Panopticism for the control on personal digital data

How does it feel that you could be observed on your personal data?

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ABSTRACT

The feeling of freedom and control is disappearing in this world of digital surveillance. The EU General Data Protection Regulation has reshaped the way in which data is handled but digital users are excessively willing to disclose personal information. We don't see yet how valuable this data could be and how the way the personal data is controlled may conflict with our moral values. The initial question is what kind of personal data control approach is desired in this world of data capture. For this research project the Panopticism-theory is used as inspiration for the method of the study. This social theory is named after the Panopticon that symbolizes a representation of power in which behavioral change could occur. The research artefacts from the two iterations are designed based on this symbol and give a physical sense of exposure that visualizes the intangibility of digital data surveillance. The artefact is meant to stimulate this ongoing debate.

KEYWORDS

 $Pan optic is m; pan optic on; privacy; personal\ data; design-fordebate; practice-led\ research$

1 INTRODUCTION

Through the internet data can be created, stored and provided. With the rise of Internet of Things (IoT) countless objects are connected with the internet and because of that, a lot of data is available and shared. Even in our own homes, the most private individual space, there is a big brother manifestation [2]. By the new home motoring IoT products located in the house, there is data created in a highly sensitive context and there exist insecurities to what extent this type of data being collected is crossing the privacy boundaries [5]. The boundaries between public and private space will blur [11]. This is not only the case with giving information within our homes. Social media users are excessively willing to disclose information without realizing it. During this disclosure, users deploy their own control on personal data and thus their privacy [14].

We live in a time where many innovations are taking place in the field of Big Data. Through data mining and new storage technologies it is possible to gather large amounts of data and analyze it to come to new insights. There are

advances in better marketing and decision-making processes [11]. There is the opportunity for commercial parties to offer the most profiting advertisement with these target marketing improvements. An accepted cookie and every collected preference a user makes available can help a connected company to make a profile based on the IP address more specific, connecting it to other profiles, and to improve the advertisement by fitting more to the users need [9]. This Big Data hype created a utopia with the improvements of machine learning and artificial intelligence. This causes overrated innovations where there are ethical omissions and incorrectly assumed outcomes. Although these innovations bring a lot of good opportunities, we should not be blinded by the changes happening in Dutch society that are irreversible. One of the major challenges with these innovations is to preserve individual privacy [11]. Data is not generic and just that data is accessible does not make it ethical [2]. As stated by Boyd and Crawford (2012): "Any data on human subjects inevitably raise privacy issues, and the real risks of abuse of such data are difficult to quantify." There have been situations were 'public data' in done research is misused. This declares the fragility of the presumed privacy of online shared data [15]. The importance of these problems even resulted in new legislation in Europe concerning this topic named The EU General Data Protection Regulation (GDPR) [4].

This affirms contradicting desires about the moral value of privacy. On one hand there is an unavoidable conflict with this value, but on the other hand there is the desire to have these innovating developments and the need to be active on social media where the data sharing is inevitable. This bring up the question if users are even aware where personal data is ending up and if they have privacy concerns, and why they do not act on it by changing online privacy management. [13] Perhaps the personal control the GDPR stands for is does not suit the desires of our society. A better question could be who should be in charge of being in control of personal data in this Dutch society.

A different scenario that could be taken into consideration is based on transparency. An article by Hoof et al. (2007) states that "In this era of rapid developments related to privacy and ethics there is an urgent need for total transparency and clear definitions." [5] When all digital data would be available in an open register, everyone interested is able to access it. This overall transparency could promote trust.

Another scenario the Dutch society could adapt to is to have a monopoly that has exclusive control. The government could expand the control to include online data traffic as well, or the society could transform into a total capitalistic one where one influential private company would store and control this data. This situation is in some form already existing in Chinese society. Private companies and the government are working together and analyze collected digital data from social media and online shopping. The government gathers large amounts of information about their citizens through tracking online traffic and surveillance cameras all over the country [3]. The use of this system of algorithmic surveillance could be applied in the Dutch society to reduce the significance of the contradiction.

