I SEE YOU BUT YOU DON’T SEE ME! THE SPREAD OF CCTV IN BRAZIL: LEGISLATION, DEBATE AND MARKET

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ABSTRACT

Latin America has shown itself to be a fertile ground for the proliferation of surveillance cameras, especially in the retail trade and small-scale private security (homes, condominiums, shopping malls etc.). In Brazil, this proliferation has occurred for three main reasons: the absence of specific legislation regulating how these systems are used; the limited scope of the debate about the deployment of surveillance technology and the implications of its widespread use; and a growing atmosphere of urban fear that affects the way people live in and move around large and medium-sized cities. In a study carried out in Brazil and Mexico and funded by the International Development Research Centre (IDRC), various aspects of the use of surveillance technologies were mapped and described, focusing on existing legislation, related studies, research centers, current technologies and the market. In this article we present some of the results of this research as they relate to the proliferation of video surveillance in Brazil. The Brazilian market for video surveillance, which has grown steadily since the 1980s, is now booming, reflecting the growing interest this technology holds for the (property and personal) security market as well as the real estate market. Over the past 30 years, this interest centered on public areas with large numbers of people, such as parks, squares and major commercial streets, or private spaces such as shopping malls, sports centers and event centers. However, in recent years there has been an expansion in the security market as a result of the gentrification of large residential areas in medium-sized cities and metropolitan regions in Brazil. A consequence of these developments in the real estate market has been, indirectly, a growth in the use of CCTV systems as crime- and violence-prevention tools by small, medium-sized and large private security companies targeting all social classes. In this study, we therefore highlight the following aspects of video surveillance in Brazil: regulation of the use and proliferation of CCTV; involvement of the scientific community through debate and academic training; and the market for and technologies used in electronic surveillance.

Keywords: video surveillance; CCTV; Brazil; Latin America; CCTV legislation.

INTRODUCTION

In various countries in Latin America, a gradual increase in the number of initiatives aimed at collecting, storing and managing personal data about citizens can be observed. These initiatives

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1 This article presents the results of an investigation into the growing use of video surveillance systems and provides a critical reading of these results in the context of Brazil. It is part of a broader study of personal identification, the collection and use of personal data on the Internet and the proliferation of CCTV systems in Brazil and Mexico financed by the International Development Research Center (IDRC) and carried out from September 2010 to May 2011 by teams of researchers from both countries. We would like to thank Fundação Araucária for providing support for this paper to be presented at the 5th Biannual Surveillance and Society Conference “Watch This Space: Surveillance Futures”, Sheffield, UK, April 2-4, 2012.

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are both public and personal and make use of recent technologies, including personal identification systems, monitoring systems and systems for collecting personal information on the Internet. This situation has arisen in recent years and is characterized both by the increasing technical feasibility of consolidating and integrating public and private database services and by the growing use of CCTV.

In contrast, the peculiarities of the Latin American scenario include (a) inadequate or nonexistent laws governing the collection, storage and management of personal data and (b) a limited public debate that is unable to promote participation by the public in general or arouse interest among the public in the broader subject of surveillance or the more specific issue of the possible implications of the use of CCTV systems.

In various areas such as personal identification, the collection and use of personal data on the Internet and even the proliferation of video surveillance itself, this situation suggests that the use of the information collected or even the appropriation of the technologies used has been justified based on reasons related to public security or arguments in defense of a technocratic logic, as well as business or administrative efficiency. In general, such initiatives are not accompanied by critical assessments of the possible implications for individual liberties of this abusive, invasive use of the technology in the absence of any regulations or discussion (BRUNO, KANASHIRO and FIRMINO, 2010; and MURAKAMI WOOD and FIRMINO, 2010).

In three consecutive works between 2006 and 2008, Kanashiro (2006a; 2006b; 2008) had already described the scenario in which surveillance cameras were being installed in Brazil and how this was accompanied by growing interest from the real estate and property and personal security markets. At that time, the growth in surveillance was concentrated in public areas with large numbers of people, whether in public spaces such as parks, squares and main commercial streets or in private spaces such as shopping centers, sports stadiums or event centers.

It should also be noted that this expansion was related to the gentrification process in huge areas of large and medium-sized Brazilian cities and metropolitan regions, a phenomenon related to the growth in the number of closed residential condominiums as a form of urban land division and a way of creating a product that is highly sought after in the contemporary real estate market (CALDEIRA, 2001). In a process typical of various Latin American countries, this occupation of immense areas of urban land by condominiums for the upper classes has been accompanied by an increasing interest in this type of land occupation by all social classes (HOLSTON, 2008).

