

Being visible in public space: The normalisation of asymmetrical visibility

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Abstract

Over recent decades, cities have been radically transformed by information and communication technologies (ICTs) that modify people's daily lives by reorganising mobility, infrastructure systems and physical spaces. However, in addition to the role that technology plays in the development of the infrastructure in our cities, it is also being used 'as a means of control'. This view of technology as a disciplinary tool that restructures space, time and the relations among activities has been promoted by scholars who have shown that technology is also a means of saturating and sustaining contemporary capitalist societies and deepening inequalities. However, the situation is far more complex than that. Technology is not only used top-down but also bottom-up, with individuals using technological devices to share and enhance their visibility in space. This bidirectional paradigm – of vertical surveillance and horizontal sharing – contributes to a sense of 'being exposed' in public space that normalises practices of sharing personal data by individuals and thus results in diminished privacy. This argument is supported by an experiment conducted on smartphone users that includes personal interviews and the use of a smartphone Android application that combines online tracking with experience sampling. The findings show a convergence between the online and offline worlds (a 'public' situation in the offline world is also considered as such in the online world), which is a condition that contributes to the normalisation of 'asymmetrical visibility'. Based on these results, the paper ends with a discussion of the contemporary meaning of public space.

Keywords

control, ICTs, public space, smartphone, visibility

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Public space is often perceived as a realm of contact and exchange among strangers – a realm of encounters in which the individual observes and is observed (Goffman, 1959,

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1963; Madanipour, 2003). Much discussion has taken place about the role of public space and its contribution to public life (Iveson, 1998; Lofland, 1998; Loukaitou-Sideris and Ehrenfeucht, 2009; Mitchell 2003). Erving Goffman used the concepts of 'front' and 'back' to illustrate a fundamental divergence in social spatial activity (Goffman, 1963). For Goffman, the 'front' region comprises the places where we put on a public 'on-stage' performance and perform stylised, formal and socially acceptable activities, whereas the 'back' region is the area where we are 'behind the scenes', where we prepare ourselves for public performance, or where we can relax into less formal modes of behaviour. This public/private divide, which is perceived as two exclusive categories that together account for all of the elements of life and experience, is one of the great dichotomies of Western thought. Public and private are understood as opposite but inseparable, and the extension of one sphere necessarily implies a reduction in the scope of the other. However, the validity of this binary relationship is not clear, particularly with the ongoing 'privatisation' of material spaces and the growing presence of virtual space in our lives. Clearly, the use of mobile technology in public spaces complicates traditional understandings of what it means to be in public by allowing people to bring previously private activities (chatting, reading, listening to music) into public areas (de Souza e Silva and Frith, 2012: 51). However, above all, mobile technology modifies the practice and meaning of being visible in public (Lyon et al., 2011).

Visibility, or, as argued by Andrea Mubi Brighenti, the practice of 'seeing and being seen', constitutes forms of noticing, managing attention and determining the significance of events and subjects. 'Visibility lies at the intersection of aesthetics (relations of perception) and politics (relations of power)' (Brighenti, 2007: 324). These relationships

are central in media technologies, which work as extensions of the corporeal senses and 'contribute to selectively enhance a certain type of sensory perception and establish a "ratio" among the senses, a hierarchical ranking' (Brighenti, 2007: 325). This observation regarding the way media technologies have modified visibility practices is tied to the dramatic increase in surveillance practices and the personal use of technological devices. Surveillance practices are used in many cities that have installed technological means to monitor and control public spaces with the aim of reducing fear and anxiety among inhabitants. Ideas and projects such as 'Safe City', 'City without Violence' and 'Smart City' (e.g. Campbell, 2012; Deakin and Al Waer, 2014; Goldsmith and Crawford, 2014; Pelton and Singh, 2013), which have been implemented worldwide (in large cities and small towns and in democratic and non-democratic regimes), propose to 'protect' people in urban spaces by monitoring and observing individuals and/or tracking people's locations and activities to 'optimise services'. Importantly, technology and design both serve the increased surveillance of public space. Indeed, what the organisation of space cannot achieve, direct policing and legislation are thought to provide (Bodnar, 2015; Raco, 2003). These ideas and projects 'come at the cost of excluding groups defined as dangerous or simply non-consumers, so access and safety can clash' (Bodnar, 2015). However, it is not only municipalities or governments that have modified behavioural patterns in public spaces; the personal use of technological devices and, in particular, of location-aware technologies, is also influencing patterns of mobility throughout cities as well as people's relationships with places (de Souza e Silva and Frith, 2012: 138). Stated differently, visibility should be seen as a key social concept of public life with multiple meanings that extend beyond physical seeing or what can

be seen with the eyes to the practice of 'being exposed and known' through various technologies. This condition has dramatically changed the forms of exchange in public. Social interactions are no longer limited to people in a concrete place. Thus, the physicality of space does not dictate social interactions; rather, it is one sphere among many. This state of affairs, which expands social interaction and changes our perception of time, blurs the distinction between the real and virtual and between concrete and abstract (Hatuka and Toch, 2014).

