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The Citizens' Strain to See Through Transparency

Exploring Reciprocity As an Alternative in the Smart City of Amsterdam

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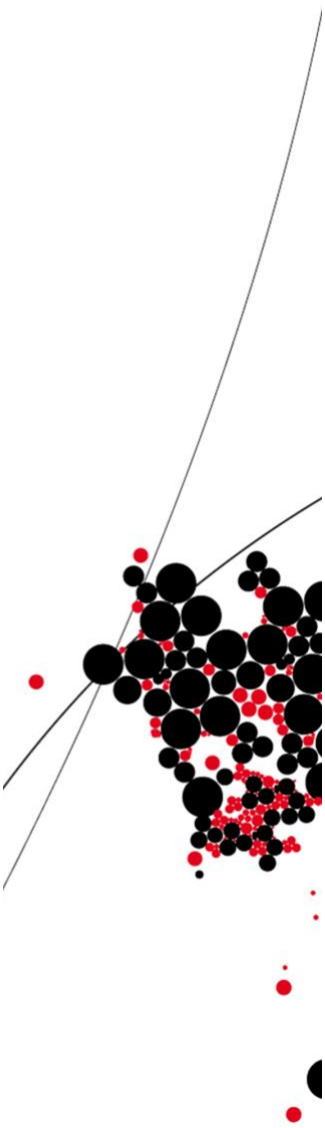

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"When data is a form of capital, then appropriating data from others is theft."

Jathan Sadowski [1]

[1] Coletta, C., Evans, L., Heaphy, L., Kitchin, R., & Sadowski, J. (2018). A Digital Deal For The Smart City: Participation, Protection, Progress [E-book]. In Creating Smart Cities (pp. 20–29). Taylor & Francis.

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Abstract

Urban life in Amsterdam has become increasingly digitized and datafied, which enables the municipality to provide tailor-made services to the citizens based on their data. Yet, citizens are often unaware of data collection processes, lacking knowledge of its execution and purpose. Transparency is frequently proposed and sought-after to 'solve' this problem. However, this orientation on transparency creates a smart city that offers information but disregards the act of justifying its governance practices towards its citizens. I will investigate reciprocity as an alternative to transparency. Reciprocal smart city governance incentivizes the Amsterdam municipality to explain and justify the benefit of their 'digital conduct' towards their citizens, which will stimulate more 'benevolent surveillance practices' in Amsterdam.

Keywords: Benevolent Surveillance, Data Justice, Reciprocity, Data Commons, Transparency, Smart City.

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1. Introduction

Urban life in Amsterdam, the Netherlands has become increasingly digitized and datafied to the extent that any attempt of withdrawing from the digital space would require giving up on urban life altogether: commuting, working, and personal relations. Most citizens of Amsterdam produce digital data through almost everything they do. The first thing they do in the morning is check social media, the news, and mail through their mobile phone that constantly emits information. Then, they travel to work or school using an electronic travel card (like the Dutch *OV-chipkaart*) in public transport, use a GPS-system while biking or various other digital-systems in their cars. The citizens of Amsterdam walk down the streets where the signals from phones or other devices are detected and processed by WIFI beacons and MAC address sensors[2], and their faces are recognized through CCTV (Richter et al., 2018). They use apps, in the likes of WhatsApp, Instagram, and Facebook to share our thoughts and pictures. They call each other through the antennas set up by the phone providers. They interact with the municipality of Amsterdam digitally by paying taxes and using city services. Throughout the day, they are continuously emitting digital data as they communicate and move around. The smart city captures and processes this data to form a detailed data picture of its citizens that enables them to provide tailor-made services for them. In this context, citizens are *produsers*, which entails they both *produce* the data and *use* the services that are based on their data (Coleman et al., 2009). This seems like a benevolent form of surveillance, where the citizen hands in a bit of privacy, which I define as the right of an entity to decide "when, how and to what extent information about them is communicated with others" (see Chapter 2.4 Group Privacy (Westin, 1968, p. 3)). In exchange for their privacy, the citizens receive services, just like other benevolent forms of state-based data collection, where data is given to receive services, such as welfare benefits. Yet, the current form of surveillance in the smart city of Amsterdam does not seem benevolent at all. Citizens are often not aware *that* and *what* data is taken from them. What our data-picture looks like and how it has been formed stays opaque to us. This means