There are differences among our Dutch society. Moral virtues are important in order to make reasonable and conscious decisions for the society as a whole but it is very individual oriented that causes the desire for a good life with decisions made for the individual. This next contradiction leads to the main question of this research. If there is a need for the best of both worlds, is the GDPR scenario the one that is best suited? Generally speaking; What kind of personal data control approach is most desired in our society?

This document will discuss the theoretical background this study is inspired by. The research question is scaled for the two iterations developed in a way that is addressing a part of the main research question. That is the area this study is focused on. The iterations consist of a method description as well as the meaning and design decisions of the research artefacts. The insights are formulated as qualitative data gained from the done tests and held discussions. In the end an overall conclusion is made.

2 THEORETICAL BACKGROUND

The way this question is addressed is by looking at the possible scenarios stated above. The similarity between the transparency- and the monopoly-scenario is that there is a possibility that you could be observed while you are

digitally active. This highly related to the architectural design ideas of the Panopticon from the social theorist and philosopher Jeremy Bentham and the associated Panopticism social theory developed by philosopher of modern disciplinary societies Michael Foucault [6]. This theory is an inspirational foundation for the approach of this research.

2.1 Jeremy Bentham

Jeremy Bentham was an English philosopher and regarded as founder of modern utilitarianism. Bentham defines the ultimate value in life as the principle that "it is the greatest happiness of the greatest number that is the measure of right and wrong"[7]. His design of the Panopticon is a design of a circular building with an observation tower in the center that would increase security by facilitating more effective surveillance. Occupants of the outer rooms would be visible from the center but the one in the center would be invisible to the occupant. They would not be able to tell if and when they were being observed and this changed their behavior in discipline. [12] This 'all seeing' panoptic style of architecture is usually associated with prisons. This visibility is a trap since the panopticon induces a sense of permanent visibility that ensures the functioning of power. It gives power over people's mind through architecture. Bentham believed that activities are better conducted when supervised. The panopticon gives authority a physical sense of exposure without actually showing anything [6].

Jeremy Bentham could have seen potential in the transparency scenario. He believed that transparency has moral value, privacy is transparency. A transparent surveillance is useful way to achieve an understating and improvements for people's lives [10].

2.2 Michael Foucault

The social theory named after this style is focused on the experimental laboratory of power in which behavioral change could occur. Foucault viewed this as a symbol of the disciplinary society of surveillance. He created a panoptic scheme that could be used when one is dealing with multiple individuals where a particular form of behavior must be imposed [12]. His theory was targeting disciplinary societies; a theory of discipline in which everyone is observed and analyzed. The focus was on discipline and punishment. A statement from Foucault in 1975 that illustrates this is "He is seen, but he does not see; he is an object of information, never a subject in communication." [6] The 'he' in this saying is the observed subject. He polices himself for fear of punishment.

3 OVERALL APPROACH

Since the issues around this subject are still adding up and the existence of a real understanding is arguable, an interest way to approach this is through provocative design. The created discussion can be a contribution around this subject and it should enable to think about the future, and critique the current habit [1]. The goal of this research is to provoke a reaction and understanding of the current situation and the impact it could have in the future when the ethical issues omissions endure by using showing different ways of handling personal data control through a research artefact.

The similarities between the second and third scenario described above is centered around the fact that you could be observed and monitored at all times. The difference is in the type of audience that could observe. This study is focused on this notion with its main question; How does it feel that you could be observed and monitored the time you are digitally active? Which audience has the most impact on these feelings?

The overall approach for the research is based on the Panopticism theory. In this study a research through design approach is used. The design is represented by a provocative research artefact that imitates the effect of the symbol of a disciplinary society of surveillance. The interaction is passive but because of the visual appearance the public will be aware of its state. The experience the artefact should intent is inspired by the way the Panopticon is designed; the participant need to have the feeling that he could be observed at all times. This way of experience design should bring the desired outcomes. The expected outcome is related to the theory as well. There could occur a behavioral change by having conflicts with personal moral values, especially concerned the feeling of freedom and control. It is expected that the least desired situation is the one were all personal data is controlled by a monopoly with a capitalist purpose.