In addressing the penetration of technology into public space, scholars have often focused on surveillance practices and have seen them as an external intrusion – as a state in which the individual is constantly visible to authorities, thus reducing privacy (Dandeker, 1990; Dodge and Kitchin, 2005; Foucault, 1977; Graham, 1998, 2002; Graham and Wood, 2003; Haggerty and Ericson, 2000). Today, these studies that focus only on the manner in which central powers monitor subjects might be misleading. The condition of visibility, specifically with location-aware technologies, has become constant, not merely as a top-down practice but also with the state being supported by social platforms that impact the behaviour and exposure of individuals in public. In other words, what we see is a vertical-horizontal dynamic with unprecedented developments in traceability through digital relational databases that are developed top-down (i.e. vertically) (Lyon, 2001; Lyon et al., 2011) as well as data collection and information gathered through individuals' use of technological devices to share with and inform others in a bottom-up manner (i.e. horizontally). It is important to note that the horizontal sharing of information is the basis of social norms and constitutes a form of social control. Power is exercised in social interactions and is not necessarily limited to governments (Garfinkel, 1984; Meier,

1982; Weinberg, 2007). This premise is the departure point of this paper, which argues that this dynamic – of data collected vertically 'in the name of public safety' (i.e. top-down surveillance and 'smart' data centres) and data being shared horizontally 'in the name of democracy' (i.e. through individuals' social networks) – contributes to a sense of 'being exposed' in public space, which normalises practices of sharing and thus contributes to the norms of personal data exposure. It is important to note that this vertical-horizontal dynamic is not a dichotomist condition but should be seen as a set of juxtaposed methods of information collection and sharing that enhances *asymmetrical visibility* and contributes to its *normalisation*.

Seeking to understand the condition of visibility in public and, in particular, the manner in which visibility is activated and perceived by the self, the focus here is on behavioural practices and the sharing of data in different social settings. We show that individuals are aware of the varied meanings of the idea of visibility when appearing in public and sharing personal information. Indeed, the practice of sharing information is not a new phenomenon, but the new technologies have transformed this practice for many. More specifically, the paper discusses the practices of sharing by individuals in varied places by using an interdisciplinary methodology (qualitative and quantitative) that combines experience sampling with automatic tracking of the geographic and interactive features of the participants' smartphones and personal interviews. To collect the quantitative information, an Android application called Smart-Spaces was used that combines smartphone-based surveys with online tracking of locations and phone application usage. The Smart-Spaces application was installed for 20 days, during which the participants (51 students) answered context-based surveys during their daily routines.

Each participant was interviewed before and after the instalment of Smart-Spaces. Our quantitative findings show that there is a correlation between the type of space and the willingness to provide information, with high willingness to share one's location and other information in public spaces. Our qualitative findings show that the participants see convergence between the online and offline worlds.

From asymmetrical visibility to normalisation of asymmetry

Modern Western socio-political culture tends to differentiate between public space, which is associated with visibility, and private space, which is associated with invisibility (Iveson, 1998; Madanipour, 2003). More precisely, sociologists have developed the notion of the public realm as an arena of interaction and visibility among actors by studying the details of interactions and communication in public (Brighenti, 2010). Stated differently, the public space is considered a socio-spatial territory that facilitates and regulates interpersonal relationships (Sennett, 1976) and is where individuals present their idealised selves following (or challenging) patterns of belief and behaviour (Goffman, 1959). This interaction of seeing and being seen entails the notion of publicness, the idea that 'the space of the present is offered up to examination by all those who are within it' (Henaff and Strong, 2001: 7). To be sure, visibility is never symmetrical or equal to all viewers and thus is often associated with power; it is the ability to occupy the right locus from which it is possible to see. Seeing amounts to a 'controlling' action (Henaff and Strong, 2001: 19), as has been elaborated in theories of sovereignty, which demonstrate that it is necessary to exercise power over others for political order to be possible.

Furthermore, society is 'organized around regimes of visibility that contribute to the definition and management of power, representations, public opinion, conflict, and social control' (Brighenti, 2010: 53). Governments activate and define the scope of the visible, that is, what can be seen and, more importantly, by whom. This control of sight, of what is visible to varied agencies (e.g. governmental, commercial) is associated with the surveillance and monitoring of the activities of actors to produce personal data (Graham, 1998; Lyon, 1994). The increased collection of individual information was initially tied to more intensive forms of state policing. However, in the contemporary context of liberal democracies, states' interest in their citizens gradually shifted from the maintenance of power implied in state policing to an interest in ensuring 'national' improvement and progress (Foucault, 1977; Marx, 2002; Norris and Armstrong, 1999). This socio-political process has led contemporary states and commercial enterprises to become reliant upon the production, collection, storage and coordination of personal data for their decision-making (Henry, 2009). However, the watched individual is not a passive actor. The dynamic of visibility is always a two-way process of seeing and being seen simultaneously that affects both the observed and the beholder. Thus, particularly in contemporary reality, the scope of visibility cannot be reduced to the exercise of control by an authority supported by video cameras and satellites; rather, it should also be seen as the practice of recognition supported by location-aware technologies that modify individuals' interactions with other people, with the surrounding environment, with the authorities and with commercial companies. Location-aware technologies are very different from the Bentham model insofar as they are not interested in watching others but rather are interested in using these data to

gain something else. Scholars have suggested that the development of these location-based systems has contributed to the 'commodification of location'. In these systems, location is transformed into a digital object that can become tradable (Shklovski et al., 2009). However, at the same time, these technologies discipline people by creating networks that, rather than being centralised, develop from below as 'micro-powers'. Nevertheless, although location-aware technologies increase individuals' awareness of each other's locations, this awareness is not always reciprocally symmetrical (de Souza e Silva and Frith, 2012: 139), thus leading to situations of asymmetrical visibility. In this sense, asymmetries of visibility are asymmetries of power, not only in terms of control but also in terms of what is possible to see and by whom. The self adopts and adjusts to these technologies by perceiving them as a necessary means for supporting authoritative stability (in the case of CCTV) or as a means through which the self manages its own visibility (location-aware technologies). In other words, visibility becomes a state – a condition managed by the individual that assists him in gaining recognition but that also contributes to his exposure and supervision.