The most visible consequence of this growth in condominiums as a sought-after commodity and a form of urban land division is their close relationship to the physical security arrangements that give them their shape, from the architecture of the individual residences to the design of the areas inside and outside the condominiums. Property security systems thus become an integral part of this sought-after commodity and are seen as an essential item in new developments in cities. Surveillance cameras, CCTV systems, security procedures and procedures for controlling spaces are part of any current architectural or urban project and, like building materials, are considered indispensable.

A consequence of this scenario is that CCTV systems are promoted indirectly—and at times directly, particularly by the press and as a result of pressure from electronic security companies—as tools for preventing and solving crimes and violence in Brazilian cities, a result of what Caldeira (2001) refers to as the security lobby. This diagnosis is no different from that in other countries in Latin America. According to Caldeira (2001: 199),

“The expansion of private security services in São Paulo in the past few years cannot be associated exclusively with either an increase in crime and fear or the dysfunctions of the police and the justice system. The growth of the industry (including both equipment and services) is a characteristic of Western societies in general and not specific to São Paulo. Security equipment is becoming increasingly complex, and private services are growing considerably both in quantity and in scope […] Private security has become a central element of the new and already widespread pattern of urban segregation based on fortified enclaves.”

In addition, little is known and there has been very limited discussion about surveillance, monitoring and the control of individuals, groups and spaces in these countries. Also relevant to
the Latin American context is the recent history of political and economic repression in the last four or five decades, which perhaps colors the relationship between Latin American society and monitoring systems such as CCTV.

Focusing on the proliferation of CCTV systems in Brazil, this study represents the first systematized attempt to map the situation in this country and concentrates on three areas: existing legislation and legislation that is currently under discussion; the debate about and academic literature related to video surveillance; and the security and surveillance market and technologies. In order to be able to problematize this situation in Brazil, data for the following areas were collected: regulation of the use and proliferation of CCTV in Brazil; current academic discussions and research in the Brazilian scientific community of relevance to the subject of CCTV systems; and the market for and technologies used in image-based electronic monitoring equipment. This study is the partial result of a more extensive study involving Brazil and Mexico that mapped three areas in which the problems of surveillance and the control of personal data are particularly sensitive in Latin America: the implementation of systems for personal identification; the collection and use of personal data on the Internet; and the proliferation of CCTV systems.

In addition to this introduction, this article has three parts. Firstly, we describe the methods and techniques used to carry out the study. Then, in the main section of the paper, we analyze critically the results and their relationship with the historical, social, political and economic context in Brazil. In the last section, we present some final considerations with a view to contributing to a prognosis for the scenario of proliferating video surveillance systems in Brazil.

HOW THE STUDY WAS CARRIED OUT

As stated earlier, this study, which maps the current Brazilian scenario, represents the first academic and scientific investigation of the subject in Brazil using an approach that takes into account its sociotechnical nature (BIJKER and LAW, 1997; CALLON, 1987; LATOUR, 2005). It was not intended, at this stage, to discuss or analyze in depth the relationships in this first attempt at mapping. The method used to carry out the study reflects these specific scientific concerns and interests.

The methodology used to look for and organize information for each domain that was mapped covered (a) legislation (existing and under discussion); (b) academic debates (studies published and researchers and research centers involved with the subject of surveillance and CCTV); and (c) technologies and the market (including a survey of the main types of equipment available as well as the companies that produce or sell this equipment). Wherever possible, the research covered the whole of Brazil, and in specific cases (such as research into state and municipal legislation) the following states and their respective capitals: São Paulo (and the city of São Paulo), Rio de Janeiro (and the city of Rio de Janeiro), Paraná (and its capital, Curitiba) and the Federal District (and the city of Brasília).

The main technique used in the study involved examining different databases and information sources for each of the subareas chosen. In other words, searches were carried out in official documents in the case of legislation (using search tools specifically for Brazilian federal, state and municipal legislation), in databases of articles and scientific journals in the case of academic debates (in the main open-access repositories of journals in Latin America, SciELO and RedALyC, as well as in the CAPES Journal Portal and in different media for the market

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7 As previously mentioned, this study was financed by the International Development Research Centre (IDRC) in Canada and carried out between September 2010 and May 2011.
8 This methodology was developed as part of the research covering Brazil and Mexico that gave rise to this study. Similar methods were used in both countries, with the relevant modifications needed to take into account the specific national contexts.
9 Capes (Agency for the Support and Evaluation of Graduate Education or, in Portuguese, Coordenação de Aperfeiçoamento de Pessoal de Nível Superior) is an institution linked to the Brazilian Ministry of Education that evaluates postgraduate programs in Brazil and provides funds for these programs and the associated research. Capes also operates an important online search engine with access to over 20,000 scientific journals throughout the world.
for surveillance and security technologies (by referring to specialized journals and events).

