



CCTV, Risk Management and Regulation Mechanisms in Publicly-Used Places: a Discussion Based on Swiss Examples *

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Abstract

This paper focuses on the relations between different types of actors involved in both conceiving and using video-surveillance systems. More specifically, it deals with the reasons that support the growing use of video-surveillance systems, and the organisation structures and implementation schemes that are designed to cope with them. The analysis raises issues linked to the complexity of social and spatial relations that CCTV tends to produce. Based on four Swiss case studies chosen in function of different objectives (risks), different types of public spaces that are under surveillance (city centre, motorway, industrial zone, public transport), as well as different stages of completion of a CCTV project, the main results are to document new categories of actors: the definition of the relationship between CCTV-providers and end-users must be enlarged. Many more actors are playing important roles in terms of risk management and decision making while designing and implementing CCTV systems. Risks under surveillance: different types of risks are under surveillance. The study is underlining that different forms of surveillance must be distinguished, given the spatial characteristics of every risk (diffuse, located, specific and/or territorialized). The 'distancing effect': CCTV obviously creates distance between the object and the place where surveillance is actually made. To go a bit further, the paper claims that several kinds of distancing effects should be considered. These distancing effects modify both the quality of places under surveillance and the general context where mechanisms can be designed and implemented for a better public regulation of CCTV uses.

Introduction

This article sets out the main information which we gathered from a study carried out over 12 months in the context of the Action COST A14 'Government and Democracy in the Information Era' (November et al., 2003). It is divided into three parts. The first part recalls the general framework of the study, its aims, and the methodology adopted. The second part outlines the main question addressed. The third part then explains the concept of 'distancing'. Perceived as

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an essential output of the use of video-surveillance, ‘distancing’ helps to explain the difficulty of organizing a debate and of decision making on the subject of video-surveillance with respect for the democratic rules in force in our states, which are subject to the rule of law. Accordingly, taking it into account will most likely help to define in particular the characteristics of the rules necessary to counteract the negative impact of video-surveillance on the fundamental freedoms of the individual (privacy, freedom of movement).

Context of the study

The real scope of video-surveillance is still widely unknown in Switzerland, in particular for want of a systematic register of private and public surveillance cameras, recording the number of systems dedicated to the control of public spaces. At present, the work of Klauser (2001) concerning the consequences of video-surveillance on urban territoriality still represents one of the rare attempts made at the methodical identification of cameras which focus on public spaces in Geneva’s city centre. The remaining work currently available was written by legal specialists, and in particular by persons in charge of data protection and interested in the methods used in applications of video-surveillance, but not in counting them (Baeriswyl, 2002). More information on video-surveillance is available abroad. *Urbaneye*, a large research project carried out within the Fifth Framework Programme of the European Union, provides a comparative overview of video-surveillance in several national environments such as the United Kingdom, Germany, Hungary, Norway and Spain.⁴ In addition, in the United Kingdom, the following work should be noted: Brown (1995), Fyfe and Bannister (1996), Honess and Charman (1992), Norris and Armstrong (1999), Norris and Armstrong (1998), Webster (2000) and McCahill (2002). The Australian study relating to the city of Perth (Hiller, 1996) should also be mentioned, as well as the comparative study carried out by the *California Research Bureau* covering eleven American cities which installed video-surveillance systems to fight criminality, drug trafficking and crimes related to prostitution or gang problems (Nieto, 1997). In Germany, Büllsfeld (2002), Möller and Von Zezschewitz (2000) and Weichert (1998) have made extremely interesting contributions. In France the work of the Rives Laboratory of the ENTPE (Ecole Nationale des Travaux publics de l’Etat, *National School of State Public Works*) follows an approach relatively similar to ours (Betin et al., 2003), whilst Akrich and Méadel (1999) are developing a very sophisticated line of thinking on video-surveillance of private spaces from the perspective of the sociology of science and technology. Whilst these numerous contributions are enriching and valuable, their results, which are obtained from different national contexts, remain difficult to compare. Over and above the variety of forms and functions of video-surveillance, and the diversity of its scope, the difficulties of comparison are due to the specific details of the political contexts and of the legal regulations, which differ greatly. Finally we note that, generally speaking, criminologists and sociologists are particularly active in video-surveillance research. It is therefore interesting for us to participate also, using our knowledge as geographers.