In summary, what is suggested here is a threefold argument: (1) visibility in public space is never symmetrical and is embedded in power relations and hierarchies; (2) visibility asymmetry is supported by surveillance practices and technologies that manage and control our sight through networks of micro-powers that are supported from below; and (3) these practices and technologies both contribute to a sense of 'being exposed' in public space and therefore contribute to indifference to the exposure of personal data by individuals themselves. The question is how individuals manage their visibility. When do they choose to become visible? Or are there places where they choose to become invisible? How is visibility

associated with the manner in which they perceive and define public spaces? These questions are not technical but are rather practical and political, and they refer to the ways in which we activate selective in/visibilities. By seeking to understand the condition of visibility in public and, in particular, the manner in which visibility is activated by the self, the focus here is on the behavioural practices and the sharing of data in different social settings.

Methodology: Smart-Spaces, participants and data analysis

The study was undertaken at Tel Aviv University and included the collection of quantitative (using Smart-Spaces technology) and qualitative (personal interviews) information, as detailed below. The quantitative data were gathered using Smart-Spaces, which is a dedicated technology implemented as an Android mobile operating system application that the participants were asked to install on their phones. The application combines online tracking with experience sampling. The tracking includes the location of the phone using the phone's built-in positioning services (GPS, Wi-Fi and cellular triangulation) as well as recordings of the applications running on the phone. The experience sampling method relied on configurable online surveys that popped up on the users' phones. The participants were notified about the availability of a survey by a sound and a notification icon. The location was presented on a detailed map that showed street names and specific landmarks, and four key questions were asked related to the participant's perceptions and activities (see Table 1).

The survey, as well as the design of Smart-Spaces, aimed to balance the user burden with location coverage. Limiting the user burden was considered necessary to encourage the participants to actively

Table 1. Survey questions.

Categories	Questions
Activity	'What were you doing in this place?' (meeting friends, watching television, learning, working, eating, using my smartphone, other)
Crowdedness	'How many people were in this place?' (0, 1, 2, 3–5, 6–10, 11 +)
Publicness	'Do you consider this place to be public?' (yes/no)
Locational privacy	'To what extent would it bother you if your friends on an online social network knew that you were in this place?' (1 – would not bother me, 5 – would bother me)

participate in the study and to minimise the cost of completing a single survey. Therefore, the surveys were displayed based on an algorithm that attempted to include as many of the places visited by the user as possible while minimising the number of surveys per day. The questions on each survey referred to a particular place visited by the user at least 30 minutes before the time of the survey notification. To reduce the user burden, the algorithm was adjusted to allow for at least 5 hours between two consecutive surveys and to avoid surveying a location that was already surveyed at least two times. To reduce the burden further, the algorithm only surveyed 'static' locations where the user was present for more than 15 minutes, rather than 'in transit' locations. Finally, to reduce the inconvenience to the participants, Smart-Spaces did not use a noise alert after 22:00 h at night. In addition, the participants were asked to refer to the location and time of the sample when answering the questions. All of the questions were answered using a 5-point Likert scale except for the first three questions. To provide context to the participants' reported behaviour, the information collected included the time, location and the phone applications operating at the time of the survey. On the basis of the data, several additional independent variables were added: smartphone applications, Foursquare category, time of day (morning,

noon, evening or night), and type of day (weekday or weekend).

The study's participants were full-time students at Tel Aviv University, which resides at the centre of a large metropolitan area in Israel. All of the participants were living in the city or in its immediate suburbs and commuting to the city. The use of both the internet and mobile phones in Israel make this context appropriate for the empirical study. A survey conducted by Google and Ipsos MediaCT (2013) in dozens of counties shows that Israel has the world's highest smartphone saturation (57% as of 2013) and has some of the highest values of smartphone usage measures such as application installations, mobile internet usage and mobile email usage. Therefore, when considering the external validity of our results, our sample is not representative of the general population, but the results can be considered precursors for future phenomena. Furthermore, because students are known to be early adopters of smartphone technology (Lee, 2014), their visibility practices may predict those of the more general population. It is important to stress that the participants were asked about sharing their location with all of their friends on their entire social network, not only with their university friends, to generalise practices of visibility.

The qualitative data were gathered through interviews *before* the participants started to use the Smart-Spaces application

Table 2. Questions asked before the implementation of Smart-Spaces.

Categories	Questions
Perception of public space	'What is public space, in your opinion? Can you provide examples?'
Conduct	'What do you usually do in a public space? Are there any actions you perform in public and not in other spaces?'
Perception of virtual space	'Are social networks public or private?'
Conduct	'Where will you spend more time during the day: in public space or in virtual space? Are the people with whom you communicate on the internet also people whom you meet physically?'

Table 3. Questions asked at the end of the study.