In all cases, a single list of expressions and keywords was used for the searches. This list was carefully chosen and discussed for all the contexts involved in the original research. The following expressions or keywords (in Portuguese) were used for the searches: video surveillance; video-surveillance; surveillance + electronic; surveillance + fear; surveillance + video; surveillance + camera; camera + monitoring; camera + crime; camera + visibility; camera + control; camera + violence; CCTV (in English and in Portuguese, CFTV); video + security; image + law; image + privacy; privacy + crime; panopticon.

For federal, state and municipal legislation, laws and bills directly or indirectly related to the use of CCTV and its implications were considered. For each case found, the following information was selected: proposer of the bill or law; name/number of the law or bill (with a link to the text); approval date (in the case of bills that had been approved); summary of the text of the law or bill; keywords used in the search; source for the search; comments; whether the law is a federal, state or municipal one; and its relationship with the main subject of this study, CCTV (whether directly or indirectly related).

For academic debates, broad and specific keywords were used to increase the chances of finding studies on CCTV. The importance of the data found was recorded in a spreadsheet with information about the studies, in which the following fields were highlighted: database used for the search; keywords used; title of the study; abstract; keywords for the study (defined by the authors of the study); authors’ names; publication or event where the study was published or presented; year of publication; author affiliations; specific (direct or indirect) relevance to the subject of CCTV.

Lastly, in the case of surveillance technologies and market, priority was given to information about supply, origin, type (hardware or software) and applications. Some difficulties were encountered in these searches because of the very large number of companies and technologies in the Brazilian CCTV market. The results of the searches indicated that CCTV systems are used for a wide range of applications and that large corporate groups and small companies are active in the market.

Specific spreadsheets in which the information obtained was classified and organized were created for each subarea (legislation, academic debates and technologies and market). In the case of the proliferation of CCTV in Brazil, the searches in the subareas academic debates and legislation proved to be the most important in terms of the quantity and quality of the data obtained. It was in these two subareas that most of the search efforts were concentrated, as it was considered that these could be used to investigate other areas in greater depth in future studies. After all the spreadsheets had been completed, the results were interpreted and organized.

DEVELOPING A SCENARIO FOR THE BRAZILIAN SITUATION: LEGISLATIVE ENVIRONMENT; ACADEMIC DEBATES; TECHNOLOGIES AND MARKET

As was explained in the introduction, there is a huge gap in Brazil between the widespread dissemination of video surveillance and the associated technologies on the one hand and studies, discussions and, above all, legislation related to the subject on the other. We therefore discuss below some of the more visible aspects of the survey as they relate to the academic debate about CCTV in Brazil, to both the established legislation and legislation that is currently being developed, and to discussions related to the problematization of the indiscriminate proliferation of CCTV in the states and municipalities studied. We suggest that there are two particularly important factors: a hidden lack of interest in the “side effects” of the proliferation of CCTV in Brazil without a suitable debate; and explicit encouragement of the increasing use of CCTV as a tool for controlling crime and an instrument of public security policies (in the broadest sense, as CCTV systems play a central role in various public security initiatives), as well as the
concomitant appropriation of these “tools” by the ordinary citizen and private security companies. This use of CCTV as a technical fix that is of great marketing interest reflects the current trend towards the securitization and militarization of space in cities to protect sociopolitical territories and perimeters, a process that is taking place in various ways, very often involving the use of established and emerging surveillance and security technologies. According to Melgaço (2010: 109),

“The way that securitization has been taking place in a large number of Brazilian cities has followed a model of ‘militarization’ of urban space. Like an unmeditated response to the psychosphere of fear, cities have adopted urban forms that look like real war scenes […] Among the various forms of securitization, those that attract the most attention visually are the facilities related to “perimeter protection”; i.e., instruments intended to prevent unauthorized access to or violation of urban properties.”

Below we provide a critical description of the main results of the searches, broken down according to the three main areas addressed in the study: legislation, academic debate and CCTV technologies and market.

**Legislation**

The symptomatic absence of specific laws to protect Brazilian citizens’ personal data reflects a lack of concern or a failure on the part of Brazilian society to debate issues such as privacy and responsibility for monitoring spaces and people at all three levels of government (federal, state and municipal) 10. Clearly, this same behavior is reflected in the use of cameras and electronic image-based systems, which are generally viewed as “technical fixes” to prevent and/or solve crime in the largest Brazilian cities.