[2] The MAC address is a unique number in your device (e.g., mobile phones, tablets, laptops) that allows you to connect to the Internet. In this way, your device is recognizable to other devices in your network, and data traffic between those devices is properly channelled.

that in our current form of smart city Amsterdam, those who take our data can benefit from it without returning anything to the citizens (Jameson et al., 2019). The digitized and datafied life in Amsterdam has enabled processes of extraction, where any form of data is taken. Ironically, the word *data* is borrowed from Latin where it once meant '*to give'.* Let us return to this original definition and whilst we are at it, respect the idea of *quid pro quo*[3].

1.1 Topic-related research

Smart cities have been extensively discussed by the media, scholars, corporates, and policy entities, resulting in a debate with a vast variety in perspectives and ideas (Coletta et al., 2018). The debate on smart cities can, with a bit of oversimplification, be divided into two 'sides': the group of "scientists, technologists and technocrats" working in the academic, governance or commercial field, with a specialisation in the beta-studies, such as Computer Science, Data Science and Civil Engineering (Coletta et al., 2018, p. 3). Typically, this group lacks sufficient critical reflection on how new developed technologies fit into society and what their wider consequences are. Instead, there is often a bigger focus on their expected and preferred effects, such as "improving efficiency, productivity, competitiveness, sustainability, resilience, safety, security, etc" (Coletta et al., 2018, p. 3).

On the other side are the critics, who often are linked to the social sciences and civil organizations. They critique smart city initiatives on topics such as "power, capital, equality, participation, citizenship, labour, surveillance and alternative forms of urbanism" (Coletta et al., 2018, p. 3). Generally speaking, the critics know what versions of the smart city are undesirable, however they often provide little constructive and pragmatic alternative visions of what a smart city ought to be. Dividing the current debate into two groups is a bit of an oversimplification, but it does illustrate its fragmentation and polarization. Therefore, I will try to avoid falling into one of the recurring arguments from either of the 'sides'. Instead, I try to bridge this gap by conducting interviews with experts from 'both sides' and by researching an alternative vision of the smart city that seeks to gain a fairer relationship between citizen and municipality.

[3] Translated from Latin to English reads; something for something.

The smart city of Amsterdam is chosen as the research subject because its aim and values concerning data collection processes are aligned with my own perspective of a benevolent mentality towards civil rights in the digital city. The college of mayor and alderman of Amsterdam is formed by a coalition of three progressive and leftist parties: Partij van de Arbeid (Labor Party), Groenlinks (Green Left) and D66 (stands for Democrats 66) (Gemeente Amsterdam, 2022b). This progressive character is identifiable in the governance of the smart city of Amsterdam. Generally, the municipality of Amsterdam recognizes the importance of citizen control over their own data and actively works on this in several European projects, like Decode (Ryan & Gregory, 2019). Next to that, Amsterdam is one of the first smart cities that has published an Algorithm Register, with the intention to increase transparency concerning data collection (Gemeente Amsterdam, 2022a). However, there are still many deficiencies in their governance that seem to be at odds with their moral principles, such as the ever-increasing surveillance practices in public spaces infringing on individual and group privacy, and the continuous opaqueness concerning the use and benefits of these practices. Therefore, the smart city of Amsterdam serves as an interesting case study to explore the limits of the current transparency discourse and to analyse the desirability and feasibility of reciprocity. The arguments that I will make in this thesis are thus based on the research on the specific case of Amsterdam. However, in section 5.3 Generalizability, I will go into more depth concerning the possibility of generalizing my findings.