Our study accordingly seeks to fulfil two objectives: to identify the legal rules available in Switzerland to regulate the use of video-surveillance, and to provide information, through case

⁴ Urbaneye website: <http://www.urbaneye.net>

studies, on the use of video-surveillance systems, whilst remaining mindful of the geographical (territorial) impact of video-surveillance. As regards our second objective, we were fortunate enough to be allowed into the Geneva CASTOR (Centre autoroutier de surveillance du trafic et de gestion opérationnelle des routes nationales, *Motorway centre for traffic surveillance and operational management of main roads*), to interview various parties (the person in charge of CASTOR, the person in charge of the technical video-surveillance system, operators) and especially to be able to observe freely the operations of the centre during a whole week. In addition, we methodically analyzed a dozen internet sites created by companies which supply video-surveillance systems in Switzerland. We then gathered various documents relating to other experiments either currently taking place or still at the planning stage in Olten (video-surveillance of street prostitution carried out by the Municipal Police), in Geneva (a project by Geneva Public Transport to install cameras in their vehicles) and in Bienne (a project by the Municipal Police to install cameras in the city centre).

Main issues

In view of the richness and complexity of questions related to the use of video-surveillance, we chose to restrict our research project to a limited number of aspects. We will present them briefly below in order to present a better overview both of the theoretical reference framework employed and of the main issues at stake.

Preventative video-surveillance

The first aspect chosen relates to the objective of video-surveillance. From the perspective of the relationship between those supervising and those under surveillance, two main categories may be distinguished. They are based on important functional differences. Preventative video-surveillance is used to prompt the person under surveillance to behave in the way required, whereas repressive video-surveillance is used to intervene immediately when the behaviour of the person under surveillance may be regarded as “undesirable” (Vitalis, 1998: 28). Our research project is limited to preventative video-surveillance. The distinction between prevention and repression is however an *a priori* distinction. In practice it has actually become clear that the systems in place frequently fulfil both functions jointly, thereby rendering any demarcation vague and difficult to carry out. The prevention criterion is however useful in identifying the case studies. It is easier to carry out fieldwork from a perspective of prevention given that the perspective of repression is inevitably more confidential.

Designers and users of video-surveillance

The second aspect identifies the parties concerned in the case studies. In view of their informational and symbolic power, surveillance cameras constitute new forms of both social and technical regulation. These are of course of such a nature as to amend the attitude and behaviour of those under surveillance. However, those under surveillance are not *a priori* conscious of the fact that they are under surveillance. They enjoy freedom of movement, and the cameras are discreet. It is consequently difficult to address issues relating to peoples’ perception of and attitude to video-surveillance if they do not even know that they are under surveillance. Therefore the subject of regulation is difficult to approach from that angle. The research project

consequently deals more specifically with video-surveillance as it is understood, perceived and practised by those who design the systems available on the market (designers) and by those who use them (users).⁵

Publicly used places

The third aspect relates to the spatial dimension. Generally speaking, the operational concept of a video-surveillance network, its scope, its impact, and also the risks it poses in regard to violations of the private life of those under surveillance cannot be understood without first referring to the territories concerned and 'created' by the installation of supervision cameras and by their performance (viewing angle, depth of the field of vision, light sensitivity, zoom). In that perspective, the project related to the video-surveillance of public spaces. A working definition of public spaces in the context of video-surveillance remains difficult to find. Demarcation based on the limits of real estate and on the status of its owner is clearly unworkable. A camera may very well be installed in a private space and focus both on private and public spaces. This distinction therefore does not necessarily correspond to the real life experience either of the users of video-surveillance, or of those under surveillance. Accordingly, we selected a different notion by bringing forward the concept of 'publicly used place' in order to go beyond the public/private division. The publicly used place is freely accessible to the public as a whole. Formally speaking, it is detached from its legal status, and in practice its regulation may perfectly well combine elements of both private and public law, albeit in variable proportions. This category therefore includes more particularly shopping malls, museums, public transport vehicles or pedestrian zones. Publicly used places are accordingly far from constituting a homogeneous spatial category. Moreover, case studies consulted in the course of research revealed relatively varied spaces in terms of the number and nature of people accessing the space, sociability (potential for social relationships), form and function.

