Report Shuttercam

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1. Context Shuttercam

Video surveillance is being increasingly used for various functions in the city. Combined with computer vision, the possibilities of cameras to gather data on the city are immense. They have great potential to improve city management, but such camera-based systems are vulnerable to (1) function creep and (2) can contribute to growing the surveillance state, which systematically gathers data ultimately at cost of individual rights and freedom.

Some people worry about cameras as it is not clear **what is their purpose, who operates them, and whether they are collecting data.** Furthermore, data collected by cameras could be used for harmful purposes, that violate the rights of individuals. Although there are systemic regulatory mechanisms in place (like the General Data Protection Regulation (GDPR)) to ensure data privacy, the current system of checks and balances relies on a small group of professional experts responsible for oversight. What if they fail at this? Considering the potentially huge impact of camera systems being repurposed or put to ill use for the citizens of Amsterdam, we need additional different checks and balances. Especially those that do not rely on a small class of legal and regulatory professionals.

We need to democratize oversight by involving a bigger group in checking the video surveillance system. And in order to do that, we need to enable them to play a role. But how do we do this? Considering constraints members of this group 1) would be limited in time and interest able to spend on this and 2) do not have the knowledge and/ or access to assess the internal workings of camera systems.

Solution

We can enable the larger group by providing them with reliable and easy to understand information. Therefore, we propose adding physical shutters to cameras. Physical shutters are

an intuitive - (cognitive low demanding) way to of understanding whether a camera is recording or not (and fit within constraint 1). Furthermore, they forego the need for access to the internal working of the system because they offer a fair visual guarantee that cameras are not being used (constraint 2).

Enabling cameras with shutters would allow discussion on when they can be open and allowed to record. Shutters would form a medium for privacy-interested persons to check for illegitimate ‘opening hours’ and raise concerns of excessive opening hours. They would be able to feed this back into the political process.

Just as interested lay persons play a role in other domains, so can they here. For decades, a community of train enthusiasts check if the trains are running on-time and feedback their findings into reports that are widely cited by the press and accepted by railway officials. In the realm of software, the open-source code community helps spot bugs, and check source code. We imagine this could happen for sensors in the city as well.

After an overview of cameras in the city based on their functions, we suggest a shutter system for non-security related cameras (like cameras at the Johan Cruijff Arena used to monitor crowds during events, cameras at the bridges over canals to monitor bridge opening-closing, etc). This intervention would require cameras to close their shutters when observation is not necessary. Engagement with privacy interested citizens calls for this system to be simple and intuitive. Our hypothesis is that the use of a physical shutter promises a fair visual guarantee that cameras are not being used and an intuitive way of knowing.

Goal of Research

To investigate the perceptions of the three iterations of the Shuttercam project, we conducted 14 semi-structured interviews. In this way we aimed to explore the perceptions of people on 5 different domains: (1) functionality; (2) reliability; (3) safety (4) societal; and, (5) privacy.

1) Functionality in this case can be described as, 'do you understand the function', is it apparent after one glance. How do you feel about this? As the design of the shutter is made to be intuitive, is this indeed the case?
2) Reliability is about the intuitive design, do people really agree that the shutter works? Do they trust that the design will not be measuring them?
3) Safety is described by if people feel safer with a camera around. Do they care specifically that it is on the Marineterrein?
4) Society is about people's perception of CCTV in general in the city. Is it good for a society?
5) Privacy can be described as the extent to which people are concerned about their privacy. If they are doing things to secure their (online) privacy. And the testing of a couple scenarios that test whether people are concerned with their privacy.

Analysis

14 participants, and thematic 'descriptive' coding. Participants ranged from 24 to 69 years old. All of them live in Amsterdam, and most of them had visited the Marineterrein before. 8 were women, 6 were men.

1. Functionality

Visibility of the Shuttercams. Most participants did not see the cameras at all, before the researcher pointed them out. P4: 'I did not even know that there were cameras here'; P1: "It does not catch the eye, but now that you say so I see it". Just two participants saw Shuttercam 2, which is located near the swimming area (P2, P6). This may have been because the size of the cameras is quite small, and the information boards are not placed in a salient location. Only Shuttercam 2 is located on a location that people more often walk by and where there are more likely to see the information board or the camera.

