned with multiple issues and crime phenomena – from youth delinquency to road policing – and adopting a broad range of policing styles – from community policing to intelligence-led policing and knowledge-based policing. The technologies include well known and widespread technologies such as geographic information systems as well as more recent projects where police organizations experiment with sensor networks, social media monitoring and other technologies and institutional innovations. The following three chapters of the book explore the ways in which various technologies mediate practices such as geospatial analysis of crime phenomena, mapping and monitoring risky or problematic persons, groups or areas and profiling suspicious behaviour.

## **Empirical data**

Analysing a diverse set of practices within socio-technical systems helps to chart the networks of relations between police officers, technologies, organizational innovations and the legal frameworks in which they operate. In this way I was able to investigate not only the legal frameworks and procedures that specify how things should be done but also the ways in which police officers and agents work with technologies in their daily routines. Following officers, agents, constables and analysts and analysing the mediating role of technologies in these practices paints a richer picture of how practitioners perceive crime phenomena, how they act with and react to the output of technologies, and how decisions are taken in technologically mediated policing.

Chapter 4 draws on research at a local police station in Romania. It offers an analysis of practices associated to geographic information systems (GIS) as a widespread and well established technology in policing. The chapter demonstrates that rather than playing a mere instrumental role, technologies actively participate in mediating police perception of suspects. It does this by starting from a detailed analysis of an observation about the geo-positioning of a report about a suspect. The suspect report proved to be about a young Roma boy. The chapter shows how the report was insufficiently justified but still mediated the perception of practitioners about the boy. In these ways together, the classification ‘suspect’ accumulated in a set of implications for his presumption of innocence. As the practitioner’s attitudes tended to rely on the information system, suspects were rendered potentially vulnerable during encounters with the police. At the same time, the chapter shows how the system design was influenced by a combination of organizational reforms and software design choices. This detailed analysis of a basic routine renders suspicion as a complex socio-technical construct, even in the seemingly simplest and widespread technologically mediated practices.

Building on the insights of the previous insights, chapter 5 shows how technologies mediate police action. The chapter looks not only at the classification and geographic mapping of youth but also at more recent policing practices: proactive social media monitoring of youth groups. It draws on data in the Netherlands, where ‘problematic youth groups’ are under systematic

police surveillance as part of comprehensive proactive approaches. The chapter shows that larger data gathering from social media is entailed by the ways in which youth groups are enacted as ‘cases’ and performed as ‘problematic’ in government discourses and police statistics on the matter.

Chapter 6 makes a transition from asking questions about the role of technologies in influencing the practitioners’ behaviour towards questions about the design of policing technologies. It asks how do technologies get their value charge and in-built norms? In particular, it investigates how ‘the idea of privacy by design’ was translated in configurations of sensor networks and employed in policing practices. The chapter draws from data in both The Netherlands and England, where automatic number plate recognition (ANPR) technology is widely employed in road policing practices.

The chapter contrasts phenomena related to the design choice of storing all traffic data (police in England) and of programming real-time profiles, informed by knowledge rules and combined with cryptographic techniques (Dutch police). This latter engagement with sensor networks (among which ANPR is seen in the police as one type of sensor) is regarded by the Dutch police as promising for both identifying suspect behaviour in big flows (of vehicles, ships, transactions, etc.) while being ‘protective of privacy by design’ for most of the other traffic participants.

From the empirical findings of the chapter we learn that, in practice, profiles need to adapt frequently to changes in criminal behaviour and consequently have a high number of false positives and false negatives. They become effective only after the police know what suspect behaviour they are looking for. Throughout participant observation sessions it became apparent that this way of working can deliver on its promises only when support is given to knowledge sharing between branches of the police (such that the police can select suspicious behaviour and protect the privacy of those that do not match the criteria of the profile). In the end, the chapter highlights that the profile design – with their criteria and knowledge production processes – becomes an important locus of ethical reflection concerning the engagement of sensor networks in police surveillance.

The analyses in these three chapters show various ways in which technologies mediate the police practitioners’ perception, decisions and actions concerning criminal phenomena. Rather than forming only in their minds, ‘a suspicious group’, ‘a dubious activity’, ‘a fishy behaviour’ is also what the screens enact as such. Entities that play important roles in influencing police decision, behaviour and action are software-enabled artefacts such as profiles, classifications and algorithms. Their design mediates intensified surveillance and influences privacy revocation, discriminatory practices and other values and principles with ethical implications. Much more than a mere set of tools, the material dimension of policing works has a significant influence regarding who is seen as suspicious and how, when and where the police puts under surveillance.