Categories	Questions
Perception of public space	'What is public space, in your opinion? What public spaces have you visited lately?'
Critical assessment	'Are there any norms or regulations in public space that you would change?'
Perception of virtual space	'Where will you spend more time during the day: in public space or in virtual space?'
Critical assessment conduct	'Are there any norms or regulations in virtual space that you would change?'

and at the end of the study. The questions asked of the participants addressed public space and virtual space (Table 2 and 3). The idea was to better understand the manner in which public space and virtual space were conceptualised and framed by the participants and how their perceptions influenced their conduct and their tendency to share data. The assumption was that the growing lack of distinction between the two would influence the norms and practices of visibility. The first set of questions (*before*) focused on definitions, practices and visibility. The second set of questions (*after*) re-addressed the definitions (assuming that they might change after the study) and regulations. The idea was to submit the participants to a critical assessment of the norms and regulations associated with public and virtual spaces.

All 51 of the participants in the research were students recruited from various areas of study, including social sciences, law, natural sciences and engineering. In terms of gender, 27 of the participants were males and 24 were females (51 in total), and the median age of the participants was 25 years, with the youngest participant being 22 years and the oldest being 32 years. Prior to the study, the participants were asked whether they had an Android phone with a data plan that could accommodate the moderate data usage of Smart-Spaces. In addition, they were asked to review and sign a consent form, which was approved by the institutional ethics review committee. The study's procedure included three key steps: an interview before the study began, a period of using the Smart-Spaces technology and an

interview at the end of the study. During the first interview, the application was installed, and assistance was provided to participants who encountered difficulties operating their phones. Then, the participants used Smart-Spaces for a period of 3 weeks. After 3 weeks, the participants were interviewed again, and they were asked to uninstall the Smart-Spaces application. The participants were compensated for their work with gift vouchers worth approximately US\$40: US\$15 at the beginning of the study and US\$25 at the end of the study.

The data were analysed using several methods. The quantitative and qualitative information was analysed separately and was then juxtaposed in a search for possible conversations and contradictions. In total, the 51 participants answered a total of 1912 context-based surveys. Before analysing the results, several pre-processing operations were performed. The data were cleaned for two types of mistakes: partially completed surveys and incorrect location information. Of the 1912 (3%) surveyed places 64 were partially completed and were therefore discarded. A further 40 (2%) of the surveyed places were discarded because the participants had marked the location as erroneous. Spearman's non-parametric rank correlation test was used to measure the degree of similarity between two independent variables (e.g. publicness and number of people) and between dependent and explanatory variables that referred to the physical/virtual context (e.g. perceived privacy and publicness). To analyse the relationships between the explanatory variables, one-way ANOVA, which compares the means of two or more samples, was applied with adjustment to dependent samples. The research methods literature provides convincing evidence regarding the robustness of the *F*-test with regard to Likert data treated as intervals, with no significant bias (Norman, 2010).

'Being exposed' in public: Two complementary perspectives

Addressing the questions of how individuals manage their visibility and how visibility is associated with the ways in which they perceive and define public spaces, the purpose of this section is twofold: first, to determine the factors that impact information-sharing practices, such as how the social properties of a place or the number of people in an area influence the tendency to share data; and second, to understand the ways in which public spaces and virtual spaces are conceptualised and perceived, and how their conceptualisation affects people's behaviour in public.

(1) *How do people manage their visibility? A quantitative assessment*

In exploring the questions of visibility and how people manage their exposure, four sets of data were collected about each place: the place's human occupation (crowded/not crowded), the place's categorisation (public/private), the activities performed in the place by the user, and the locational privacy of the place. In 14% of the surveys, the participant was alone; in 25%, the participant was accompanied by a single person, in 14% by two people, in 13% by 3–5 people, in 6% by 6–10 people, and in 26% by 11 people or more. By exploring the data gathered, the tendencies and patterns of practices were revealed. In terms of the definition of what is public, in 33.7% of the surveys, the participants classified the place of the survey as public, and in 66% of the surveys, the place was classified as private. The proportion of places that were defined as public by the participants was strongly correlated with the number of people nearby according to Spearman's *a*-parametric test ($r = 0.723$, $p < 0.0001$). Applying one-way ANOVA showed that the number of people around

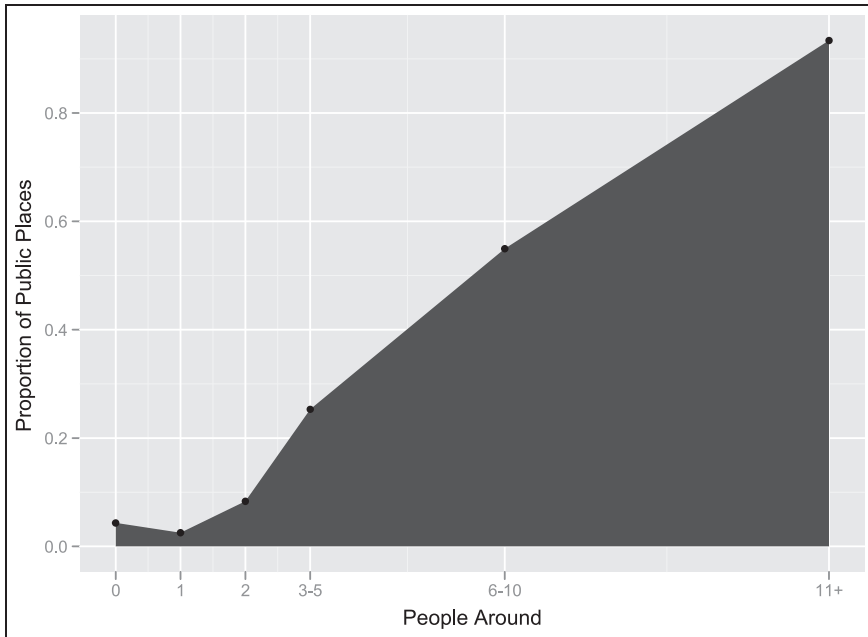


Figure 1. The proportion of public places according to the crowdedness of the place (number of people around the participant in the place in which the location was sampled). There is a very clear positive correlation between crowdedness and the probability that the place was labelled as ‘Public’.

the participant was significantly greater in places defined as public by the participant than in places defined as private ($F(245,5) = 603, p < 0.001$). The strong correlation between publicness and crowdedness indicated a consensus among the participants regarding how to define a place as public, thus providing further validation of our results (Figure 1).

