

English Summary

Introduction

Technologies that collect and analyse personal data about people and their behaviour, surveillance technologies, are introduced in ever more parts of daily life. In this dissertation I investigate the experimental manner in which they enter crime control practices in the Netherlands. My concern is with how they change crime governance, understood here as the practices of making crime 'measurable and manageable' (Amoore and De Goede, 2005, p. 149). In answering this question, however, I do not take the operation of surveillance technologies for granted. Therefore, my research question is: how do surveillance technologies and crime governance affect each other in experimental practices? I address both how experiments work in terms of processes and practices, and the rearrangements in crime governance they produce.

The experimental practices I focus on are pilot studies. Pilot studies test an innovation by using it 'in the spirit of experimentality' for a restricted period in a field setting, such as a police station or a shopping centre (Vreugdenhil et al., 2010). In crime control they typically involve actors from such fields as policing, public transport, corporate consultancy and academic research. Pilot studies are frequently organised in Dutch crime control because government supports, and subsidises, experimentality and unorthodoxy. This thesis presents an ethnographic study of three pilot studies. The cases are experimental practices with acoustic aggression detection used by a local police station; data mining used by a local government; and Codemark, a spray with traceable liquid ('synthetic DNA') used by ticket inspectors in public transport to mark suspects of assault.

Pilot studies are often understood as temporary and inconsequential. However, technologies can introduce new types of suspects, behavioural norms, and require new working routines of security officials. From the main social scientific field of research informing this study, Science and Technology Studies (STS), we learn that experiments do not so much discover truths, as produce them. Actor-network theory (ANT) especially points out that experimenters need engage in the work of 'translation', establishing the relations between actors by which entities are performed. Thus pilot studies constitute what surveillance technologies observe, and thereby who or what should be monitored, how, and by whom.

Experimental practices are therefore a good starting point to start understanding how surveillance technologies affect crime governance. In this thesis I particularly connect with authors emphasising unstable and emerging natures of collectives of human and non-human actors (often referred to as post-ANT). As this approach is especially sensitive to rearrangements, fragilities and frictions in technologies, I suggest it can contribute insights to conceptualisations of technologies as part of assemblages (Deleuze, 1992; Haggerty and Ericson, 2000).

I show that in such theorisations of the political and social relevance of surveillance technologies, technologies are mainly taken to extract information, link, code and sort. In this study of pilot projects, I therefore address the theoretical concern of conceptualising surveillance technologies and the empirical concern of documenting of what happens when technologies are introduced in a new practice. I aim to contribute to two fields: surveillance studies and STS.

Turning Aggression into an Object of Intervention: Tinkering in a Crime Control Pilot Study

In 2010 and 2011, a bus station in a large Dutch city was the site of a pilot study of acoustic aggression detection. The technology alerted a nearby police station if a person sounded aggressive. The pilot was conducted by the police and local government to learn whether the technology would reduce crime rates and help local bus drivers feel safer.

To be aggressive, however, is not an offence according to Dutch criminal law (as opposed to assault). The technology introduced a new object of intervention: acoustic aggression. It therefore put at stake the emotions one is allowed to express in public space, the authorities deciding over this, the mandate for intervention, and the method of intervention. In other words, the introduction of aggression detection includes experimenting with the legitimate use of force, a central principle of the constitutional state.

The chapter aims to contribute to a relational understanding of experimenting to the existing literature about ‘real-world experiments’ (cf. Krohn, 2007; Gross, 2010). I conceptualise the operation of the pilot study as tinkering: the hands-on work of adjusting the relationships between each member of a collective in the face of frictions, surprises and disturbances (Knorr, 1979; Mol et al., 2010).

The tinkering practices are studied on three places: at the head office of the technology supplier; at a local community safety department, and at the police control room where the aggression detection alarms were received. At each of these locations the pilot participants tinkered to constitute a different acoustic signal of aggression. Aggression was constituted as a characteristic of the aroused body of club-going people (shouts); as an experience of aggression by bus drivers (bus horn); and finally the aggression detection alarm was silenced in favour of a notion of aggression on the basis of information from police databases and system alerts.

Nevertheless, acoustic aggression was accepted as an observable phenomenon. The test site, so police and corporate participants argued, was not right for this technology. The technology itself was not subjected to closer scrutiny. Consequently, an understanding of the ‘aggression moment’ as a discrete observable phenomenon remained present in policy practices.