Two factors should be stressed here: firstly, the differences between violence and crime, especially between the various types of violence and crime. In general, news reports and articles on CCTV in Brazil tend to blur the distinction between these two concepts, giving the same treatment to, for example, cases of prevention of domestic violence and abuse (such as nannies caught abusing children) and cases of criminals caught in the act of committing crimes against property (such as robbing banks or gas stations). While there is no moral or social hierarchy in such cases, one cannot ignore the different circumstances in which various situations involving crimes and violence occur or are socially constructed.

The second factor is a result of the simple approach used to deal with the application of CCTV systems, when, for example, different concepts and cases are treated alike in order to (intentionally or otherwise) attribute a function or meaning to the sociotechnical artifact CCTV. The consequence of this is the supposition that these systems are effective at preventing crime and reducing violence, as a result of which, to use the socioconstructivist term, CCTV and surveillance systems in general are black-boxed (BIJKER and LAW, 1997; CALLON, 1987; LATOUR, 2005). Indeed, it is questionable whether CCTV images can be used as legal evidence or to identify criminals because of the very nature of the legal system in each country (in this case, Brazil).

The legislative environment, i.e., the type and number of laws approved or proposed that deal directly or indirectly with CCTV, illustrates two main aspects. Firstly there is an environment or feeling that is extremely favorable or biased towards the use of these systems, insofar as they are attributed the role of solving the problem of violence and a series of urban crimes. It is worth pointing out that various independent studies (see, for example, SURVEILLANCE STUDIES NETWORK, 2006) and government studies (see, for example, GILL and SPRIGGS, 10 Nowadays, “the most modern provisions concerning data protection in Brazilian law are contained in article 43 of the Consumer Defence Code, which states that people should have access to personal information. It also establishes that people should be informed when they are included in databases” (IDEC, 2010). The Complementary Bank Secrecy Law (CL 105/201) and Habeas Data Law (9507/97) also contain legal provisions about data protection. Added to this, the Brazilian Federal Constitution proclaims that the “privacy, private life, honor and image of the people are inviolable”. However, Brazil still does not have a personal data protection law.
2005) in countries where these systems have been in use for longer (such as the United Kingdom) suggest that the implementation of CCTV systems leads to a number of different outcomes, the most common being that the effectiveness of such systems is limited in most cases to producing evidence against crimes already committed and that in general, after surveillance cameras have been in use for some time they neither prevent crime nor reduce the feeling of insecurity among the population.

Associated with this is the fact that violence in cities is treated as a single, numerical given (despite differences in the methodologies used and hence the numbers issued by the different police and organs of the state responsible for “organizing” crime data) to which attempts are made to apply practical, technological solutions. This first survey also suggests there is a connection between the use of cameras and a specific model for approaching the issue of violence and crime. In other words, the approach used with CCTV in Brazil is not so much related to the idea (at least from the point of view of public policies) of crime as a social factor, with a network of historically and socially constructed relationships and situations, as to the idea that it is an issue involving spatialized statistics for which control tools are needed. Unfortunately, as we can merely speculate about this here, further research is needed to gain a better understanding of these complex relationships.

The second aspect of the current legal background to CCTV in Brazil, which is very closely related to the first, is the clear lack of interest in discussing monitoring per se (why monitor? how should video monitoring be carried out? what are the responsibilities of each social actor?) and substitution of this debate by the assumption that these systems are technologically “neutral” and merely functional – geared towards solving and preventing crimes. As a result, legal discussions tend to focus merely on regulation of the way the technology is applied (how and where to monitor, from the operational point of view).

This situation is described in studies by Kanashiro (2006a, 2006b, 2008), who undertook a historical survey of the subject of CCTV in Brazilian legislation and classified all the laws studied into three periods: 1982 to 1995 – the use of cameras as a suggestion; 1995 to 2003 – a period of restructuring when cameras became obligatory in certain institutions; and 2003 to 2005 – a second period of restructuring when the issue was discussed as a requirement for international trade (major international capitalist institutions), personal and private security and survival. The picture described by Kanashiro in her various studies has not changed, and CCTV systems continue to be treated merely as security tools for technical fixes. The legal concerns regarding CCTV systems in Brazil thus reflect the fact that these are understood by various social groups and political actors to be merely technological instruments that can be implemented without the need for any technical regulation. The creation and use of CCTV systems is not considered from the perspective of a sociotechnical interpretation, which is directly reflected in the lack of concern in regulatory terms about the possible implications of its “use or lack of use”.

Thus, it is common to find laws or bills covering, for example, the compulsory use of CCTV in state or municipal schools or in prisons, stadiums, police vehicles, hospitals and other public or private spaces (see Table 1 for examples at state and municipal level). Most of the legislation found in laws and bills considers camera surveillance as both necessary and compulsory for a variety of situations and regulates only the technical aspects of their use. Of the more than sixty laws and bills found, none concern the act itself of monitoring or keeping watch over with cameras and none seek to regulate issues related to privacy or the guaranteeing of the rights of citizens being monitored (see Table 1 for examples).