1.2 State-of-the-Art

This section offers a quick look into the relevant scientific literature, to map out the current discourse on surveillance in smart cities. I will argue that the current discourse seems heavily oriented towards transparency, creating a 'transparency-obsession'. Yet, the state-of-the-art lacks studies that critically assess the success of transparency in the smart city and propose alternatives to transparency.

Before delving into the state-of-the-art on smart cities, it is necessary to define this concept. For this research, a smart city is defined as a marked-off urban geographical area, that uses data and algorithms to devise 'smarter' policies and implements and evaluates them more

efficiently (Cardullo et al., 2019). In 2021, the Dutch police published a report in response to a request under the freedom of information act regarding the number of cameras in the Netherlands. The police report stated that the municipality of Amsterdam has 29.622 public and private cameras in place (Politie Nederland, 2021). This report only includes cameras that have been registered by the police, so the 'real' number of cameras is likely higher. According to the Sensorenregister, an initiative from the municipality of Amsterdam that offers transparency on the use of sensors in the city, there are currently 1528 active sensors (Gemeente Amsterdam, 2022a). This means that there are a total of 31.150 registered cameras and sensors in Amsterdam that generate big amounts of data about their citizens.

Even though the debate on smart cities is rather fragmented and polarized, there are certain stock issues that are mentioned by 'both sides'. Stock issues entail the standard issues or points which are usually addressed during discussions or debates on a specific topic, in this case smart cities. The most significant stock issue is that of privacy. More specifically, the trade-off between privacy and services, which poses the question: how much privacy does a citizen want to give up in exchange for better services provided by their municipality? It seems citizens can either benefit from data analysis or retain data privacy, but not both (Trask, et al., 2020). In some cases, it even becomes uncertain whether citizens can retain data privacy at all due to the growing difficulty of withdrawing from the digital space. Nonetheless, both technocrats and techno critics are debating on the issue of privacy in smart cities. In the technocratic domain, smart cities are seen to tackle the issue of privacy by for instance enabling new forms of e-government that will improve the government's transparency, accountability, and participation through technology, which might increase an individuals' privacy, which according to Westin (1968) is defined as the right to decide "when, how and to what extent information about them is communicated with others" (Westin, 1968, p. 3). This can be done by making official documentation available to increase transparency during the process where decisions are made (Johannessen & Berntzen, 2018). Next to that, a recent wave of technocrats hold that the issue of privacy will be solved through the promise of smart citizens (Noveck, 2015). They argue that smart cities should use advanced technologies to be able to identify the expertise and skills of citizens to match this to the demand for it in government. In this way, citizens give more data

(e.g., information on their skills, expertise), but receive more transparency and participation in decision-making. In both cases, transparency seems to be the *panacea* for privacy issues in the smart city. Interestingly, when looking at the current debate regarding smart cities in the discourse of techno critics, often the same solution is formulated (Evans, 2018; Perng, 2018; Johannessen et al., 2018).

Since the onset of smart cities and its accompanying mass data collection, countless ethical frameworks and toolkits have been proposed that name transparency as a main tenet of a benevolent digital space (Johannessen & Berntzen, 2018). The smart city of Amsterdam is currently working with the framework provided by TADA, which is a Dutch movement that strives for a fair, inclusive, and transparent digital city. In 2017 they formed a group of professionals and citizens to tackle the most pressing issues in digital cities, which resulted in the TADA-manifest. In this manifest they have listed six principles for a responsible smart city: 1) Inclusive, 2) Controlled, 3) Human Dimension, 4) Legitimate and Monitored, 5) From Everyone – For Everyone, and lastly 6) Open and Transparent (TADA, 2022). According to the principle of Openness and Transparency, smart cities need to list what data is collected with what objective and outcomes. At present, these values have even been implemented in the Dutch coalition agreement. Similarly, in 2018 the Declaration of Cities for Digital Rights has been signed by New York, Barcelona and Amsterdam and more than 60 other cities (openresearch.Amsterdam, 2021). The declaration also formulates transparency as one of the evolving principles.