A close examination of these tinkering practices, moreover, points out that various actors were excluded from the aggression signal. By dismissing the bus horn as a signal of aggression, for instance, bus drivers were excluded from deciding over relevant cues for intervention. In tinkering processes, actors and events at the pilot study location are only selectively made relevant. Pilot studies, trials, and tests are therefore formats which produce partial accounts of reality together with accounts of technology. In each real-world experiment, the site of implementation would be made relevant differently. The case of aggression detection demonstrates that how exactly the ‘real world’ is made relevant needs to be considered as it has an effect on the truth status of the introduced objects of intervention.

Data Mining ‘Problem Youth’: Looking Closer But Not Seeing Better

In 2011, the Dutch municipality of Burgcity conducted a pilot study about data mining. Policy makers aimed to find out whether this statistical technique could be used to improve its understanding of ‘problem youth’, loosely defined by the city as youth below twenty-three years of age who are likely to commit minor offences such as vandalism, littering or shop theft. In particular, it aimed to learn whether a combination of municipal data, police data and commercial data about consumption could lead to new insights to inform youth crime policy.

I focus on the constitution of digital identities of problem youth using data mining. Especially salient in this pilot study was the policy makers’ use of the metaphor of ‘zooming in’. The policy makers expected data mining to provide knowledge that was local, particular and timely. Proponents of data mining promise increased detail and granularity. Zooming in is a risky metaphor, I argue, because when brought into practice, it suggests that digital representations of youth have a high truth status. It justifies the collection of ever more data and the use of profiles. The chapter therefore challenges zooming in as a data mining metaphor by showing how it was done in practice and by drawing out the normativities that were embedded in and produced through this work.

Donna Haraway (1991) and Marilyn Strathern (2005) suggest that research practices do not represent populations but produce them. Strathern especially engages with the activity to change perspective. She argues that perspectives do not present different versions of reality, but enact the object in different, partially connected ways. For zooming in this means that one does not see a part of the same object in more detail. When scientists, corporate analysts, policy makers or others zoom in, they bring an object into being.

I describe the ‘situated improvisations’ (Goodwin, 1995) of analysts and policy makers in the data mining pilot study to show how they attempted to arrive at detailed knowledge. I identify two modes of situated improvisation: evocation and comparison. These were conducted by the interplay of screens, professional knowledges, paper maps, local politics and regimes of evidence. By relating these heterogeneous entities, one does not acquire

a better view of a smaller part of the same object, but a new object of intervention is brought into being. In this case, problem youth shifted from relations between categories of administrative everyday knowledge and objects in the neighbourhood, such as swimming pools, to relations between youth from comparable neighbourhood in different cities.

We also learn about the normativities implicated in zooming in. First, results needed to be made relevant as surprises. Second, zooming in had a focus: useful knowledge was knowledge at the level of the neighbourhood. Third, as the previous remark also indicates: zooming in depended on the application of more general categories and aggregated data. Fourth, establishing a closer look depended on decisions about what counts as good evidence for policy practice.

I conclude with the observation that a range of metaphors circulates digital identification practices such as data mining. Aside from zooming in, actors use ‘connecting the dots’ (Amoore and de Goede, 2008), ‘deep knowledge’, and ‘obscured knowledge hidden in the data’. These metaphors, I suggest, help perform the seemingly endless analytical possibilities of these technologies. We need to attend to them as situated practices in order to change the terms by which digital identities are produced.

Provocation: The Intensity of Technology in the Surveillance of Public Space

Codemark was used in a pilot study in 2010 and 2011 by an urban public transport company in The Netherlands. Codemark is a transparent liquid containing synthetic DNA, an industrially manufactured string of fifteen to twenty base-pairs (DNA’s molecular building blocks). The string functions as a ‘code’ that can be sprayed on the assailant’s body. In case the sprayed person would be caught by the police within a week, the code found on the body of the alleged offender could be matched with the code on the spray can worn by the inspectors. It was introduced to empower ticket inspectors, a professional group that has increasingly reported verbal and physical abuse over the past decade.