<table>
<thead>
<tr>
<th>Municipality or State</th>
<th>Law or Bill</th>
<th>Date</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality: Rio de Janeiro</td>
<td>Law no. 4133/2005</td>
<td>18.07.05</td>
<td>Authorizes the Executive Branch to introduce video camera monitoring systems in municipal teaching institutions and makes other provisions.</td>
</tr>
</tbody>
</table>
Table 1: Examples of municipal legislation related to the use of CCTV systems (Brazil).

| Municipality: Brasília | Law no. 4.062 | 18.12.07 | Regulates the installation of electronic surveillance in shopping centers, nightclubs, clubs and similar establishments in the Federal District. |

Hence, rather than finding laws regulating the use of CCTV in terms of the responsibilities associated with monitoring, the use of images and the rights of the individuals and groups being monitored, or descriptions of specific monitoring situations and restrictions on CCTV systems and their use, we found the law being used to impose the use of such systems in public and private spaces. No mention was found of, for example, the rights of use of the images from CCTV monitoring, the handling of this data or the responsibility for monitoring and the associated procedures.

The legislation guaranteeing rights relating to personal images is specific to the federal constitution and is generally applied to cases of misuse by the press (newspapers, magazines, TV news programs etc.) or to guarantee ordinary citizens, personalities and public figures the rights to the commercial use of images. The survey thus points to a series of gaps in Brazilian legislation in terms of the protection of individual and group privacy or the guaranteeing of people’s rights when they are the subject of monitoring by video cameras.

One of the main discussions about the right to privacy or the protection of personal data is supported by article 5 of the federal constitution, which establishes, in general terms, the individual rights and guarantees of Brazilian citizens and foreigners who are resident in Brazil. The article contains various clauses related to the discussion, such as clause V, which guarantees the right of response in cases of damage to a citizen’s image; clause X, which deals with the inviolability of people's intimacy, private life, honor and image; or clause XII, which defends the confidentiality of correspondence and telephonic and telegraphic communications and data except in cases where there has been a judicial ruling. Thus, as previously mentioned, issues concerning the right to privacy and the protection of personal data are not brought together in one place and dealt with in specific legislation for that purpose but are limited to interpretations of this specific article.

**Academic debates**

A number of interesting points can be observed in connection with the studies and researchers involved with CCTV in Brazil. These suggest that there are two main trends.

Firstly, the number of studies on the subject in Brazil has grown in recent years, driven by the first event in this area held in the country—the International Symposium on Surveillance, Security and Social Control—which took place in Curitiba in 2009. It can be seen that this increase has been accompanied by a greater diversity in the areas of knowledge forming the basis of studies and investigations. The survey revealed that studies have been carried out by a variety of Brazilian universities, with most being concentrated in (but not restricted to) the south and southeast of the country and involving different fields of study, such as communication, sociology, architecture and town planning, urban management, law, administration, medical sciences, political science, history and psychology. This first finding indicates that there is significant, visible broadening of the scope of the debate in Brazil, which, as was observed mainly in the lack of legislation, has been very limited even in the academic world.

Secondly, examination of the content of the data collected in this first mapping of studies in Brazil shows the difference in the number of theoretical and empirical studies carried out by the various centers in different fields of research. Most of the studies found (articles in journals and the annals of scientific events, theses and academic dissertations) present conceptual discussions based on the available literature, particularly—in most of the works—international literature. There are, for example, many studies that discuss the significance of the expression, or phenomenon, “surveillance society” or even “disciplinary society” and “control society” with
reference to original works by David Lyon, Michel Foucault, Gilles Deleuze or other French or Anglo-Saxon authors who have made important contributions to surveillance studies.

At a time when there is little discussion of the subject in Brazil, this conceptual debate has been fundamental in helping define the various elements that can be used as the basis for future empirical studies. Indeed, it is important to understand the subject before undertaking applied studies and observing local particularities. In any case, these two points illustrate the initial burst of activity that the subject of CCTV has brought about in the academic world, where the quantity and quality of studies is now becoming apparent (although with a considerable time lag compared with other more consolidated subjects and fields).