Across the disciplines, from Computer Science to the Social Sciences, between advocates and critics, one consensus seems to have been reached: Smart Cities need to be transparent (Evans, 2018; Perng, 2018; Johannessen et al., 2018). This small literature overview has shown that the present discussion on smart cities looks narrowly focused on the concept of transparency.

1.3 Limits of the current discourse and research gap

Although transparency has been of major importance for the establishment of a more responsible smart city, it seems that the condition has its limitations. For instance, full

transparency in smart cities can offer citizens so much data of various qualities and importance, that it leads to an overkill of information. This flooding of information leaves people overwhelmed, which in turn makes them "unable to distinguish useful, reliable, and high-quality information from useless and poor-quality information" (Mol, 2016, p. 1). Transparency thus, in this case, would lead to disinformation. Therefore, I argue we need to examine an alternative structure for smart cities that seeks to bypass the issues that transparency until now has not been able to resolve. In the recent debates on smart cities, little has been contributed that argues beyond transparency. To fill this scientific gap, I will research:

RQ: '*In what way can the smart city of Amsterdam stimulate benevolent surveillance beyond the transparency-orientation?*

The research question builds on the considerations about benevolent surveillance in the Smart City made so far and tries to look beyond the solution of transparency that is often proposed. Until now, the scientific field has produced little critical analyses of the poor results of transparency-based surveillance in the digital space. To fill up this scientific gap, I engage in a search for alternative forms of surveillance in smart cities through explorative and participatory research that goes beyond the concept of transparency.

Due to the current state of smart cities, where mass data extraction (without clear benefits for those monitored) has become the rule rather than the exception, there is a sensed urgency to find solutions that constitute a fairer relationship between citizen and municipality. This is especially important since the withdrawal from the digital space has become nearly impossible.

The first sub-question reads **Q1: '***What are the implications of the transparency-orientation for the smart city governance of Amsterdam?'*

The first question will be researched by including literature research and data from expert interviews. Through literature research, I seek to include the academic discourse on the status quo of the smart city, where transparency has been a main, sought-after tenet. Through the

participatory expert interviews, I seek to view the perspectives of experts on smart cities from different sectors (e.g., academic-, commercial-, public-, and NGO-sector).

The second sub-question reads **Q2**: *To what extent do experts identify reciprocity as a desirable and feasible enhancement of transparency in Amsterdam?*
The second question will be researched by including interviews with experts on smart cities. This question focuses on subjective narratives as a source for deriving local directions. The conversations will be stimulated by offering the concept of reciprocity, which has been discussed in the previous section, as a possible solution. The aim of this participatory sub-question is to discover what experts think of the desirability and feasibility of reciprocity in the smart city. What do they see as the limitations of reciprocity? Can they envisage examples of practical implementations of reciprocity?

1.4 Choice of Hermeneutic Research Methodology

In order to do my research, I will make use of the hermeneutic research methodology, which is an established method in the social sciences and humanities (van Leeuwen, 2019). Hermeneutics is a research methodology that emerged as a counterreaction to positivistic scientific methods, which rely heavy on finding solutions to practical situations by measuring (ibid.). In contrast, hermeneutics focuses on the interpretative aspects of the human experience and seeks to understand rather than to offer explanations or measurements of a phenomenon (Kinsella, 2006). Distinct from the post-positivist worldview where problems are expected to be solved through unbiased measurements of an objective reality, hermeneutics provides academics the 'tools' to research very complex phenomenon, often using in-depth interviews (van Leeuwen, 2019). The hermeneutics approach is especially useful in this thesis, because it lends itself to explore complex, various and perhaps contradicting perspectives, which holds for the smart city discussion.