Of course, distinguishing between innocents and criminals, normal and deviant, order and disorder are some of the main tasks of policing practitioners, with which we invest them to enable crime control and keeping our societies safe. Still, being invested with a monopoly on the use of power requires that practitioners and police organizations perform these entities – ‘suspicious’, ‘abnormal’, ‘criminal’ – in such a way that they protect the members of society from both crime and their own potentially erroneous, prejudiced and disproportionate interventions.

On the one hand, new information technologies often improve existing policing practices. Connected databases, digitized routines and pervasive screens bring about a more efficient decision making process as well as a more informed practitioner. On the other hand, we have seen that software-enabled representations, algorithmic profiles or system classifications can incorporate identity attributes and prejudiced views towards particular categories. When prejudice is embedded in code, logged in classifications and displayed on screens it matters less how well intended are the individual police agents. Solidifying in infrastructures, these software enabled artefacts become invisible and implicitly guide the policing of groups, categories, areas, persons or communities.

## Synthesis

This thesis makes the argument that technologies in policing matter. The last chapter summarizes the findings and discusses a set of themes that cut across the empirical material. First, it discusses the role of technologies in processes of inferring suspicion. Drawing from the material of the previous chapters it shows a paradoxical *solidifying effect* induced by technologies in mediating suspicion and legitimizing surveillance. Despite the flexibility offered by code, software enabled entities related to ‘suspicious behaviour’ or ‘problematic groups’ contribute to solidify the practitioners’ perception. Once a suspect in a proactive policy is ‘in the system’ it becomes much more prone to have this status maintained and strengthened. Even if police officers consciously know that they should not take the ‘suspect’ category as proof of crime, in practice many officers often tend to rely on what they see on the screens as adequate representations of reality. Relying on the corrections that can occur along the criminal justice chain, many policing practitioners, especially field agents, tend to take technologically mediated suspicion as incentives for alertness or surveillance. Understanding surveillance as a non-harmful action, relaxes the need for further justifications. In these conditions, the slightest suspicion becomes a sufficient condition for engaging in surveillance.

Of course, surveillance is one of the typical police actions. It often turns out to be justified as the entity placed under surveillance proves to be the actual culprit. Still, the chapters of this book show that suspicion remains prone to partiality and inadequacy, also when it is mediated by technologies. Rather than being adequate representations of reality – justifying surveillance or supporting prosecution in the criminal justice chain – technologically mediated suspicion appeared here quite questionable, partial and vague. Through their ‘solidifying’ effect, technologies can further foster unjustified surveillance and erroneous interventions. Entering *a cycle of suspicion-surveillance* increases incentives for intervention and makes it difficult for the enacted entities to invalidate the reasons for which they raised police interest. Whereas in reactive policing surveillance can work to invalidate the suspicion-surveillance cycle, in proactive approaches it tends to foster it.

Second, the chapter discusses how this ‘solidification’ effect impacted police relations with communities, groups and categories of citizens. It shows how the design of policing infrastructures can accumulate ‘depositions of prejudice’ in a sedimentary process. These ‘sediments’ that trickle down in technological infrastructures tend to harden and become simultaneously potent and invisible. In these ways together they contribute to eroding the trust between communities and the police when they carry hidden discriminatory potential.

In this sense, I propose to understand this phenomenon with an analogy from geology. Borrowing a notion from this discipline, we might call this a ‘sedimentation’ process that takes place in the context of design. In geology, the term sedimentation is used to describe the gradual deposition from a solution (e.g. water), which results in settling and accumulation into sedimentary rock (e.g. on the river bed). Particles that form a sedimentary rock by accumulation are called sediment. In the context of policing I want to suggest that technological infrastructures can entail a gradual disappearance from attention and scrutiny of classifications, categories, algorithmic steps, architectural decisions or identity attributes. Getting ‘trapped’ into infrastructures, prejudice can accumulate, harden and acquire a character of objectivity. At times, it rises to the surface, becoming potent and effective in mediating police action towards the enacted entities.