Gaining insights about the feeling of freedom and control of (online) digital activity, possible behavioral change, conflicts with personal human values and the authority audience has the most impact on these feelings.

4 ITERATION 1

The goal of the first iteration was to form a first representation of the research question into a design. The audience was differentiated by separate items that would help for identifying the different amount of impact per one. The study consisted of a first person perspective phase, a pilot test and a follow-up test. The participants and parties involved were asked to sign the informed consent form when agreed. These can be found in appendix 1. The key element of the study was the belief that personal data was gathered from the participant and made available to the different audiences. In that way the feeling should exist that the participant could be observed by those audiences at the time indicated by the artefact. The main goal was to influence unconsciously and create a token of discipline.

The participants for this iteration are people that work in different profession areas. All participants are mostly employed to work digitally on a computer. Their working days take mainly place behind their desk. The context is located at the participants working environment. The research artefact was located in clear sight on the participant's desk to provide the provocative effect.

4.1 Method

Participants were asked to indicate an authority figure from their working environment and an acquaintance relation. These representations for the audiences were relevant for the credibility of the study. They needed to act as if they really would get insight in the data collected from the participant's computer on a regular working day through the artefact.

After the agreement of all parties involved the first introduction to the artefact was very important. The initial information told was guiding for the outcomes of the study. Therefore no more information was given besides what was stated on the informed consent form and the practicalities regarding the installation of the artefact. An installation guide was given with the expected tasks. This guide can be found in appendix 2. The duration of the study for each participant consisted of three days. It relates to three parts:

- Part one concerns the installation of the research artefact on the desk of the participant with a short translation of the consent form of what the Passages indicate are representing.
- 2. The second part was the phase where the participants do not have to interact actively with the artefact. They are supposed to work regularly but with a clear visual on the research artefact.
- The last part was a semi-structured interview of approximately an hour where the main participants could share their experience and gave insight on their desired way of controlling personal data.



| Dag 1 - middag | Датим : | Tuo: | |
|---|----------------|---------------|--|
| HOE BEWUST BEN JE VA | N DE AANWE | EZIGHEID VAN | |
| HEEL ERG ERG NEUTRA | AL NIET ECHT | HELEMAAL NIET | |
| 1 2 3 | 4 | 5 | |
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| IK VOEL ME | | | |
| DOOR DE AANWEZIGHEID VAN DE DOORGANGEN. | | | |
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| Dag 1 - einde dag | Датим : | Tuo: |
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| IK VOEL ME | D VAN DE DO | DORGANGEN. |
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| OPMERKING: | | |
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Figure 1. user diary day cards, first day

A user diary cards, as shown in figure 1, was used to document the corresponding feelings and consciousness regarding the present design during the second part of the study. During one day, three cards needed to be filled in; at the start of the day, at lunch time and at the end of the working day.

4.2 Research artefact

The research artefact consists of three Passages and a connection to the computer (see photo 1). These Passages give the impression that it collects all digital data produced by the participants. Each Passage represent a different audience.

Three different audiences could have access to this data. At the end of the study the participant needed to believe that this data was made available for the audience and that they were able to analyze and examine it. The kind of impact of the feeling of surveillance that is dependent on the type of audience could be differentiated/measured in this way. The types of audiences are;

- An authority; an influencing factor that affects the feeling of responsibility and provides certain expectations. This could be a parent for a family context, or a manager or boss in a working environment.
- An acquaintances; the personal connections that are curious and interested. There is a transparency in the relationship that is even translated in the accessibility of digital data.
- Commercial company; the audience that uses digital data for target marketing purposes. This capitalistic audience could have an interest in the data to increase sales.