Approach from the perspective of the sociology of science and technology

The fourth aspect arises from a conceptual perspective. It has an impact on the methodology adopted. Following the proposals of Akrich and Méadel (1999), and of Latour (1989), we consider video-surveillance as a sociotechnical construction. This amounts to envisaging it not as a lifeless and inert object, but rather as a system which is 'in the course of building itself'. It prompts a process which mixes both elements linked to its improvement and to its usage: it is the subject of constant research and development, and requires, during the whole process of bringing it into service, a whole series of micro-decisions and of micro-negotiations between numerous individuals. If one considers that, generally speaking, a sociotechnical system such as video-surveillance is both the product and the producer of social, political, economical and spatial processes, the whole question of research impels the analysis and comparison of the different methods of implementation of video-surveillance systems across a given territory. Here we would like to focus on understanding of the processes of video-surveillance installation. Accordingly, case studies mix different time sequences in order to be able to define practice whilst the video-surveillance system is at the project stage, once it is installed and when it is in

⁵ In the context of his PhD, Francisco Klauser addresses the subject of video-surveillance from the perspective of those under surveillance.

use (management, development and improvement).

Contribution of Geography

Our decision to restrict ourselves to publicly used places is essential to explaining our approach, as geographers, to video-surveillance. Questions related to the production and use of these spaces, and to the regulations governing this production and use, are at the core of our concerns. In this way, by focusing on publicly used places, that is to say on social meeting areas, which have qualities in terms of sociability and allow for the simultaneous presence of people representing both public and private interests, we seek to understand the way in which methods of production, use and regulation which combine the public and private sphere (as well as their respective bodies of law) are structured and how video-surveillance changes them.

We believe that having recourse to video-surveillance induces many processes which are extremely interesting, in particular because they combine methods of simulation and of domestication (Raffestin, 1997: 95-100). Simulation implies simplification. It involves modelling or a mock-up which attempts to reproduce something, as closely as possible. “The ultimate process of simulation would be the creation of an entirely man-made world, on a 1/1 scale, alongside the real world” (Raffestin, 1997: 97). Domestication then enters into play as a complement to simulation. “[Domestication] reflects the core of the system of intentions framed by the group culture” (Raffestin, 1997: 95).

Domestication and simulation are two key words which are useful to us in taking account of all the characteristics of sociotechnical interventions induced by video-surveillance. The control space under video-surveillance refers to a space which is abstract, indeed universal. Essentially, it is a room equipped with screens projecting the images of the observed spaces caught in the field of vision of the cameras. This room is used almost exclusively by the users of the system who have been assigned to the task of control. In addition, this task is carried out by means of pre-defined routines. These routines, which can be more or less sophisticated, are necessary for the operator to know what he is to keep under surveillance and when he must react – and the work of Norris and Armstrong (1997) clearly show all the biases that such an exercise may generate – for instance so that the system will set off an alarm when it is in automatic mode. To that end, the control space refers to a type of geography which we could regard as having no scale. It is indeed almost entirely devoid of the features which characterize the real observed space, and it is standardized in accordance with disciplinary codes which are both imposed on it and by it (Foucault, 1975; Raffestin, 1980). Real social meeting areas, on the contrary, involve a complex type of micro-geography. Ideally, they represent a space where social control may be exercised by all persons present simultaneously (known as co-presence) and control is produced by the values, attitudes and social standards harboured by these people. In such a set-up, control is characterized by a certain amount of flexibility. It is, by nature, exercised in a rather subtle, varied and unpredictable way. It is subject, for example, to adjustments and adaptations according to its framework. It may also vary in time and in space due to the fact that those persons present at a time x are not the same as those present at moment y .

To summarize, we could therefore say that, in the case of video-surveillance, simulation and domestication are at the core of sociotechnical intervention aimed at the fulfilment of at least two

objectives. Control is transferred from those persons co-present in the observed space to a video-surveillance system which converts it into an abstract space. Control is no longer dependant on the unit of time and place. Video-surveillance makes it possible to control from a distance and at a later time by recording the image.