1.5 Reflection

I will critically examine through theoretical and participatory research how current surveillance projects (based on transparency) in Amsterdam are failing to constitute a fair relationship between the citizen and municipality. I will engage in a philosophical discussion about the attainment of benevolent surveillance, which will be based on a literature study. Afterward, I will take a phenomenological turn and will research the interpretation of the smart city Amsterdam and the desirability of reciprocity during in-depth expert interviews. Here, the idea of benevolent surveillance and potential alternatives beyond the transparency-orientation will be brought up for discussion. Together, the answers to the sub-questions will amount to an argument that the smart city of Amsterdam can stimulate benevolent surveillance by going beyond the transparency-orientation and considering alternative approaches, such as reciprocity, instead.

2. Theoretical insights

2.1 Smart cities today and in the past

The smart city is not something new. Already in the 1960s, experts tried to guide urban restorations with the use of computers systems. These computer systems were developed based on the idea of cybernetics, which is concerned with communication and control of complex systems (Goodspeed, 2014). These computer systems were expected to help with improving American city life by analysing problems such as crime and bad housing. Thus, the cybernetic city can be seen as an early version of the smart city. However, the past two decades, an explosive amount of communication technologies has been marketed and developed to enhance the efficiency and human experience of civic life. Especially, with the arrival of the Internet in 1993, when the technology was opened to corporations and individuals, a big shift occurred in the smartness of urban life. All over the world, governments and companies proposed opportunities to gain access to the internet (Powell, 2021). The incentive for many agents who pursued this was the promise of internet-based democratisation of civic action. The idea of entire cities having access to the internet kicked off imaginaries of cities where all inhabitants could equally participate in local decision-making and strengthened

ties between people through the benefit of enhanced connectivity (Powell, 2021). Yet, at the same time scholars warned that this kind of promise assumed that citizens were equally capable of making use of these technologies, a critique that is still very relevant. Simultaneously, these new ways of communication quickly got commodified by corporations such as Cisco, a wireless radio equipment builder, and Microsoft, who developed the popular web browser Internet Explorer. The exercise of civic participation due to enhanced connectivity was now replaced by a commodification of citizens' access to technology that enabled their communication (Powell, 2021). This commodification of communication was conceptualised as 'consumer citizenship' (ibid.). So, the benefit of expanded access to the internet started off as a promise of increased democratic participation, but swiftly changed to access to goods and services, where citizen connectivity became commodified.

In the past ten years, a shift occurred in the smart city discourse. The narrative of the communicative city enabling democratic participation quickly altered to an information society with pervasive connectivity, where governments and corporations use data from the city and inhabitants to increase efficiency (Powell, 2021). The goal is no longer to connect people with each other, instead, connectivity is 'forced' upon people to enable data collection using smart technologies like CCTV, remote sensors, Wi-Fi beacons, etc. In this new smart city discourse, citizens are perceived as consumers who can be nudged to change their behaviour based on predictions generated from data they produce. In the past decade it seems to have become a comfortable trade-off to give up part of one's privacy in exchange for services. In the words of van Dijck (2014), it seems data has "become a regular currency for citizens to pay for their communication services and security" (van Dijck, 2014, p. 197). But how can we explain this tolerance for mass data collection? Partly, by the gradual normalisation of datafication as a new 'normal reality' in science and society (van Dijck, 2014).