For every participant the specific representation is tailored to the participant, except for the commercial company. For this the content-marketing company Coosto was chosen as a representation. There was no real connection with this company. The representation of this audience needed to have a legit appearance for credibility purposes. The research artefact is a representation of these audiences indicated by three separate passages. Each passage can transform from mirror to window. There are two different situations of this transformation; all passages are mirrored or one passage is open. This can relate to the following states:

- When the passages are all mirrored and thus closed it will reflect personal control.
- When the audience has no access possibility, its corresponding passage is mirrored and closed.
- When the audience has access, its corresponding passage is see-through and open. At that moment the impression exist that the collected data will be available by that specific audience and the participant could be observed and monitored.

At the end of the study the participants needed to believe that the data is gathered and distributed over the three audiences. It would give the impression that there could be a possibility that they could be confronted with personal information useful for that specific audience. The purpose of the study is to provide a situation where the participant could be observed and a behavioral change could occur.

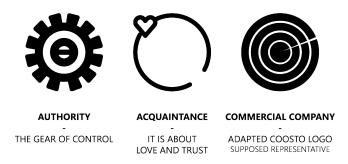


Figure 2. audience representation in logos



Photo 1. Research artefact in context

4.3 Design decisions

The architecture of the panopticon is based on the fact that surveillance is possible but does actually has to happen. The audiences described above needed an individual item in order to investigate the difference in impact. The size of the frames is referenced to the space available in a working environment. It should be visible but not distracting through size. The closed state reflects the personal control. When the frame transforms, this control is faded and given to the other party. This metaphor combines the contradictions mentioned in the introduction into one design. The reflection the Passages give is a distorted reflection of having own control that slips away that easily. The effect of this change is created by picture frames with the glass front covered in mirror protection film. The side with the most light will see the reflective surface. The initial state for this study is a dark-inside-frame that causes the Passages to be mirrored. When transformation is needed LED lights inside the frame will turn on. The inside is brighter that results in a translucent front.

The lights will turn on slowly in a color corresponding to the different audiences. The colors are chosen according to the general color meaning and psychology.

| Authority | Blue – neutral, power, knowledge |
|--------------------|-------------------------------------|
| Acquaintance | Pink – love and friendship |
| Commercial company | White – transparent, insubstantial |

When translucent the frame shows the audience that could have access to the data according a matching logo. The logos are shown in figure 2.

The method of this iteration revolves around credibility. The installation of the artefact contributes to this important factor. The installation of the processing

program looked complicated and the communication about the importance of an internet connection was exaggerated. There was told that the application needed to run the entire day. It was created as following;

- The participant needed to start the application
- Indicate to start a timer by clicking on the button 'start the day'
- The timer increased in time during the day
- The button 'end of the day' was clicked at the end of the day
- A message is shown; sending to server to give the impression that data is actual saved and uploading

The lights in the frame work together with the Processing program. When the 'start of day' was activated, the frames would wake up all at the same time. When the 'end of day' was activated the lights in the frames showed a movement that indicates the uploading of the data per frame. This lighting behavior is programmed as a representation the waking up and a sending movement.

The frames transformed randomly from reflecting to translucent. Only one frame can be translucent at a time. The time in between is random between 15 and 35 minutes, the duration of an open passage is random between 5 and 20 minutes. These durations were tested through a first person perspective approach. The feeling of visible but not distracting needed to be uphold with having enough passages opening in one working day.

4.4 Results & Insights

The overall impression of the passages for the participants was that it was a little awkward with three mirrors located on your desk. It was perceived as a distracting factor that limited the freedom. "Why is that passage still open? Just stop it!" – quote P1

There were moments when they would look if they looked okay before entering a meeting. The feeling of being

watched felt for both test situations as real time. It felt as someone was standing behind you and looking over your shoulder. This feeling was not the same for every audience.