Of the data gathered, the notion of publicness was associated with the types of activities that were reported by the participants and with the distribution of the number of people participating in each activity. Most of the activities were reported as ‘learning’ (26%) and ‘other’ (28%), with ‘sleeping’ accounting for approximately 40% of the ‘other’ activities. The participants had distinct patterns regarding the societal nature of their activities. Some activities, such as ‘watching TV’, were

undertaken mostly alone or among a small number of people. Other activities, such as ‘learning’, were undertaken alone, in small groups or among a large crowd (most likely in a classroom). When analysing the activities according to publicness, we found that the most common activity in public spaces was ‘learning’ (35%), while ‘other’ (34%) was the most common in private spaces (Figure 2). The least common activities were ‘watching TV’ in public spaces (only three samples) and ‘working’ in private spaces. Most activities occurred in both public and private spaces but in different social contexts. For example, ‘learning’ occurred in private spaces, in solitude or in small groups, and it also occurred in public spaces in a crowd.

In addition, there was a correlation between the type of space and locational privacy (Figure 3). In particular, there was little

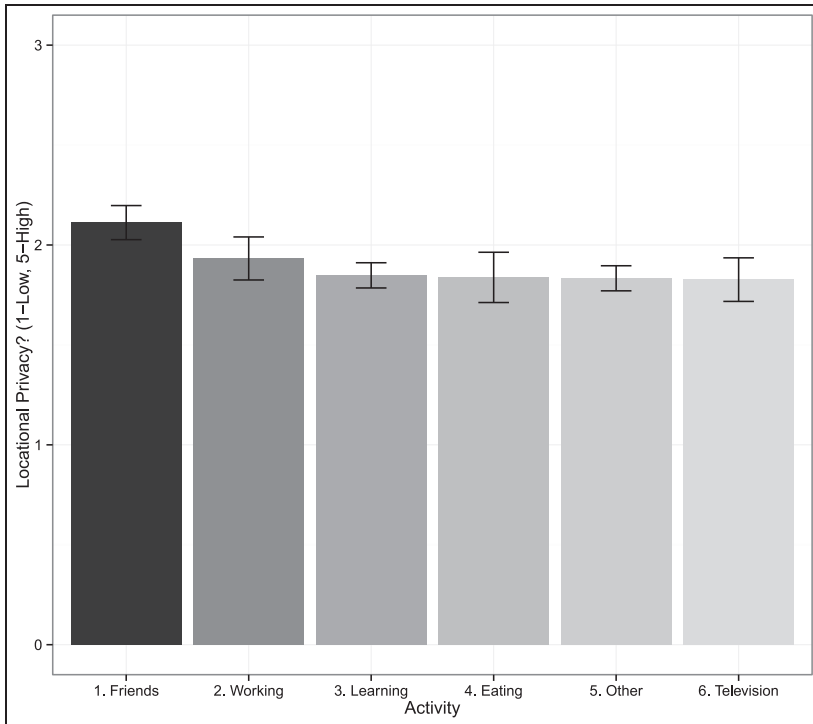


Figure 2. The locational privacy according to the activities carried out in the samples. Error bars represent the variability in the reporting. Locational privacy was significantly higher when meeting friends.

objection to sharing one's location. In most of the cases (73%), the participants were not bothered by sharing their location, and negative attitudes were reported only in 15% of the cases. The median value for locational privacy was 1 on a Likert scale of 1–5, where 1 represented the least bothered attitude. In comparison, the generally positive approach towards sharing one's location was significantly greater than that reported in previous studies of location sharing (Toch et al., 2010), which could be explained by the passive phrasing of the question. The participants' answers reflect a mostly passive approach towards being visible and not objecting to exposure rather than welcoming it or fighting it. Analysing the differences among the participants reveals that a majority (32) of the participants had a median

locational privacy of 1 (least bothered), while the rest of the participants had median values that were distributed over the rest of the values. This distribution stands in contrast to the survey results of Westin and others that portray only a small minority as unconcerned about privacy, rather than the majority (Margulis, 2003).