The methodology of these sociotechnical interventions, that is to say the understanding of the whole of the process set up to design, organize, implement and manage a video surveillance system, is at the core of our line of research. But we did not only focus on this major concern, we also sought to direct our investigations in such a way as to be able to assess whether or not these interventions could be produced by means of public debates and decisions through the play of democratic procedures. We will outline the results associated with the whole of this question below.

Main results

A summary legal framework

Swiss law does not contain any provision explicitly regulating the use of video-surveillance cameras. The existing legal basis is applicable, in particular in regard to the protection of individual privacy. At this stage three major elements must be considered. Firstly, personal freedom constitutes one of the basic principles of the federal constitution. That principle includes the right to protection from physical and mental injury, as well as the right to freedom of movement. It is a principle which must be respected when recording videos. Secondly, the civil code translates this protection into reality and provides those recorded with the legal means to defend themselves. Victims of an illegal infringement of their personal rights may take legal action in order to protect themselves against any person involved. An infringement is illegal, unless it can be justified by the consent of the victim, an overriding private or public interest, or by law. Thirdly, the criminal code allows for legal proceedings to be instigated in case of illegal recording.

According to the law on data protection, it is the nature of the supervisor which determines the procedure to be adopted as well as the legal basis applicable (Klauser, 2001: 31). In the case of a private institution, all that is not forbidden may be considered to be authorized, but public institutions must on the contrary base any recourse to video-surveillance on the principle of sufficient *legal basis*. For instance, for the use of video-surveillance to be possible at border posts, the Swiss Federal Council had to prepare a special order (Federal Order Governing the Surveillance of the Green Border with Video Cameras, 26 October 1994 - RS 631.09).

In the case of danger or of an overt risk, police law may be applicable. It enables the police to limit the constitutional rights of citizens, even when there is no explicit legal basis to do so.

Video-surveillance installations in the hands of a public body must in addition fulfil four complementary criteria: the criteria of *good faith*, *proportionality*, *finality* and *legality* (PFPD, 2001). The principle of *good faith* implies that those persons recorded on video must in principle be aware of the surveillance measure being taken. Cameras should therefore be visible

in order to allow those concerned to adapt their behaviour to the situation and if necessary decide not to enter a building or publicly used place equipped with such a system. *Proportionality* requires recording to be restricted only to material which is necessary to achieve the desired objective. Video-surveillance is only used if it is essential to achieve a particular objective and if surveillance may not be carried out effectively by other means less prejudicial to personal and fundamental rights. Recording and saving information is acceptable only within the limits of the tasks for which video-surveillance is needed. The principle of *finality* implies that surveillance can only be introduced to carry out a particular task. It may not be used for the purpose of recording or processing information in order to collect data endlessly, or for an undefined end use. Finally, the principle of *legality* restricts the use of video-surveillance to cases in which the infringement of personal rights is justified by the consent of the person concerned, by an overriding public or private interest, or by law.

Despite the various legal instruments available, it is not always possible sufficiently to protect the direct intimate and private environment of citizens. The powers of the federal official responsible for data protection are in fact very limited in scope. He may not impose compulsory regulations. Generally speaking, the principles cited remain difficult to apply in practice. They are not appropriate as the basis of any clear and precise rule. Finally, as there exists no register of cameras installed by private institutions, the control and enforcement of the principles cited remains impossible in practice, in particular in the case of private cameras which focus on public spaces.

A multitude of parties involved in the use and design of video-surveillance systems.

Our research project was based on a deliberately two-pronged approach, centred on the users (demand) and on the designers of video-surveillance systems (suppliers). The field studies and analysis of internet sites demonstrated the existence of many factors influencing the presence and nature of both these groups as well as the numerous and varied forms of relationships and interactions linking them to one another. It thus appears that, contrary to what we stated in our initial question, video-surveillance results in an extremely complex and subtle system of relationships between the parties involved with those surveillance systems. We therefore consider it necessary at this stage to go beyond our two initial categories and to adjust them by proposing a finer distinction.