4.4.1 Authority

This audience had the most controlling impact. The participants focused on their work to make sure they did enough. "Oh, I need to focus on my work now, but I'm doing my job and the pace is good. I'm productive so he has nothing to complain about." — quote P2 P1 even left his work later than normal when this passage was still open since he didn't want to come over as lazy or greedy.

4.4.2 Acquaintance

This audience caused a positive distraction from work. "A nice, I'm thinking about him during working hours. How is he feeling and what would he be doing now? And then I was distracted and send him a WhatsApp message." — quote P2 In both cases the relationship with their partner is based on trust and communication. The only moment when the partner would have any impact is when one is distrustful and what to control the other by looking into their digital data instead of communicating. "but if you are at that point in your relationship, something else is not right. It feels the same as looking into the others phone and we all know how that scenario ends up."—quote P1

4.4.3 Commercial company Coosto

Coosto was the unknown party. The unfamiliarity with the company ensured that the usefulness of the collected data for the Coosto was also unknown. The participants had indifference feeling towards the company. It was therefore the least favorable audience. "You cannot be held accountable for the consequences and when something does happens with my data and I am confronted with it, am I not able to defend myself towards them." – quote P1

"It is a company that I don't know. I do not know their intentions and therefore there is not an immediate impact. The ignorance does not give me a positive feeling towards them and I do not even know what the company actual does." – quote P2

Even as audience matters the personality matters as well. P1 needs distractions from work in order to create the most productive results. With the presence of the passages he felt like he was not allowed to have those distractions that made him work less productive. The feeling of being

controlled had a negative impact. The personality of P2 is very optimistic and possible a little naïve. P2 sees the best in people and has great confidence and positivity towards society and this research. With this trust, the negative effects did not come to mind during the study and therefore no conflict of human values was detected. During the semi-structured interview this topic came to mind, the participant pointed out that the audience matters. Not every colleague is allowed to have the same information. If an audience would be represented by a colleague the participant would not have agreed to cooperate.

The results of the five day pilot and the three day follow up test had one large similarity. As can be seen in table 1, 2, 3, 4. the awareness of the presence of the passages decreased over time. The impact over time is determined on the basis of the feeling description on the user diary cards. The level is specified by categorizing these descriptions. The decreasing levels suggest that the participants were getting used to having them in their work environment. Participant 1 explained this as follows on the last day: "It doesn't matter anymore whether the passages are on or not. I mainly do not take it into account because today I left my place several times and the work I have been performing on the computer is not that interesting. It also gradually gets normal that the passages are desk." present on my quote Also participant 2 points out that the curiosity fades over time. "In the beginning the lights were really intriguing, especially at the start and the end of the day. And although the lights cheer me up I got accustomed to them." quote **P2** Another reason the emotions become neutral towards the passages is because no confrontation was happening. When the participants does not feel an effect or consequence, the fear of confrontation goes away.

The main reaction to the topic discussed in the study is neutral to negative. When no trust would exist in the world, the thought of having others control your digital behavior bring negative emotions along. The interview that in addition functioned as a discussion, mentioned human values as privacy and freedom and the conflict with the two. Transparency could be an option but only concerning personal data. Private digital data should be controlled by the individual and the separation between the two is also up to the person himself. As p2 mentioned: "I would not be able to be myself. I would not be an individual but a pawn controlled by another."

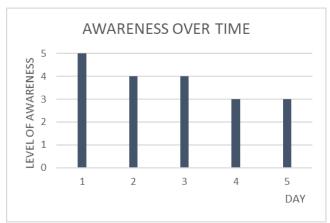


Table 1. awareness over time participant 1

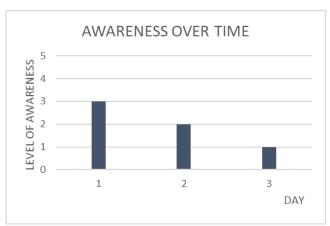


Table 2. awareness over time participant 2



Table 3. impact over time participant 1

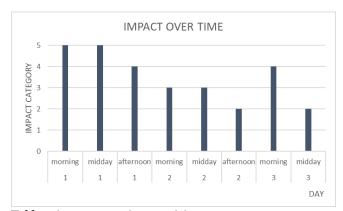


Table 4. impact over time participant 2

5 ITERATION 2

For the second iteration the goal was to bring the subject to a broader audience. The context this debate took place was a situation where Industrial Design students from the TU/e present their work. This gave an opportunity to engage visitors that were interested in the used archetype in conversation. The setup should include the same sentiment as by the first iteration and trigger a debate about the same subject with the inspiration of the Panopticon design.