2.2 Datafication

Datafication is the process where social action is transformed into quantified data, which enables tracking of (groups of) citizens and prediction of their behaviour or actions (van Dijck, 2014). Business and governments are digging into the growing amounts of data collected through smart technologies implemented in the cities. Next to the smart technologies in the

cities, such as CCTV and sensors, smartphone apps and sharing economy platforms (such as the popular individual transport sharing platforms ShareNow, Lime and SIXT) produce vast quantities of real-time data (Kitchin, 2016). All this data at hand that capturing people's activities and whereabouts, makes it irresistible for government agencies to examine it using data analytics (ibid.). The consequence of this increasing availability of data, is that urban decisions are not 'data-informed' anymore, which means that data is used as a check on the decision made from human rationale. Instead, these decisions are slowly replaced by a 'data-driven' mentality, where urban choices are largely guided by data, decreasing the importance of human rationale (Kitchin, 2016). This results in a shift towards a more positivist approach to how cities and citizens are perceived and governed, for instance in the domains of transport, environment lighting, waste management, etc. The approach assumes a realist epistemology, holding that what is known about a phenomenon exists independently of one's mind, neglecting phenomenological influences. This epistemic realism supposes that reality can be objectively "measured, tracked, statistically analysed, modelled, and visualized" to present the world as it 'really' is (Kitchin, 2016, p. 45). Applying this approach to urbanism, it is reflected in smart cities as city data is presented in neutral, value-free, and objective ways and understood as the truth about what is being measured. This leads to the mentality that cities can be governed in a data-driven manner, where objective, truthful solutions can solve issues that exist independently of one's mind (Kitchin, 2016). This positivistic approach of urbanism has overlooked the subjective and interpretative aspects of human life and the influence of "politics, ideology, social structures, capital, and culture" in forming urban life (Kitchin, 2016, p. 46). Consequently, this approach neglects the complexity, messiness, and networks full of contradictions of urbanism that is not easily essentialized in data points. Instead, this messiness of human urban life requires governance that is directed at a "citizen-centred deliberative democracy", rather than the current existing "technocratic forms of governance" (Kitchin, 2016, p. 46). Therefore data-driven approaches to cities reinforce limiting understandings of how cities work, but still have become a legitimate way to access, monitor and understand people's behaviour in the city (van Dijck, 2014).

2.3 Surveillance

The increased datafication of smart cities, grounded in positivist and realist epistemology, has also made it more convenient to keep an eye on citizens**.** The pervasiveness of digitally mediated actions, such as using public transport with a personal public transport chipcard, and surveillance via smart technologies in the city, makes it impossible to live without constantly leaving digital traces (Kitchin, 2016). These digital traces come in handy for governments to, monitor, predict and govern based on the data. This mode of surveillance that is enabled by massive datasets is called "dataveillance" (Kitchin, 2016, p. 47). Consequently, this poses ethical questions for the privacy and autonomy of citizens in the smart city. The consequence of this mode of surveillance is that individuals lose their anonymity and are increasingly becoming the victim of profiling and social sorting, which can have very harmful outcomes. For example, Kitchin (2016) illustrates how tracking data can reveal that an individual often goes to gay bars, which can indicate the person might be gay. This is personal and (unfortunately) sensitive information that could lead to personal harm if, via targeted advertisements, the information was sent to the person's family home (Kitchin, 2016). Similarly, the tracking of people could result in the inference of political, social, and/or religious affiliations, which could have harmful implications once revealed to others, for instance for refugees in societies that share an anti-immigration sentiment. This example shows how the process of data aggregation poses a threat to an individual's privacy, but what exactly does privacy mean?

Privacy has been notoriously difficult to define. Definitions of privacy range from privacy as property (Thomson, 1975), to privacy as a "right to have a measure of knowledge and control over what information is made public about oneself" (Taylor et al., 2017, p. 57). Privacy, by any definition, is indispensable to a healthy democracy. To be able to act without severe limitations due to surveillance and judgment of others has been fundamental for the development of opposition to major societal issues. For example, the American Civil War, the Arab Spring movements, and current protests within Russia against the invasion of Ukraine would not have been possible if their developments had been known by authorities. "Privacy has been a safeguard against state knowledge becoming too complete, and with-it power becoming too absolute, making privacy one of the fundamentals of modern democracy for individuals and groups" (Taylor et al, 2017, p. 58). Throughout history, people have needed spheres of privacy,

to allow them to produce counter-narratives, as protection against potential maleficent powers of the state and society. Despite the difficulty of reaching a fully satisfying definition of privacy, I will continue with the definition of privacy as a right of an entity to decide "when, how and to what extent information about them is communicated with others" (Westin, 1968, p.3). This approach is chosen, as it is most suitable to the discussion of Big Data, where data is collected, analysed, and shared, often without the subject's knowledge.