In summary, the proportion of places that are considered public is closely correlated with the number of people nearby. Essentially, a 'public' place is a place with many people, even if it is a closed space. In association with this finding, it is not surprising to find that people are less likely to share their locations when they are with friends, and they are slightly less likely to share their locations when they are working. However, what is surprising is the broader

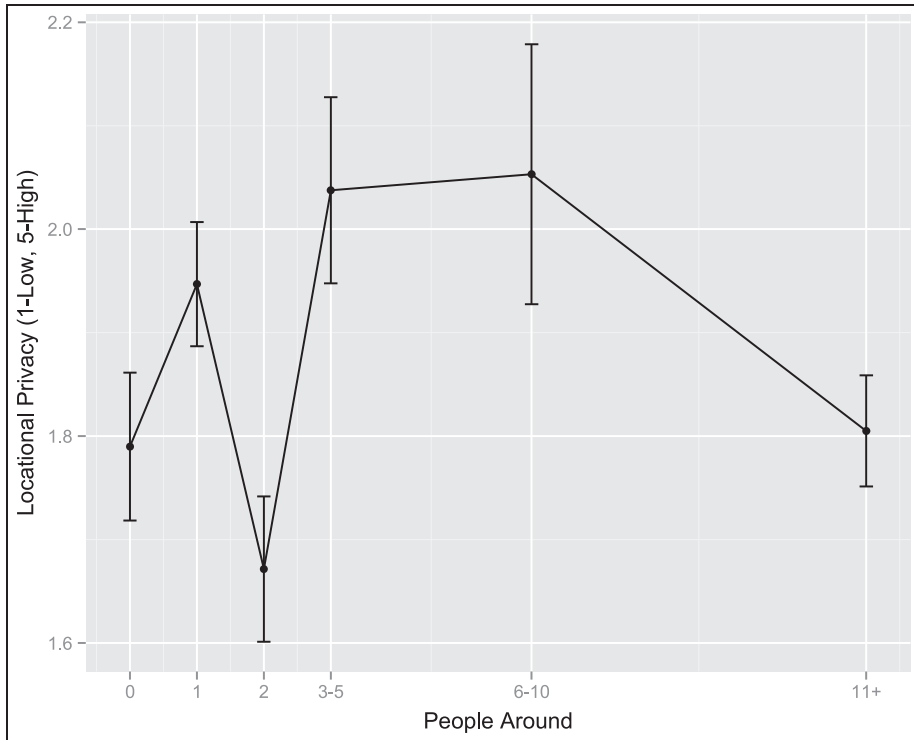


Figure 3. The locational privacy according to the crowdedness of the place (number of people around the participant in the place in which the location was sampled). Participants were least bothered about sharing locations in which they were alone, they were with two other people or they were in a crowd.

picture. As a whole, the participants were not bothered by sharing slightly more than 73% of their locations. Thus, while there are differences between sharing preferences in different types of spaces, these differences are weaker compared with the overall willingness to share all locations.

(2) How is visibility associated with the ways in which people perceive and define public spaces? A qualitative exploration

The quantitative data assist in better understanding the relationship between visibility and the perception of public space. From the analysis of the interviews, it is significant to address two key points: (a) the ways in which the participants defined public and

virtual space; and (b) the ways in which they managed practices of visibility. In analysing the definitions of public and virtual space, we examined the similarities and differences among the participants as well as the modifications made by the participants in the closing interviews. At the first interview (before installing Smart-Spaces), public space was categorised as accessible places that were crowded and that supported particular types of activities. Many of the participants started explaining what is ‘public’ by using the words ‘a space that is not private’ (26 out of 51). Examples could be seen in the following participants’ statements: ‘Everything that is not private space, it could be a space that is held by a private or public authority for public use’ (participant no. 8); and ‘All the

spaces that are not private, a space where many people spend their time, and it is open to the public at large' (participant no. 33). Most of the participants (46 out of 51) addressed norms of behaviour and visibility in public, including clothing and adaptation of the self to the environment, and saw public spaces as restrictive by noting norms of behaviour that were acceptable or not acceptable in a place.

In the same interviews, the categories used to define public space were repeated when the participants addressed virtual space. The majority of the participants perceived virtual space as public (29 as public and 19 as both public and private, with 2 as private only). Examples include 'The virtual space is public, as it is exposed to everyone. Also, friends on Facebook are not people that I see daily. These are people that became friends with me a few years ago, I know them, they are not strangers, but the fact that I do not see them daily makes this space public' (participant no. 2); and 'it is public, as it documented as well as kept forever in a database' (participant 12). However, although the majority of the participants (48 of 51) perceived connections between the two spaces (referring to circles of friends whom they met in both spaces), and they often used the same categorisations to define them, they also indicated three key differences. The first difference is viewing *virtual space* as an *enabling space* that is more inclusive and less bounded, while public space is considered to be restraining and controlled. Thus, for example, some of the participants declared, 'The virtual space allows one to do things that are impossible in public space. It allows you to approach someone with a different tone. I can declare something publicly, an act that I will not do in a place full of people' (participant no. 3); 'I will open up more to a person in the virtual than in the concrete space' (participant no. 4); 'It gives you the opportunity to approach people who in real

life you would not approach' (participant no. 9); and 'People feel more comfortable writing things than saying them' (participant no. 20). The second difference is considering *virtual space* as a place where the individual can control his or her exposure (i.e. what he/she writes) but not the use of data, as expressed in the following statements: 'The fact that it [i.e. information] is there, in the virtual sphere, I do not have any control over it' (participant no. 6); and 'I feel that I am not really aware of the norms on the net; I do not control this medium' (participant no. 18). These statements and others show a growing awareness of the limits of being exposed in virtual space. The third difference between the public and the virtual further addresses the above concern. *Visibility in virtual space was considered to be durable*, while visibility in public space (as they considered it) was temporary (i.e. not taking into account data gathered and kept by the authorities). For example, 'My main fear is from the things that will be known about me. In public space, it is less bothering to me, as they are temporary' (participant no. 3); 'On the net, things are there to stay' (participant no. 19); and 'I feel that on the net, everything is transparent, as if it is public. I will think a few times about what I write' (participant no. 23). In short, it is clear that a blurred boundary is evolving between public and virtual space that might explain the high adaptation to location-aware technologies and the willingness to share data. Importantly, in the last section of the interviews, the respondents were asked, 'Are there any norms or regulations in virtual space that you would change?' Most of the participants raised concerns regarding the use of data, documentation and personal exposure. These concerns signify awareness of the visibility asymmetries that characterise contemporary daily life.