5.1 Method

The research artefact was positioned at a noticeable place that would catch the eyes of the visitors of the day. When interest was shown in the story behind the exposition, the researcher engaged immediately to trigger a discussion about the subject. In order to gain useful results the conversation was recorded after a verbal agreement. The researcher had a proactive role in order to proceed a conversation related the topic about how it would feel if you could be observed and monitored.

The overall impression of the demonstration needed to be accessible in a way the audience could easily relate to. The role of the artefact in the research strongly favors a subjective viewpoint and it was the tool for collecting information and understanding. The exposition existed of hypothetical possibilities that could inspire the audience to think not only about what they desire for their future selves but also what they do not want. This approach is corresponding with a speculative design approach in a practice-led research [1, 8].

5.2 Research artefact

The artefact needed to stand out in the area of the exposition to act as a discussion piece (see photo 2). It consisted of a total twelve frames on a self-constructed wall. There were five inactive mirror frames, six changeable mirrors and one research poster frame. The six changeable mirrors could transform from mirror to picture frame. The pictures were representations of the audiences described above, divided in two per audience. The pictures used correspond with the idea that the wall is a portrayal of the researcher's living room wall. They illustrate relations that one can easily relate to. The pictures divided per audience are;

| Form of Authority | The Pope Project Coach |
|--------------------------------|---|
| Personal informal relationship | Mother Grandparents |
| Commercial company | Google represented by Sergey Brin and Larry Page Facebook represented by Mark Zuckerberg |

5.3 Design decisions

The set up was created in a way that is was easy to construct and deconstruct. The frames were separately connected to the main connection for flexibility. The changeable mirror frames were built from an existing picture frame with room for a LED strip, similar as in iteration 1. The glass was covered with a mirror protective film that transforms from reflecting to translucent surface. With enough light in the insight of the frame, this transformation occurred and the picture was visible. The difference is the color of the light and the contents of the frames. In this case the picture was already colored and

only white light was needed. Also the light turning off and on was rapidly for better visibility and a noticeable transformation from mirror to picture and vice versa. The transformation occurred at random. One frame would transform, after a random duration the another would light up, at the next change the first one would form back into a mirror. This process happened the full demonstration day.



Photo 2. Research artefact in context

5.4 Results & Insights

The respondents did not imagine having a wall were the pope could watch along. It would feel as a violation of their privacy. The home environment is seen as a safe haven and the place you can be yourself. "When someone would watch along I would not be myself anymore. I would act differently, no matter who is in that frame." – response 1

The least preferred audience would be the authority figure. The parents would be nice to give them a piece of your life, but for the boss or a coach this is not that desired. "My boss already determines everything I have to do at

work, I do not want him to control what I do at home as well." – response 2

Most people saw the demonstration as a future perspective, a representation of how it could feel like in the future. When asking what the difference will be in the future that Google could watch along, this answer was revised. "It is indeed something that probably happens today. I connect everything to my Google account. It is mostly for convenience but I did not see it as them watching with me while I'm cooking dinner." — response 3 The respondent did found the recipe online with google search.