At the level of 'supply', two different emerging roles, or rather 'poles of competence' may be observed, which may be classified into three general categories. However, it should be emphasized that these categories are not exclusive. They may be combined, with one enterprise fulfilling the three separate functions. These categories are: the producers of video-surveillance equipment, the distributors of surveillance equipment and the designers of video-surveillance systems.

The distributors may become associated with specific producers or independently offer several brands. In addition, whilst they may specialize in the sale of video-surveillance products, the designers on the other hand focus on advice and service relating to the management and installation of the systems.

By further refining the analysis, we were also able to identify criteria on which to base the distinction between these three main types of involvement: businesses vary according to the different applications of their products and services (businesses which focus on 'target applications'), the different types of spaces targeted by security technology (businesses focusing on 'target spaces'), and by client type (businesses focusing on 'target clients'). These three criteria, based on functional and spatial differences in the use of video-surveillance, strongly influence the methods, form and content of relationships between those supplying the technology and those using it. Thus we note that, basing our comments on the elements found on the different internet sites analyzed, the more technically complex the objects and services supplied are, the more business competence and client relationships are valued. In contrast with the above, the more the site targets the public at large (small video-surveillance equipment users), the more the information provided is practical (price list, on line shopping, availability of automated contact).

At 'demand' level, that is to say, at the level of video-surveillance users, our case studies enabled us to identify political, social, spatial and economic factors influencing not only the technical operations of the system, but also the type of parties involved in its management and in its installation and development (improvement of system performance). To illustrate this, let us recall the important differences prevailing between the video-surveillance projects of Olten and Bienne. Although the public sector (police) is in both cases in charge of the project, the balance of power in terms of political and social relations between the parties concerned is considerably different. In addition, the comparison of the video-surveillance projects of Olten and Bienne highlighted the importance of public opinion, which may influence both the parameters according to which a video-surveillance system is put in place, and also the characteristics of the system adopted (including recording of images or not, for instance). In particular we noted the considerable resistance shown by the inhabitants of Bienne, in sharp contrast with the calm acceptance of the video-surveillance project of Olten.⁶

As we push the analysis further, we note that the study of road surveillance in Geneva allows for the distinction to be made between the owner, technical manager and user of the video-surveillance system. But for the latter, matters are not that simple either. In regard to the use of the system, the operators play an essential role by acting as an information exchange. Indeed, they enable the system to be used for instance by the police, by those in charge of motorway maintenance, and by those in charge of road information and road signs and markings, and by many more. Users therefore include not only parties directly in contact with physical elements constituting the video-surveillance system, but also with parties using the images transmitted by the system. These parties can be classified according to their functional relationship to the system (prevention and intervention), according to their place of work (within the CASTOR, or external) and according to the time dimension of the use of the images, depending on whether they are transmitted or recorded. As a result of the in-depth study of road-surveillance in Geneva, we were able to observe that the very use of video-surveillance systems contributes to

⁶ As we already mentioned, our study did not concern those under surveillance. It appears important however to underline this point, because it relates to a certain extent to the "public" demand for video-surveillance. This in turn influences the attitude of the users of video-surveillance, even if indirectly, especially when they are in the public sector.

changing the existing parameters of the organization of work, and results in new relationships between the different parties concerned. We have in mind in particular the technical competence required to manage such a system, which is likely to give certain parties more weight. Thus it would appear that there has been a transfer of competence from the owners of the video-surveillance systems to the technical managers. The direction in which this transfer is taking place is confirmed by the trend towards the integration of several video-surveillance elements in one single system and towards ever-increasing automation. We also observed that certain elements apparently additional to the actual video-surveillance system itself play a decisive role, in particular as far as the work of the operators is concerned, by allowing for different uses to be made of the information transmitted through the video-surveillance system. These are in particular media for remote communication such as telephone and radio connection.