Trusting the Shutter. The project aimed to make shutter of the camera intuitive, which was successful. People understood that when the shutter is in front of the camera, it will not record. However, the function of the added windup-mechanism of Camera 3 and the Button of Camera 1 were not immediately clear. Participant 7 said that 'I had to read three times before I thought 'okay that is how it works''. Participants 2 and 6 saw the button of Camera 2 but thought that it might have caused an alarm to go off. They said that it was not clear on first side that they were free to push the button as an experiment. Only after the interviewer told them about this, it became clear. P6: 'I did understand what it was for, but I do not know if I had the courage to push the button'. Thus, although the shutter of the camera was quite intuitive, the interactive function of the camera was not very clear.

Function of the Camera. There was more confusion about the function of the camera. When the camera was shown by the researcher the function of it was not immediately clear, as its function as predominantly seen as for safety purposes. Some thought Shuttercam 2 was for swimming (P6), others did not know what to make of it (P7; P10; P11). In first instance, most of participants did not think that the camera can record, and did not know about the anonymization of the data.

Function of the Shutter. There are mixed results about the function of the added shutters. Some participants intuitively understood what they were there for (P6, P10). Though, after explaining it became clear to almost all interviewees. The button of Camera 2 had mixed results as P9 noted "I do not like for privacy goals that we can shut off the camera".

Function of the information board. Almost all participants found the information board to be very clear. Just the information about the wind-up mechanism was found to be difficult. P7: "the board is quite unclear, I would like to have more clear what the function of the camera is". This was said when the board was still partially taped of because of the request by the Marineterrain.

2. Reliability

Most participants perceived the shutter as reliable. Though some did not believe that it could be guaranteed that the Shutter would be working without any errors (P5, P8). One participant thought that the other visible electronic devices could be measuring her (P1), but the rest of the interviewees did not view this as a problem.

Trust in government. A large portion of the participants did not have any difficulty with being recorded by the government. As P4 states "as long as it is in good hands, or there are good regulations I do not have any worries about being recorded". P9: "I see that the municipality is working on the project, that gives me the trust that the data will be handled in a responsible way". Others thought that if the municipality had placed a camera here, there would have been a reason for that (P9, P11, P12). Participants had different feelings about private parties, a lot of similarities were made with social media companies, who are known to track people's data. P3: "in general I am super okay being filmed; I trust more in the government than Facebook having data about me".

Awareness. Especially design of Camera 1 was seen as creating awareness about privacy and the ease of the placement of sensing devices. As P7 adds “I think it creates awareness around what we’re doing. Now when someone leaves a company, the transfer about the sensing systems might get lost and forgotten about”. Adding a wind-up mechanism adds a layer of awareness.

3. Safety

There are very mixed results about cameras adding safety. Some participants underlined that it predominantly creates distrust (P1, P2, P6), others thought that it would not have any effect (P12, P14). For another participant cameras indicate that bad things happen at a certain location (P6). On the other hand, other participants liked the idea of cameras (P3, P4, P7, P8, P11, P13). P3 thought that it creates incentives for people not to behave badly, while P4 and P13 stated that it helps with the feeling of safety. P7 underwrote this, especially on desolate locations cameras helped her with the feeling of safety. Others were more ambivalent towards cameras (P6) said that it did not enhance trust or distrust, while P12 and P14 said that they accepted it but did not think much of it. In general, a small group of participants were really against cameras or ambivalent, while the majority was quite positive.

People scare each other. Participants insisted that a possible byproduct of cameras is that they increase the feeling of anxiety: “people only scare on another, think of those neighborhood watch WhatsApp-groups, it is similar with cameras it does not solve the problem” (P2). P8: “I miss the privacy we had before, where you could trust on another. Everything is solved nowadays with cameras, not with trust”. P13 and P14 added that especially private cameras may induce fear into people.