It is therefore not by chance that the vast majority of these studies are academic works (theses, dissertations and other final course papers) rather than articles in journals or papers presented at scientific events. Of the 239 studies included in the final spreadsheet, 171 are academic studies (71.5%), compared with 39 publications in scientific journals and periodicals (16.3%) and 29 papers presented at scientific events (12.2%). Figure 1 shows the distribution of these studies according to the medium in which they were published or the event at which they were presented. It should be noted that the International Symposium on Surveillance, Security and Social Control occupies a prominent position and that where the names of universities or research centers are shown, these represent academic studies, mostly theses or dissertations. The importance of the International Symposium on Surveillance, Security and Social Control in particular for the production of studies on the subject of CCTV is very clear. One piece of information missing from the figure is that out of a total of 29 studies presented at scientific events, 23 (or 79.3%) were presented at the symposium. Also notable is the number of universities shown, each university in the figure representing academic works such as theses and dissertations. However, the fact that the name of a university is shown does not necessarily mean that the authors have a permanent link with the institution but that their works (theses, dissertations and final course papers) were defended and/or published there. Lastly, and still in relation to Figure 1, it should also be noted that there is not only a relationship between the places and events where works were presented or published but also between these and some of the authors.
Also notable is the recurrence of the keywords in the searches and the data found. In the final study spreadsheet there is a very strong correlation between the keywords used for the searches and the actual keywords in the works chosen by the authors themselves.

Two important factors can be observed in this relationship: firstly, the notable growth in the number of studies containing words or expressions of relevance to the subject of CCTV in
recent years. Figure 2 shows a time line with the distribution of these works, focusing particularly on the commonest words or expressions. Note, for example, the particularly large number of works in 2009, which can be attributed to the influence of the International Symposium on Surveillance, Security and Social Control held that year. A difference can be observed between the number of works in Figure 2 and the number in the final results spreadsheet. In the former there are 22 works in 2009, whereas the spreadsheet contains 23, as previously mentioned.

This difference can be explained by the fact that in one of the works the authors had not defined any keywords. This article was therefore not included in Figure 2. Another important finding is the sudden drop in the number of works in 2010. This can be explained in part by the fact that this was when surveys were being carried out (mostly from September 2010 onwards). It is also possible that there may be some works that are not in the databases studied, a limitation that it is beyond the means of the present authors to overcome.

The second important factor relates to the incidence of keywords in the works found. The incidence observed is not surprising and reveals a relationship between two of the commonest words in surveillance studies, particularly those related to CCTV: the word “surveillance” itself, one of the broadest terms in this area, and “violence”, which takes on a special meaning in Latin American countries because of the relationship between their socioeconomic situation, their recent past involving dictatorial regimes and the history of large cities in the region, where there are high levels of poverty and crime.

Figure 2 shows the number of times certain words recur. It can be seen that the words or expressions “surveillance”, “violence”, “control society” and “video surveillance” have the highest rates of recurrence (in 11, 6, 5 and 5 works, respectively). Figure 3 highlights the number of times the two commonest words (“surveillance” and “violence”) occur in the works during the study period.
One final, important aspect of the data collected in this first mapping of surveillance studies in Brazil focusing on the proliferation of CCTV is the prominence of the institutions and research centers with which the authors of all the studies and works are associated. In this case, the data source is the authors’ affiliations and the institutions where they are employed, unlike the results shown in Figure 1, which are based on the place of publication where the works were presented or published.

Figure 4 thus shows the institutions with which the authors of the 239 studies selected for the final study spreadsheet are associated. The correlation is between institutions and authors, the most prominent authors (those with the greatest number of studies) being highlighted in orange. It should be noted that the figure is organized according to the number of authors related to each institution (institutions with more than two, three or four authors, as well as other important institutions). UFRJ, for example, is clearly the leading institution in terms of the number of authors (with eleven authors and three prominent authors), followed by PUC-SP, PUC-PR, UNESP and UFRGS (with 6, 5, 5 and 4 authors, respectively).

Figure 4 (and, consequently, the data in the spreadsheet) also shows the widespread distribution of the works among universities in different cities and states, with the majority being located in the south and southeast. The southeast, for example, is represented by thirteen institutions, some of which are repeated in the sections for more than two, three and four authors. The institutions are: (a) UFRJ, UERJ, UFF, IMS, PUC-Rio and Escola Superior Dom Helder Câmara (in the state of Rio de Janeiro); (b) PUC-SP, UNESP, UNICAMP, PMSP and UNINOVE (in the state of São Paulo); and (c) PUC-Minas and UFMG (in the state of Minas Gerais). The south is represented by eight institutions: (a) PUC-PR, ANPAD, UFPR and UEPG (in the state of Paraná); (b) UDESC, UFSC and PMSC (in the state of Santa Catarina); and (c) UFRGS (in the state of Rio Grande do Sul). Two institutions from other states and regions of Brazil also appear in the figure: UFRN in the state of Rio Grande do Norte and UNB in the Federal District.
Lastly, it is also clear from Figure 4 that the prominent authors (i.e., those with the greatest number of studies related to the subject of CCTV in Brazil) are not necessarily related to the centers or institutions with the greatest number of researchers. With the exception of UFRJ, which, as mentioned above, has the greatest number of researchers (three of whom are
prominent), other institutions that are less prominent but have researchers who are active in this field can also be observed in the figure. These include UNICAMP in São Paulo and PUC-Rio in Rio de Janeiro as well as UDESC and UFSC in Santa Catarina.