We have seen this phenomenon for instance in Chapter 4, in the situation of the community policing in Romania. In the local police system the representation of ‘begging’ was coded with black dots. The views of the police officer who happened to configure the system got built into the technological infrastructure and trickled down further in the practices of the other officers who worked with the system. Her views concerning the begging practices of Roma ethnics generalised in the technological infrastructure through the GIS representations. From then on, they accumulated and acquired new strength and spread. Not only was the GIS displaying one black dot on the screen but these automatically multiplied in every weekly map with ‘the beggar distribution’ throughout the city. As the other interviewed officer confirmed, the software-enabled maps evoked a cumulative effect. All begging was done by Roma ethnics. Irrespective of the statistics on the matter, the technological infrastructure induced a uniform perception of the phenomenon. At the same time, without the interview question, the interviewed officer was not aware of the origins and action of the software-enabled artefacts of the colour codes. In this way, ‘the past’ sediments in infrastructures and carries on prejudice into ‘the future’.

Third, and finally, the chapter discusses more generally the relation between technology design and values with moral importance. Drawing from the findings of the previous three chapters, it highlights the multiple ways in which particular conceptions of values such as non-discrimination and privacy were implicitly and explicitly built in and influenced by technology designs. This part of the chapter argues that values in policing should not only be the realm of discourse and policy making but also of technology design. It argues for the need and opportunity for a larger uptake of Value Sensitive Design in developing but also managing technologies in policing. Engaging in a Value Sensitive Design approach in daily policing could nurture an environment that increases the chance for more transparent and ethically informed ways of developing profiles, classifications, algorithms or material arrangements. After all, policing in democratic societies needs to protect citizens from both criminal manifestations as well as unjustified surveillance and discriminatory actions. We need both privacy and integrity, safety and security, justice and non-discrimination.

Still, the chapter ends by qualifying this suggestion. Building of values in design is a promising undertaking but far from a silver-bullet solution to avoid all problems in policing. Technologies work in complex networks of organizations, laws, policies and criminal phenomena in constant change. If we want to promote an efficient and transparent police as well as to avoid problematic outcomes, we need to continuously analyse technologically-mediated policing practices in the socio-technical ensembles in which they feature.

## Conclusion

A final reading of the book title proposes an investigative effort in the material dimension of policing. In this sense, we need to develop and engage in *a sedimentology of infrastructures* of which this book offers the first steps. Identifying, investigating and defusing potentially explosive ‘pockets of prejudice’ that may have formed in our infrastructures, opening up the criteria of suspicion algorithms or creating a more transparent surveillance are all measures towards increasing trust in policing among minority groups, communities and society at large.

Applying the insights of this discipline might help us to understand how sedimentary deposits form and change through time and space while a *lithology of technological environments* could describe their types and characteristics. A geological way of understanding infrastructures maintains the approach of ‘digging up’ strata that potentially encapsulate relevant deposits while simultaneously resisting a priori anthropocentric explanations. Unlike archaeology, which studies human activities in the past, *a sedimentology of infrastructures* might prove here an adequate metaphor to study a whole set of processes that may or may not be traceable to an initial human activity. Of course, design choices imply designers but the phenomena we have seen in this book require an understanding of infrastructures that allows for sedimentary processes and accumulations.

Bringing in notions from geology to understand technological infrastructures becomes even more relevant in a context in which many organizations engage in practices of data ‘mining’ – yet another metaphor closely related to the enterprise of understanding and exploring sediments. The vocabulary of many contemporary policing departments is pervaded with ‘data mining’ practices in which police analysts seek to ‘extract’ patterns of behaviour that may be ‘hidden’ within large ‘piles’ of data.

A geological metaphor to understand infrastructures may not only conjure up an image of solidified entities but also an image of *flows* of debris, processes of *erosion*, volcanic *explosions* and other dynamic processes. Haggerty and Ericson (2000, 611) also speak of the trails of information about a person’s habits, preferences, and lifestyle as ‘the *detritus* of contemporary life’. Unifying all these metaphors, shows even more the relevance of engaging in a sedimentology of technological infrastructures to identify potentially relevant sediments that may have formed within algorithmic steps, software layers or architectural features.

As documented in this book, the location of sediments of prejudice can range from ‘close to the surface’ – as in the case of recently finished algorithms or accessible program parameters – to the deep architectural decisions that tend to be forgotten, persist over the years and get taken for granted. On the one hand, being taken for granted is often manifest in programmers’ habits of copy-pasting existing code to new versions that maintain algorithmic choices in its ‘layers’ of software code. On the other hand, when such ‘sediments of prejudice’ come to the fore they tend to induce a perception of objectivity towards the enacted group or community, often affecting their presumption of innocence, privacy, and other values with moral import.