However, the concept of privacy so far has predominantly been analysed from an individual perspective, where discussion points are the concept of anonymization, of protection of individual identity and of safeguarding personal information (Taylor et al, 2017). However, ironically, data analytics are predominantly directed at the group level, where the kind of actions and interventions which the data can facilitate lie beyond the level of an individual. This is exactly why data has become so valuable because it enables the construction of a broad view, to strive towards the 'universal', and as mentioned earlier, 'the objective truth'. Thus, the gaze of smart technologies is often not directed to an individual, but on clustered groups of people instead (Taylor et al, 2017).

2.4 Group Privacy

When the perspective on data analytics shifts from an individual to a group focus, this implies that the conception of privacy will also need to be adjusted or extended (Taylor et al., 2017). The current paradigm focuses mainly on individual interest and disadvantage. The protection of privacy is seen as an individual interest to protect one's "autonomy, human dignity, personal freedom or interests related to personal development and identity" (Taylor et al., 2017, p. 14). Therefore, the assessment whether the collection and processing of certain data is maleficent or benevolent is only on the level of the individual subject, even though the data analytics are usually carried out at the group level. However, policies and decisions are often made based on the results of the data analytics. Therefore, it seems only more fitting to adjust the normativity of data analytics to a group level, where the focus lies on whether not only individuals, but also groups flourish, can act autonomously and are treated with dignity Taylor et al., 2017).

Just as the current paradigm stems from human capacities from an individualistic perspective (e.g., an individuals' autonomy or dignity of a human being, etc.), the same logic

applies when discussing personal data. For instance, informed consent entails that "personal data may in principle only be gathered, analysed, and used if the subject has consented to it […]" (Taylor et al., 2017, p. 15). It poses the question if the big data era still permits the notion of individual control because due to the massive size of databases, knowing which data points include ones own data has become impossible (Taylor et al., 2017). This individual perspective towards data seems very limiting in a technological landscape where big data plays out on the collective level (ibid.). Therefore, Taylor et al. (2017) propose the idea of group privacy.

When discussing group privacy, two questions need to be asked: what is privacy, and what defines a group? First, I will adhere to the previous given definition of privacy, both as applied to individuals and as applied to groups. This definition holds that privacy is a form of human or group dignity. In this framing, privacy is "the claim of individuals, groups, or institutions to determine for themselves when, how, and to what extent information about them is communicated to others" (Westin, 1968, p. 3). Second, groups are usually dynamic entities that are constructed on the conditions that they are fluid and vary in size, composition, and nature. Yet, to ascribe privacy to a group that has no clear or fixed ontology seems impossible. A better alternative is suggested by Taylor et al. (Taylor et al., 2017), which is that a group is determined by the digital technology by clustering and typification, based on the selection of some properties rather than others, such as 'African-American' instead of 'Latinx'. This means that the group in group privacy is formed through digital technologies, big data, strategies, and policies, and was non-existent before the mediation of the technology. But the formation of groups is not always that easy to explain. With big data analysis, individual information is compiled in large data sets, after which the individual information is grouped together based on common traits or practices, which often stay opaque to us. Common traits in these large datasets could range from variables that indicate social, religious, or ethnic groups, but could also be the speed of walking, the number of times an individual's UUID[4] codes have matched with those of other individuals, etc. With the arrival of a digitised society, groups are

[4] Universally Unique Identifier (UUID) is a format to create numerical labels, that are truly unique. The chance that an UUID will match another is practically impossible. Therefore, UUID's are often used to identify something or someone, for instance in a database. In the example mentioned in the text, the UUID code is used to 'anonymously' identify a citizen.

no longer defined “by mere human perception, but, for example, with the use of algorithms” (Taylor et al, 2017, p. 54). In a new digitised era, that which defines a group, has changed, which is why it is important to rethink the potential risks and issues related to this change. For instance, the privacy related difficulties that emerge from the new status quo concern group profiling, scoring solutions and predictive policing applications (Mantelero, 2016).