Risks under surveillance with many different characteristics

Our wide-ranging field studies enabled us to highlight the variety of risks under surveillance, a variety which relates as much to the elements of space and time in these risks as to their 'nature'. In the case of the cities of Olten and Bienne, and in the case of the Geneva Public Transport vehicles, video-surveillance related particularly to the management of risks belonging to the category called 'social' risks. But the study of the CASTOR enabled us to analyze a video-surveillance system dedicated to the management of multiple risks, amongst which, however, the risk related to road safety is dominant. Combined with other remote monitoring tools, for instance to measure and capture information remotely, surveillance is also practiced in relation to a whole range of environmental risks (measurement of different levels of pollution, measurement of the temperature to detect freezing for instance).

The video-surveillance system facilitates the surveillance of a given territory, within which different categories of risk may or not be spread in a homogeneous way. From that perspective, we have highlighted a number of cases in which several categories of risk are concentrated at specific points along the motorway that bypasses Geneva (tunnels in particular). We were also able to identify more diffuse spreads of risk along the motorway. They often correspond to the risks linked to the behaviour of car drivers.⁷

Our study of the CASTOR enabled us to highlight the suitability of video-surveillance for the management of concentrated and stable risks, such as risks linked to the nature of tunnels for instance. However, the more dynamic the risk is in time and in space, the more difficult its management becomes. This is essentially related to the detection of such risks. In the case of CASTOR for instance, a software program makes it possible to detect stationary objects on the road. Immobility is related to danger because, in normal circumstances, everything on the motorway should be moving. Immobility represents indeed one of the biggest factors of risk. But other strategies are also used to enable detection to be more efficient in time and space. Thus, attempts are being made currently to automate the system to permit continuous detection. As, by definition, diffuse risks may potentially occur anywhere, they present difficulties in terms of

⁷ The classification used for risks is based on the work of November (2002). It fits into a wider discussion related to the characteristics of time and space associated with risk, independently of their nature (industrial, natural, social, etc.). Other classifications could also be mentioned, such as that of Galland (1998) which differentiates between network risks, diffuse risks and territorialized risks.

intervention and contribute to making the system even more complex. As a consequence we are currently witnessing technological developments which systematically attempt to broaden the capabilities, with the aim of reaching the point of 'seeing everything'. Automation and increased flexibility of surveillance consequently aim not only at the system's improved functional performance in regard to the detection of different categories of risk, but also at the increasingly continuous surveillance of larger spaces. The CASTOR case study showed the strategies implemented in order to spread video-surveillance to the whole of the territory under surveillance, with a view to the swiftest possible intervention in various situations of risk.

This trend towards the increasingly automated and simultaneous surveillance of several spaces and categories of risk is equally highlighted by the analysis of nine internet sites of businesses specializing in video-surveillance. We note in particular that some enterprises which design systems possess extremely broad competences (signal analysis, image processing, audio-visual recording, technical and computer development, automation) and are developing an approach to risk which follows a concept related to the functional dimension of the space under surveillance. Potential clients are thereby defined not in relation to the type of application of the technology (designers are even able to respond to 'heterogeneous' needs), but in relation to the type of space to be secured.

Technically speaking, three points thus stand out very clearly in our study: a characteristic of solutions offered is that they integrate different surveillance media; there is a preference for the automation of surveillance; and much importance is given to the flexibility and variability of the systems.

The impact of 'distancing'

Following our analysis of video-surveillance systems, we were able to observe that 'distancing' has several simultaneous impacts. We suggest distinguishing three of them: the first relates to the act of carrying out remote surveillance (video-surveillance is a form of remote surveillance), the second relates to the socio-technological mediations generated by the systems, and the third relates to the management of different categories of risk, which these systems are made for.

Geometrical distance and spatial mediations

By definition, video-surveillance of publicly used places consists of the remote monitoring of these spaces or of surveillance at a distance – and therefore literally creates 'distancing' of certain spaces pre-identified as being 'at risk'. The potential and efficiency of remote monitoring and of video-surveillance are constantly being improved. As a consequence of the development of the technologies used, video-surveillance is moving towards the possibility of 'seeing everything'. We intentionally use this expression, first because the possibility of 'seeing everything' has already been the objective of much work (cf. Bentham's *Panopticon*) and also because 'seeing everything' corresponds with an ideal which it is impossible to reach, namely 'perfect' simulation (Raffestin, 1997: 97). Video-surveillance thus enables several spaces to be simultaneously monitored, at very different geographical scales, by means of a zoom lens. It also makes it possible to combine the surveillance of several objects by using different spatial concepts (continuous surveillance of mobile risks – once detected, the risk is followed – or fixed surveillance along roads – risk is detected because, at the place being watched, it is at variance

with the established rule – or even surveillance of diffuse risks by zone – sweeping – or by points spread across the territory – random detection in accordance with a pre-defined pattern).