"what is the difference between the two? To what extent would this act as the same? I think that it indeed already happening and that this could be a scenario of the present. How weird and what a negative thought." - response 4

The entry of the new GDPR legislation is not seen as an improvement or change for now. The idea of having the law is as a token of personal freedom and feel of privacy. The legislation is new and the consequences are perhaps not noticeable. "The generation that is currently in high school are obsessed with their smartphones and are active on every social media. Hopefully they will profit from this legislation. So it could be helpful for that generation." – response 5

Privacy is the human value that is mentioned the most. The home environment is sacred and private information should not end up in the street. The need for personal control and at the same time the amount of people present at the exhibitions to see all new innovations and developments is the perfect representation of the contradiction this study is all about. The feeling of own control is really important and to take that away is not the solution. One respondent came with an interesting remark: "Perhaps privacy does mean the same anymore as everyone thinks to have. The meaning of the value can be interpreted in so many ways and everyone has another definition for this. I wonder if we actually know what we want and if we speak about the same thing." – response 6

New technological developments are needed when living in this innovating world. A lot has changed over the years but the definitions of human values seem to have stayed the same. Perhaps a new definition of privacy and other human values involved need to be redefined in order to avoid conflicts. This could increase the awareness of

what this society of the Netherlands actually desires and may create a positive ambiance in which we can live freely.

6 DISCUSSION

The design-for-debate approach aimed to use for this research is based on addressing the bigger audience. It takes time and practice to master this approach. The researcher had the first encounter during this study and more developing is needed to have a sufficient method mastered. In order to get the process going, the first iteration is addressing the subject in question but without the debate with the bigger audience. The second iteration attempted to engage with a larger public.

The qualitative data for both iterations are assessed globally. The data collected did not come from many participants. This is not yet sufficient enough to identify significant results. For future studies it would be advised to explore the subject further and have a more in depth analysis of the collected data. It would also be beneficial to include more quantitative data results in a next design iteration. When upscaling the research testing, it would be interesting to add this quantitative information as a statement for more extensive debates and have a discussion with participants on a more collective scale.

Some flaws in the practical elements of the artefact of the first iteration were detected in both the pilot and the follow-up test. It would have been better when these were resolved during the follow-up test for better results. The duration of the pilot test was in reality extended to five days. In combination with the practical programming flaw and the duration of the test, the credibility decreased. There was no real confrontation happening by the audience representatives and after one full work week the impact and thus effect of being watched was not as strong anymore. In a future study it would be beneficial to decrease the duration of the test in three or four days. Another interesting addition to this research could be to look into how long-term implementation would affect and influence the awareness of data collection and the concerns of violations of privacy.

The same core issue needed to be addressed in the first and second iteration. The effect the study of iteration 1 emerged partly by the duration of the test. This duration needed to be adapted to one afternoon where the same effects could appear. This adaption mixed the definition of personal and private data. This conflict already appeared by the first iteration but in this situation it appeared during the

demonstration. This led to a discussing where the researcher had a leading and guiding role that influenced the conversation. Another thing that was guiding the debate were the pictures used in the mirror frames. The expression the people on the pictures show have an impact on how the participants react. With the use of more neutral expressions or logos as in the first iteration, this could have a less guiding role in the debate.

7 CONCLUSION

The main reaction to the topic discussed in the first iteration is neutral to negative. It was perceived as a distracting factor that limited the freedom. There was no moment of confrontation or consequences. That is one reason the awareness of the research artefact faded and became more neutral. Another reason is that the participants got used to having the presence of having three mirrors in their working environment. In the end it was natural that they existed. The desire for being an individual makes own control and feeling of freedom necessary.

The audience that had overall the most negative impact for the participants was the commercial company because the intentions of the unknown party were not clear. The other audiences had a personal representor that makes it possible to defend oneself when one is held accountable. The ignorance of possible consequences make it difficult to trust an audience. And the reason why a person should be controlled is when the audience does not have faith and trust in another.

New technological developments are needed when living in this innovating world. A lot has changed over the years but the definitions of human values seem to have stayed the same. Perhaps a new definition of privacy and other human values involved need to be redefined in order to avoid conflicts. This could increase the awareness of what this society of the Netherlands actually desires and may create a positive ambiance in which we can live freely. for understanding my situation.

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