4. Privacy

Some were against filming or measuring altogether (P1, P2, P8). Of those, two participants thought that the shutter created a façade, an illusion. A majority was positive about the shutters, P9 stated “often you have to believe that you are filmed/measured anonymously, now there is a cap”. P13 and P14 thought it was a step in the right direction, while P3 and P10 were ambivalent towards the shutter.

What happens with the data? One interesting point that came up during the interviews was that people wanted insight into what happens with the data of sensing systems in the public space. P1: “what happens to footage I’m on?”; P3: “what is the purpose of collecting this data; what do you try to achieve; what do you do with the data?”. P1, 3, 5, 6 all were worried about this. Moreover, others were wondering how the data would be linked to other information (P9). The interviewees indicated that they were missing insight into the purpose of the camera (P10). This is of interest, as this is displayed at the Marineterrein. P11: “A lot happens behind the scenes that we are not aware of”, “I think it is important that we as citizens know if something is in a cloud somewhere or not” (P6). One participant (P9) stated that it is currently hard to control the surveillance of cameras and that the shutter is definitely a step in the right direction. “It is not like the old days, where there were tapes that could be seen once. Nowadays, the data is forever somewhere in a cloud”. Others were worried that the data would be bunched together as a file somewhere (P13, P14). Another remark by P10 beautifully portrays this: “It is very easy nowadays for authorities to collect data, measuring data is so easy. It is like a dragnet” (P10).

Unobserved through the city. Some participants had the feeling that, it wasn’t the cameras that there were other powers in place that are observing them. Such as satellites (P8), cameras out of sight (P11, P12, P13).Some participants felt that that they were always observed “my covid-app observes me, or another camera. I cannot go unobserved through the city” (P1). A lot of participants expressed uncertainty about this: “it is the question how this

data is combined, you know. We mustn't have the feeling that we are continually observed wherever we are" (P9). Others could be described by

Government is lagging behind. Some interviewees were not that worried about government being the surveillant. Firstly, many participants expressed trust in the government (P3, P6). Others, said that mainly tech-companies would be the ones surveilling (P2, P3). Others stated that the Netherlands would never go as far as China, and that this would not be an issue (P3, P6).

"I have nothing to hide". P3, P4, P5, P8 and P11 said that there were law-abiding citizens with nothing to hide. This often translated into the opinion that they did not really care about the cameras being on or off in general, or with shutters.

Internet vs. Public Space. There was a gap between thinking about privacy on the internet vs. in the public space. Most participant were aware of how they could improve their privacy on the internet but did not think about this in the public sphere.

Use case for the Shuttercam

It was difficult for participants to imagine a use cases for cameras or crowd monitoring devices. Especially because this is predominantly in the interest of the municipality. While some saw some advantages being able to know where it was busy, most participants were not really interested. One participants (P9) said that he would like to use the counter for measuring if mopeds were using the bicycle lane, instead of the road. This would be a good use case, as his children would still be outside of the camera on non-busy hours.

Scenarios for talking about privacy.

Scenario 1: you're suntanning on Marineterrein, but you're actually still working. Every participant agreed that this was an infringement of privacy. So, although all people may not

be consciously thinking about privacy in the public space. When it carries through, they do have an opinion about this.

Scenario 2: garbage in the parc. Let us say that the garbage bin is full, and you throw the garbage on the ground. Would it be okay if a camera could see you and give you a fine? The results were more mixed here. People found garbage next to bins in a parc a considerable problem. So, most of them were in favor of fining people for it, maybe through CCTV. However, it should not be registered forever in a system. P3: “it would be good if the guys that litter receive a fine, it would be bad if it goes a step further”. P7: “sometimes it is not the citizen’s fault, as there is a lack of bins”. This scenario was more contested as participants thought that the root of the problem was a lack of bins.

Specific points about the cameras.

Camera 2: People were scared to push the button (P2, P6, P9).

Camera 3 extra effort: this was not immediately clear to people. (P3, P7).

Discussion