In remote surveillance, control results in a change of reference systems, despite the visual illusion it may give. Traditionally, social control takes place as a result of the concurrent presence and surveillance of those persons occupying the same space at the same time. In other words, due to that concurrent presence and surveillance, people realize they may be seen, and consequently adopt a type of self-discipline which originates from a broader social control. In the case of remote surveillance however, the concurrent presence mentioned above is no longer required. Social control is delegated to video-surveillance, in other words to a system in which surveillance is based on images. In the course of this ‘transformation’ which is the result of the ‘distancing’ of surveillance, the object or person under surveillance is taken out of its context. It is ‘lifted out’, and then ‘put back’ into context by procedures which continually combine elements of simulation and domestication (image processing, use of the technical capabilities of the system, camera framing). This in turn changes the very qualities of the space under surveillance: the relationship between the persons within the space under surveillance and those who fall outside it on the one hand, and on the other between the space under surveillance and the spaces which fall outside the scope of the image frame, are no longer captured. It is only a sample, a portion of territory which is caught in the ‘net’ of the camera, and thereby taken out of its environment.

Socio-technological mediations

The ‘distancing’ of social control implies a preliminary selection of the risks to be monitored in the publicly used place. The central issue at stake is to find out who operates the selection and how. The categories which we use for research purposes – designers and users of video-surveillance – do not represent the multiplicity of parties which define risks, create a system, develop it, implement it and operate it. The question ‘which party is concerned?’ is almost impossible to answer, in particular when attempting to attribute a clear responsibility to a well defined party. The question ‘how?’ is hardly any easier to answer because, again, both the processes of domestication and simulation are continually at work. Our analysis shows that video-surveillance systems are the subject of a great number of socio-technological mediations in which it is not possible to separate what belongs to the social domain and what belongs to the technological domain. Indeed, many different social questions are in play in the technological set up, just as many different technological aspects help to model the ability of the system to respond to the demand for security. It is also particularly interesting to note that in the case of video-surveillance, the socio-technological mediations are accompanied by the creation of an increasing number of intermediaries and by the development of a specialized language, the use of which quickly becomes accessible only to specialists. The functioning of the system as such requires continual adjustments and negotiations, which are characterized by micro-decisions taken by all sorts of parties, from operators to technicians, including developers and system managers. This multiplication of socio-technological mediations creates new procedures, and even new professions (operators, for example). It constitutes in itself an integral part of the phenomenon of ‘distancing’ produced by the use of video-surveillance.

Risk management

Technological progress and development have sought to integrate different types of surveillance

media, automate surveillance and increase system flexibility. This trend has many implications. Firstly, these installations are increasingly used for ever more varied purposes and places (traffic, shopping centres, petrol stations, waste reception centres, museums, customs, airports, public toilets, urban housing estates, public squares, public transport, demonstration sites, tourist sites, urban, forest or agricultural areas). Secondly, technical capabilities are constantly improving in terms of camera size, performance (e.g.: precision of resolution⁸), sound and image synchronization and in terms of the integration of multiple technologies. These improvements allow an escalation in the number of possible applications of video-surveillance. We are currently witnessing the emergence of facial recognition (such a system is, for instance, being tested in Zurich-Kloten Airport) and the creation of behavioural profiles, on the basis of which a suspicious signal can set off automatic alarms. Thirdly, video-surveillance equipment fits into the larger domain of remote-monitoring (mobile phone tracing, electronic prisoner bracelets, devices for fingerprint recognition, internet navigation tracking). Fourthly, the interconnection of remote-monitoring networks, their links to different data banks of personal information and insertion into telecommunication networks such as the internet increases the potential efficiency of surveillance. Fifthly, the end use of such systems is constantly evolving. Their sole purpose is no longer necessarily only to guarantee security in the narrow sense of the term (protection against robbery, urban disorder, burglary, muggings or vandalism). They now aim at the wider co-ordination of police or customs work (fight against drug trafficking, surveillance of prostitution, and prevention of illegal immigration). They may also be used to search for disappeared persons, to prevent false marriages, to encourage the proper separation of waste in recycling centres, to detect smoking when it is banned in public toilets. They may be used for tax purposes (recognizing licence plate numbers to check payment of tolls in the centre of London, using satellite images in the USA in order to automate payment of tax on land ownership). Finally, it is nowadays possible to carry out several tasks simultaneously within a given base system, as none excludes the others. For instance, a system of cameras set up to regulate traffic – and which therefore, on the face of it, is reasonably legitimate, as it aims at increasing road safety – may also be used to trace stolen vehicles (by identifying their licence plate number and the vehicle's distinctive characteristics), to monitor a procession of demonstrators or support instruments for the measurement of air quality.