**CCTV systems: technologies and markets**

When undertaking a survey of the technologies used in the Brazilian CCTV market, the main difficulty lies in mapping an area with a large number of companies, ranging from the largest ones, which are normally multinational and dominate the market, to the smallest ones, which are usually responsible for selling CCTV technology in the retail market, thus increasing the likelihood that these systems will be used in and trickle down to a variety of day-to-day applications generally involving private and personal security and private security companies.

Private security is currently a growing, economically active field in medium-sized and large Brazilian cities, with a range of companies offering security technologies and services for both commercial property security and, primarily, residential property security, which is experiencing rapid growth. The trend in the use of surveillance and security in Brazil (private companies for personal and property security) has followed the trends in other countries such as the USA, the United Kingdom and Canada. According to the *Small Arms Survey 2011* (see FLORQUIN, 2011), which was carried out in 70 countries, there are twice as many private security guards in the world (around 20 million) as there are police officers. Furthermore, according to Caldeira (2001: 199),

“In the United States, the number of people employed in the private security industry jumped from 300,000 in 1969 to 1 million in 1980 and 1.5 million in 1990. Moreover, private guards already outnumber policeman in the United States by almost three to one, and in Britain and Canada by two to one (U.S. House 1993: 28, 97, 135; Bayley and Shearing 1996: 587). Private services are purchased not only by businesses and institutions but also by middle- and upper-class citizens and even branches of the government. In all cases, consumers depend on private services for the identification, screening, and isolation of undesired people, as well as surveillance and protection of their property.”

In 2010 market research firm IMS Research published a report on the market potential for CCTV and video surveillance in Latin America. This identified Brazil as having the largest market and fastest growth in Latin America and highlighted the new opportunities generated by the decision to hold the 2014 World Cup and 2016 Olympic Games in the country. However, the company points out that the country holds little attraction for new companies because it has a well-established CCTV market with an “established ecosystem of suppliers, ranging from large multi-nationals through to home grown vendors that target the low and mid-range markets” (IMS, 2010: para.2). The report also provides interesting numbers indicating the importance of this market, with estimates that Brazil accounts for 35% of all sales of CCTV equipment in Latin America, a figure that could rise to 45% in 2014.

With the increase in the purchasing power of the Brazilian population in recent years and a significant proportion of this population rising to the middle class, the press and the real estate market especially have taken a correspondingly greater interest in the commodification of security as a commercial and strategic advantage. Indeed, it is common to see how, since the 1990s, private personal and property security has become one of the most advertised items in real estate marketing strategies (Figure 5 shows the frequency with which the word “security” with its different nuances—financial security, property security and security generally—appears in this type of advertising from the 1970s onwards in the city of Curitiba).
Clearly, this socioeconomic context provides the basis for a proportional growth in the market for technological items related to private personal and property security, where CCTV systems occupy an important position. The main sources used in the search for technologies and companies related to the proliferation of CCTV in Brazil were specialist journals (especially Guia do CFTV and VídeoSom e Tecnologia), which have a wide range of advertisements and reviews of technologies that are used in or are being introduced in Brazil, and the Brazilian Association of Electronic Security System Companies (ABESE). It should be pointed out that this study involved a first mapping of major trends in the countries originally studied and did not therefore cover all, or even a large sample of, security or CCTV companies in Brazil. Instead, priority was given to specialist magazines and journals and the ABESE for an initial analysis.

Of the 53 companies listed, only four (7.5%) were manufacturers of electronic security systems. All 53 companies sell and install these systems, and the majority (34 companies, or 64.15%) specialize in selling surveillance cameras and integrating intrusion detection or access control systems. Many of the companies (40, or 75.47%) also offer maintenance and planning services for these systems and so offer products and services related to CCTV. Figure 6 shows the extremely strong relationship between the various companies and the item “surveillance cameras”, which also appears as “security cameras” or “monitoring cameras”.

All the companies work with CCTV systems at various levels, the commonest area being sales and integration of cameras, monitors and recording systems for image-based surveillance and in some cases control of these systems with proprietary or adapted software. The spreadsheets prepared with these data include the company name, company location (head office), technologies it sells, type of technology (hardware or software) and application or service offered. Once again, it should be stressed that there is a huge number of companies in the retail market that specialize in security services (such as security patrols and monitoring of CCTV and alarm systems) and also sell equipment related to these services. Like these companies, other companies selling electronic equipment whose product ranges include CCTV are also absent from the study because these systems are not part of their main business.
Figure 6: Relationships between the companies identified in Brazil and the different CCTV technology areas they are active in.