In sum, the personal interviews further illuminated the qualitative results. For most

of the participants, exposure and practices of visibility are an integral and major part of daily life, both in public and virtual space. Most of the participants stated that they spend most of the day in public, referring to both the concrete and the virtual space.

Conclusions: Visibility as a multifaceted condition

Sight and visibility were always key categories in understanding the dynamics in public space. Today, however, with the development of social media and the significant role of images, sight and visibility have become central to examining the means by which people project themselves and at least partially manage their behaviours. The results of the experiment showed that people have difficulty defining public space, but at the same time, they are extremely aware of the notion of visibility in public as well as of the norms and regulations practiced in public space. The participants in the experiment considered virtual space to be an additional layer of public space, a space where they can project messages that the self (from their perspective) manages or controls, whereas public space is considered to be a place where the self is exposed (to others, including but not limited to the government) without control. Either way, the approach of the participants to the constant self-exposure (both top-down and bottom-up) reinforced the condition of visibility as two-way process of simultaneously seeing and being seen and collecting and sharing data, which affects both the observer and the beholder in public space. Furthermore, as noted in the introduction, visibility practices were never symmetrical, but today, it is not only the authorities that collect our information but also commercial companies and other groups. This is surely not new; rather, what we are witnessing, as observed in this study, is the normalisation of this social process,

with individuals willingly contributing information, especially in locations that they perceive to be public. In these locations, the concrete and the virtual space collide, and the participants' tendency to share information is high. It is apparent from the results that the relational aspect of visibility and its asymmetry are considered to be norms. The self is adapting and adjusting to location-aware technologies and perceives them as necessary tools with which one manages one's life.

However, the key question is ultimately more profound. Acknowledging that we live in a technology-based society and that individuals have more tools to manage and 'show' themselves in public, the question becomes how the practices of both collecting data through CCTV and sharing information through location-based technologies change not only users' perceptions but also public space itself. The question is not so much whether public space as experienced today and monitored is still public, but rather what are the lenses through which we need to look at it. As this study showed, the self in public space is (willingly or not) becoming an identifiable subject. This raises critical questions regarding some of the key categories in the literature associated with public space, such as 'crowd', 'front' and 'back', and whether these become empty categories in times when virtual space is seen as the 'front', especially because this new 'front' is a platform where identifiable subjects communicate. This condition, which is nurtured by both agencies and subjects, suggests that the idea of urban public space as a place that provides relative anonymity is shrinking. It is not clear how this shrinkage will affect the future of public space, but we can hypothesise that the new norms that surround visibility practices and data sharing derived from changing norms in the way people perceive publicness. Following this, public space should be analysed further by examining visibility as *a multifaceted*

condition (rather than a feature). Indeed, visibility as a category is not new. What is different in our times is its *contradictory* attributes, as it is (1) *constant*, taking place in all spheres of life; (2) *concrete*, maintained by identified practices; and (3) *abstract*, contributing to the asymmetry of sight and power. It is this condition by which both individuals and governments change and shape daily life. Thus, a better understanding of *visibility as a human condition*, including examination of its features in varied locations, its dynamics and its durable effects, might assist in examining and thus understanding the meaning of contemporary publicness.

Finally, what is the meaning of this process, of the normalisation of asymmetrical visibility? How might it affect future dynamics in public? There is no decisive answer to this question. One direction might be an increase in this trend without a revolt from the public. Governments are developing more surveillance practices, but they do so in ways that are not known or open to the public. For the sake of order and stability, the subject ‘accepts’ these practices and sees them as the norm. This state of mind also contributes to the willingness to expose one’s personal data and to diminish one’s (already invaded) privacy. Thus, the subject becomes more indifferent to control practices. The public is adapting to this condition. Another possibility would be developing a critical approach to this trend and particularly to the implications of these juxtaposed methods of information collection and sharing that enhance *asymmetrical visibility* and contribute to its *normalisation*. This possibility assumes that individuals are actively aware agents who understand that contemporary visibility practices provide them with tools to control their social interactions, such as setting meetings and messaging as well as ‘crafting’ their appearance in ‘public’, but at the same time limit their privacy. This path might lead the self to become reflective of

this condition and at least partially modify his or her visibility practices.