This signifies that generally speaking we are moving on from a system in which each technology was associated with a specific category of risk (fire, road congestion, pollution, urban disorder) – and often with a specific administrative service – to a system which takes different types of risk into account according to their spatial characteristics (diffuse/concentrated; stable/dynamic) and which redistributes⁹ the information gathered to various receivers. The integration of different systems and their enhanced sophistication make it possible to register these risks in space and in time independently of their sources, which may vary greatly (technical, social, environmental, etc.). In the case at hand, the phenomenon of 'distancing' is caused by the growing lack of

⁸ Some of the more efficient satellites provide high resolution images of 7x7 cm (Monmonier, 2002).

⁹ Or sells it. To make things even more complicated, it is appropriate to mention the case of Lyon, which is well documented in the work of Renard (2001), where a public-private partnership is entrusted with the control of the system... which is thus authorized, under certain precise conditions specified in its contract, to put the information it has gathered on the market.

transparency prevailing between the socio-technological system of video-surveillance, its aims, and the objects, spaces and persons under surveillance.

Difficulties of holding a democratic debate

The continually recurring debate is about the feasibility of having collective regulation and the methods of achieving such regulation, in view of the multiplicity and complexity of different issues related to the phenomenon of 'distancing', which we have just clarified.

Recourse to video-surveillance is often legitimized because it improves the safety of the territories under surveillance. Conversely, it is also admitted that this improvement can be detrimental to the protection of privacy and the personal data of those under surveillance. Likewise, the installation of a video-surveillance system influences the quality of the space it focuses on. Cameras installed in an underground car park, for instance, are likely to make it safer for many people who will no longer fear using it. Video-surveillance can thus promote social inclusion. On the other hand, cameras installed close to a site which is thought to be used by marginal social groups, for instance, may lead to the exclusion from the space in question of a number of users who will have noticed the presence of cameras and, for various reasons, will not wish to enter their field of vision. This would be a case of social exclusion. These two themes, which we can summarize by two pairs, 'safety versus privacy', and 'social inclusion versus social exclusion', are all the more relevant to collective regulation in view of the fact that the use of video-surveillance can easily become commonplace. Those under surveillance are not necessarily conscious of being controlled. They are therefore not *a priori* sensitive to all the issues at stake. However, we are all potentially under surveillance. We are all both users of publicly used places and – against our will – a potential source of information obtained from video-surveillance systems. We are consequently all concerned by video-surveillance regulation ... unless we decide to give up our privacy!

How may these questions become the subject of a public debate? During our work, we noted that public debates are not necessarily held prior to the installation of a video-surveillance system (example of the CASTOR). And when one is held, it has difficulty in establishing itself for the long term. In Olten, for instance, the debate never extended beyond the limited group of parties directly concerned (police, prostitutes). In Bienne it is very polarized, but it also lacks structure. The many examples of 'distancing' mentioned above naturally result in a certain amount of 'lack of transparency', which is detrimental to the democratic debate. Can this situation be overcome?

Current research material available does not provide an answer to this type of question. We believe it necessary to proceed with a study of different modes of socio-political and legal regulation in order to better assess the feasibility of and conditions for democratic regulation of video-surveillance.

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