FINAL CONSIDERATIONS
Several points should be recalled and highlighted in connection with the surveys carried out for this first mapping of the proliferation of CCTV in Brazil. Firstly, it should be borne in mind, as previously stated, that this study is a preliminary one and is intended to be the first systematic approach to the subject in Brazil, with extensive data collection and a restricted, qualitative, in-
depth analysis of the implications and repercussions of the main trends identified. Nonetheless, it is worth recalling the continental dimensions of the countries originally studied (Brazil and Mexico), a factor which led to the decision to focus on three states and the Federal District.

It can be clearly seen that there is growing interest in the subject of CCTV systems, particularly the increasingly widespread use of surveillance cameras and integrated systems, and a flourishing market organized at different levels (from multinational companies to small and medium-sized local monitoring and security companies), as well as increasing interest from the real estate market in issues related to property security. These factors tend to leverage the growth and sales of image-based electronic surveillance systems, particularly as a result of their popularization and their availability in the retail market.

Large and small companies coexist in what reports by international market research firms refer to as an ecosystem of suppliers that heat up the market. These reports describe Brazil as (a) a challenge for international companies that have not yet opened up offices in the country as they would have to adapt to the existing tough competition in the market and (b) a reflection and example of the huge market potential in Latin America for CCTV and image-based equipment and technology.

Great interest is being shown in Brazil by international CCTV companies, making it a likely target for future massive investments, particularly given the two major sporting events that are to be hosted in the country within just a two-year period: the 2014 FIFA World Cup (which will have an impact on various state capitals) and the 2016 Olympic Games (whose impact will be mainly in the metropolitan area of Rio de Janeiro). There is a huge debate underway in the political and academic worlds and the press about what the actual implications of these two major sports events will be for Brazil and the regions involved. There have been many criticisms regarding the possible negative consequences, including the use of public funds for construction work for the events, the impact of public policies in areas such as urban infrastructure and public housing, the relationships between the bodies responsible for local policies and the supranational institutions responsible for the events (FIFA and the International Olympic Committee) and, lastly, the monitoring and security arrangements.

It should also be noted that there is growing scientific interest in the subject, showing the potential it holds for the debate on CCTV in the Brazilian academic community. In this regard, the predominance of academic works required for completion of graduate and undergraduate courses (theses, dissertations and final course papers) over articles in journals and papers presented at events is notable. Furthermore, it is evidence, on the one hand, of an initial period of growth in surveillance studies in higher education and, on the other, that significant numbers of professionals and graduates with masters and PhD degrees who have carried out research in areas related to image-based electronic surveillance, CCTV and video surveillance are being produced.

It is also clear that the current legal scenario in the capitals and states studied is marked by contradiction, as little or no attention is given to discussion of the issues associated with and implications of video surveillance or to the particularities of the situations in which video surveillance is undertaken. There is a hidden concern in the laws and bills found in this study with the use of surveillance cameras merely as instruments for monitoring individuals or groups in public and private spaces.

Finally, the worrying prognosis that this mapping suggests should be clearly stated. Despite the stimulating increase in the number of studies and researchers related to the subject of CCTV in Brazil in recent years and the significant growth in interest in this subject in the Brazilian academic community, it can be observed that the highly developed nature of the market is at odds with civil society’s limited involvement in the debate on CCTV as reflected in the legislation. On the one hand, security is highly valued, as, consequently, is all the technology related to private personal and property security, and a market exists to satisfy the associated demand. On the other, the legal environment is permeated by a lack of concern about understanding the logic behind the growing use of CCTV systems and their possible implications for privacy, individual liberties and the organization of spaces in cities.
There is therefore a need, particularly in the historical and social contexts of countries such as Brazil, to promote the problematization of surveillance and safety systems, which are currently used without restrictions and without any discussion of their possible implications in social, cultural and political terms. The rapid growth in the sale and use of surveillance technologies in this context highlights the pressing need for these issues to be debated by both the academic community and society as a whole. In the words of Kanashiro (2008: 271):

“Most works discussing security, as well as those analyzing urban issues, see surveillance cameras as constitutional elements of the transformations happening in security and urban development […]. Camerai should be looked at as something more than constitutional elements. As evidenced by the work of Michel Foucault, as well as that of Gilles Deleuze (1968, 1986, 1996, and 2000), surveillance cameras can also be seen as technical objects that allow one to think about how power functions today.”

REFERENCES