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References

- Bodnar J (2015) Reclaiming public space. *Urban Studies* 52(12): 2090–2104.
- Brighenti A (2007) Visibility, a category for the social science. *Current Sociology* 55(3): 323–342.
- Brighenti A (2010) *The Publicness of Public Space: On the Public Domain*. Quaderni del Dipartimento di Sociologia e Ricerca Sociale, 49, Università di Trento.
- Campbell T (2012) *Beyond Smart Cities: How Cities Network, Learn and Innovate*. London, New York: Routledge.
- Dandeker C (1990) *Surveillance, Power and Modernity: Bureaucracy and Discipline from 1700 to the Present Day*. Cambridge: Polity Press.
- de Souza e Silva A and Frith J (2012) *Mobile Interfaces in Public Spaces: Locational Privacy, Control, and Urban Sociability*. New York: Routledge.
- Deakin M and Al Waer H (eds) (2014) *From Intelligent to Smart Cities*. London: Routledge.
- Dodge M and Kitchin R (2005) Codes of life: Identification codes and the machine-readable world. *Environment and Planning D: Society and Space* 23: 851–881.
- Foucault M (1977 [1975]) *Discipline and Punish: The Birth of the Prison*. London: Penguin Books.
- Garfinkel H (1984 [1967]) *Studies in Ethnomethodology*. Cambridge: Polity Press.
- Goffman E (1959) *The Presentation of Self in Everyday Life*. Garden City, NY: Doubleday, Anchor Books.
- Goffman E (1963) *Behaviour in Public Spaces*. New York: The Free Press.
- Goldsmith S and Crawford S (2014) *The Responsive City: Engaging Communities Through Data-Smart Governance*. San Francisco, CA: Jossey-Bass.

- Google and Ipsos MediaCT (2013) *Our Mobile Planet: Understanding the Mobile Consumer*. Tech Report for Google Inc. Available at: <http://www.thinkwithgoogle.com/mobileplanet/en/>.
- Graham S (1998) Spaces of surveillant simulation: New technologies, digital representations, and material geographies. *Environment and Planning D: Society and Space* 16: 483–504.
- Graham S (2002) Bridging urban digital divides? Urban polarisation and information and communications technologies (ICTs). *Urban Studies* 39(1): 33–56.
- Graham S and Wood D (2003) Digitizing surveillance: Categorization, space, inequality. *Critical Social Policy* 23: 227–248.
- Haggerty K and Ericson R (2000) The surveillant assemblage. *British Journal of Sociology* 51(4): 605–622.
- Hatuka T and Toch E (2014) The emergence of portable private-personal territory (PPPT): Smartphones, social conduct and public spaces. *Urban Studies* (Online March 2014).
- Henaff M and Strong BT (2001) *Public Space and Democracy*. Minneapolis, MN: University of Minnesota Press.
- Henry M (2009) Surveillance. In: Kitchin R and Thrift N (eds) *International Encyclopaedia of Human Geography*. Elsevier, pp. 95–99.
- Iveson K (1998) Putting the public back into public space. *Urban Policy and Research* 16: 21–33.
- Lee SY (2014) Examining the factors that influence early adopters' smartphone adoption: The case of college students. *Telematics and Informatics* 31(2): 308–318.
- Lofland LH (1998) *The Public Realm: Exploring The City's Quintessential Social Territory*. New York: Aldine De Gruyter.
- Loukaitou-Sideris A and Ehrenfeucht R (2009) *Sidewalks: Conflict and Negotiation over Public Space*. Cambridge, MA: MIT Press.
- Lyon D (1994) *The Electronic Eye: The Rise of Surveillance Society*. Minneapolis, MN: University of Minnesota Press.
- Lyon D (2001) *Surveillance Society: Monitoring Everyday Life*. Buckingham: Open University Press.
- Lyon D, Doyle A and Lippert R (2011) *Eyes Everywhere: The Global Growth of Camera Surveillance*. London: Routledge.
- Madanipour A (2003) *Public and Private Spaces of the City*. London, New York: Routledge.
- Margulis ST (2003) On the status and contribution of Westin's and Altman's theories of privacy. *Journal of Social Issues* 59(2): 411–429.
- Marx G (2002) What's new about the 'new surveillance'? Classifying for change and continuity. *Surveillance & Society* 1: 9–29.
- Meier RF (1982) Perspectives on the concept of social control. *Annual Review of Sociology* 8: 35–55.
- Mitchell D (2003) *The Right to The City: Social Justice and the Fight for Public Space*. New York: Guilford.
- Norman G (2010) Likert scales, levels of measurement and the 'laws' of statistics. *Advances in Health Sciences Education* 15(5): 625–632.
- Norris C and Armstrong G (1999) *The Maximum Surveillance Society: The Rise of CCTV*. Oxford: Berg.
- Pelton NJ and Singh BI (2013) *The Safe City: Living Free in a Dangerous World*. Pennsylvania, PA: Create Space Independent Publishing Platform.
- Raco M (2003) Remaking place and securitising space: Urban regeneration and the strategies, tactics and practices of policing in the UK. *Urban Studies* 40(9): 1869–1887.
- Sennett R (1976) *The Fall of the Public Man*. Cambridge: Cambridge University Press.
- Shklovski I, Vertesi J, Troshynski E, et al. (2009) The commodification of location: Dynamics of power in location-based systems. *Paper presented at the Proceedings of the 11th ACM International Conference on Ubiquitous Computing*. Orlando, FL, USA, 30 September–3 October 2009, pp. 11–20. New York: ACM.
- Toch E, Cranshaw J, Drielsma PH, et al. (2010). Empirical models of privacy in location sharing. *Paper presented at the Proceedings of the 12th ACM International Conference on Ubiquitous Computing* (pp. 129–138). ACM.
- Weinberg D (2007) Social control. In: Ritzer G (ed.) *Blackwell Encyclopedia of Sociology*. Blackwell Reference Online. Available at: http://www.sociologyencyclopedia.com/subscriber/tocnode.html?id=g9781405124331_chunk_g978140512433125_ss1-141 (accessed 15 September 2015).