Codemark is an example of an array of technologies introduced to (semi-)public spaces to maintain law and order by tracking and monitoring persons. However high tech or low tech, such technologies take part in the constitution and enactment of identities. This has consequences for the quality of public life because performing identities affects how individual liberties can be exercised and how authorities can be held accountable (Amoore, 2008; Németh and Schmidt, 2011). In this chapter I therefore ask how passenger and inspector identities are affected by Codemark’s usage.

The chapter aims to develop an alternative conceptualisation of technology in the context of the surveillance and control of public spaces. Scholars concerned with the socio-technical arrangements (such as actor-networks, infrastructures and assemblages) that constitute surveillance have predominantly addressed how these technologies integrate into regimes

of surveillance and control. Technology does silent and invisible work, it is argued (Bowker and Star, 1999; Adey, 2004). From feminist strands of STS and material semiotics I adopt an engagement with the ways in which technologies and identities come into existence outside of the realms of the standardised and dominant (Star, 1991; Haraway, 1997).

Drawing on Rolland Munro's conceptualisation of identity as motile, I show that technologies can make identities stand out in the precise moments in which this is relevant (2001, 2004). Artefacts may 'call' for the display of an identity. During trainings, inspection rounds and in evaluation practices both passenger and inspector identities were articulated. Codemark, in collectives of materials, gestures and words, was a stimulus for denied identities to be made present. For instance, Codemark, together with the commands and gestures of pepper spray and various verbal objects of repression and injustice made a passenger's victimhood stand out.

Codemark took part in identity articulations that were deviant, provisional and emotional. Drawing on the work of Javier Lezaun, Fabian Muniesa and Signe Vikkelsø (2012) about social scientific experimentation, I suggest to refer this socio-material production of identities as 'provocation'. Provocation contrasts with conceptualisations of the role of technology in surveillance as silent and on the background. It indicates the need to work on alternative conceptualisations of technology in terms of temporality and visibility.

Governance by Pilots: Organisational Ambiguity in Crime Control

Pilots have become an accepted practice in Dutch crime governance. They help policy makers and other professionals to act in light of technology's promises and uncertainties regarding technologies offered by the market. Yet pilots seldom seem to deliver conclusive answers (Billé, 2010; Vreugdenhil, 2010), as is also evidenced by the cases discussed in the previous chapters.

Even though organisational ambiguity seems to characterise pilot studies and similar experimental formats, scholarly work is traditionally not well equipped to understand it (Law and Singleton, 2005). It is assumed that pilots are either organised as finite, unambiguous, coordinated projects, or that, being experimental, they are largely free from organisational restrictions. My aim is not to resolve or reject ambiguity, but to take it seriously. I ask how the organisational form of pilots is relevant in crime governance. Or: what does it mean to govern by pilots?

The pilot studies from the three previous chapters are revisited to learn how pilot studies come into being as 'organisational objects' with ambiguous characteristics (Hodgson and Cicmil, 2007). The aggression detection case shows how the pilot was brought into being as an organisational object characterised by mixed spatial and temporal dynamics. I show that the pilot's narration can be simultaneously local and urgent; routine; innovative and dislocated; and static. The data mining pilot highlights performances of indeterminacy alternating with determinacy. I distinguish two types of indeterminacy: open-endedness and inconclusiveness.

The Codemark pilot study, finally, points out that non-coherences were actively performed by combining seemingly incompatible logics.

These ambiguities are relevant because they affect how the potentiality of a technology is articulated. Articulating potentiality is part of naming, framing and realising future applications of technology (Taussig et al., 2013). It is part of governance because it directs future activity. For instance, indeterminacy allowed for articulating an open-ended future. The qualifications highlighted in this chapter are a potential for future application (elsewhere), an option (for a predetermined future) and an undesirable (yet necessary) application.

I finally propose ‘pilotness’ as a shorthand for addressing organisational ambiguity. Pilotness complements and contrasts with ‘projectness’, according to John Law the dominant cultural technology that organises science, technology and many other fields (2002). Understanding the clear, pure and controlled project as a performed reality typical of modernity, we might start to consider whether there also is a place for other ways of organising. Purity and rationality may no longer be the only ingredients for the production of truth and legitimacy, as they were in classical experimentation (Shapin and Schaffer, 1985). In the age of increasingly blurred boundaries between corporate, government and scientific practices, different registers of truth production combine (cf. Krohn and Van den Daele, 1998; Krohn, 2007).

Conclusion

Surveillance technologies took part in rearrangements in the objects, authorities, norms and governable spaces of crime governance. We learned about aggression as a bodily trait, about problem youth evoked by crime statistics, and about threatening and vulnerable inspectors. In line with observations in surveillance studies, the body and digital data have become two important sources of truth. However, the pilot studies did not lead to the introduction of stable and clearly delineated objects. I suggest that the pilot studies produced ‘lingering objects’. Lingered objects continue to exist, even though they are no longer in the centre of attention. They can remain invisible for extended periods but become relevant again when routines change.

Authorities, norms and governable spaces were rearranged alongside the new entities, although not always sweeping, controlled, permanent or dramatic. Intended authority shifts included transfer of responsibilities to private authorities (in the case of Codemark) as well as enlarging the municipality role in crime control (in the case of data mining). We learn that authority was not easily redistributed during the pilot studies. In the cases of aggression detection and Codemark, the existing intervening authorities were solidified (in both cases the police). With regard to the norms, the cases of aggression detection and data mining point out that new behavioural norms defined by engineers (acoustic aggression) and data analysts (neighbourhood consumption categories) were introduced without discussion or negotiation.

During the pilot studies, finally, existing governable spaces were shifted and re-enacted with the technology. In the case of data mining, for instance, neighbourhoods were reified as a units of intervention, and performed as places of crime and consumption.

The pilot studies in this book were incremental and embodied practices, yet at times disruptive. I conceptualised the practices and processes of the pilot study as tinkering, situated improvisation and provocation. These were relational processes, reconfiguring relations between various human and non-human actors. At times, actors were excluded from such relations, as was the case with bus drivers in the aggression detection case. Not only were relations rearranged, at time the supposed failure of technology entrenched existing relations. With regard to the processes and pilots we furthermore learn that the ambiguity of the pilot format, referred to as ‘pilotness’, affects the potentiality ascribed to a technology. Pilot studies thus provide a setting through which surveillance technologies affect the futures of crime governance.

The foregoing contributes to surveillance studies. We learn that a single technology changes form and function in varying ensembles of actors. In such varying ensembles, they do not only sort, but can also provoke. Furthermore, surveillance technologies become part of distributed surveillance practices, and are better understood as an ‘interactive dance’. To be put into practice, furthermore, technologies rely on imaginaries of operation (such as zooming in), in-between, professional knowledges, and senses such as hearing. Surveillance technologies operate in various intensities depending on their application; they are not only visible, but may also work on the foreground.

Added to the insights generated into pilot practices in this thesis, I argue that this dissertation informs an understanding of assemblages as distributed and unpredictable operations of power and control (cf. De Goede, 2012).

To STS this study contributes surveillance and crime control as relevant empirical repertoires. One such insight, about lingering objects, contributes to post-ANT understanding of objects as enduring, yet not dominant and stable. It has also contributed to a vocabulary for addressing ambiguity. Finally, it contributes a description of a new public-private regime of truth production. This is a contribution to a recent line of work in STS that has shown the potential of collective experiments for scientific democratisation (cf. Callon et al., 2011). By contrast, the pilot studies in this thesis either did not allow for public participation at all or sparked harmful conflict when publics became engaged. We should therefore carefully map the variety of experimental forms developing in various domains of practice.

I aimed to intervene in the way in which pilots are often forgotten, neglected or considered inconsequential. My intervention is to conclude with the suggestion that pilot studies should be understood as a means of governance in which surveillance practices are executed and rearranged by the, often temporary, application of technologies. The dissertation suggests ways in which pilot studies take part in governance: 1) rearranging crime governance;

2) producing potentialities; 3) providing a space for the operation of surveillance technologies; 4) deciding over the truth status of experimental outcomes. The point of this argument is to take pilot studies out of the realm of exceptionality, and to incite a care-full stance. Aspects of this governance deserving critical attention and care are, among others, the exclusionary character of pilot studies; the dismissal of test sites as disturbing; and the sporadic ways in which pilots respect leading principles of constitutional democracies, laws and regulations. This is of special relevance in a society where we experimentally use a large variety of technologies collecting personal data. Pilot studies are means of governance in which technologies take part in rearranging the world we live in.