An example of a group privacy issue is the predictive policing application in the smart city of Amsterdam, called the Top400 program, which calculates the risk that children and young adults will become crime suspects. The Top400 group is defined with the use of algorithms, based on variables such as neighbourhood, income, criminal family members, etc. The children and young adults who are listed in the first 400 entries, based on their risk scores, are subjected to special treatment where they may receive extra surveillance from the authorities, such as the police, municipal employees, and child protection services (Amnesty International, 2020). If the ‘selected’ people have not been a suspect of a crime after a period of two years, they will be removed from the list. Another example is the practice of price discrimination. This entails the use of variables concerning age, habits, or wealth to decide which price the customer will see for a certain product (Mantelero, 2016). In this case, groups are algorithmically formed based on the variables, and are shown a higher or lower price than other groups. None of the individuals are aware of the existence of other group members and/or their commonalities (ibid.).

These privacy issues that arise from the morphing of groups, based on algorithmic selection, are different from the issues related to individual privacy. Instead of privacy related issues to facts or information of a specific person, group privacy concerns clusters of people who have, without knowing it, been grouped based on their common characteristics, such as lifestyle, online and offline behaviour (Taylor et al., 2017). The data-driven decisions over these clusters then indirectly affect the members, in the cases of the Top400 program or the price discrimination, as previously mentioned. It seems that the individualistic perspective has serious limitations in the era of big data (Mantelero, 2016). Thus, in the context of mass data collection and processing, data protection and privacy should not concern only individuals, but also clusters of people who are at risk of discriminatory and/or invasive forms of data

collection, analytics and governance. It is important to understand the implications of this extension from individual privacy to group privacy, in order to realise a full understanding of the problems resulting from current surveillance practices. This understanding will also enable better remedies against the issues resulting from today's mass data analytics employed in smart cities.

2.5 Transparency

With all ethical problems and difficulties that smart cities may bring, it seems transparency has become the sought-after goal in the current academic surveillance discourse, to make the urban space ethical. In the Merriam-Webster dictionary, transparency or transparent is defined as "easily detected", "readily understood" or "characterized by visibility or accessibility of information" (Merriam-Webster Dictionary, 2022). Mol (2016) describes it as a key component to make "information relating to economic and state powers available to less powerful representatives of civil society, and as such it is believed to contribute to democracy and more equal power relations (Mol, 2016, p. 1)". Transparency emerged as a bottom-up goal, that was developed by civil society to legitimize economic and state power affairs (ibid.). It is linked to the normative right to know (Florini, 2007), which ties into 'our' definition of privacy, and has been implemented in many acts and legislations, becoming a truly institutionalised aim. It has become a vital tenet in seemingly holding the state in check by the less powerful. In general, it is argued that more transparency enhances democracy and enables a society where power is distributed more evenly (Mol, 2016).

The institutionalisation of transparency is also visible in the smart city of Amsterdam. The city lists transparency as one of the core values for responsible and sensible development and innovation. Amsterdam currently works with the TADA framework, which is a Dutch movement that strives for a fair, inclusive and transparent smart city. This framework lists six principles for a responsible smart city, including transparency (TADA, 2022). In this framework, transparency is defined as listing what data is collected with what objective and outcomes. Similarly, the Cities Coalition for Digital Rights includes the value of transparency as well. Here, transparency is formulated as the requirement that everyone should be able to access "understandable and accurate information about the technological, algorithmic, and artificial

intelligence systems" used in the smart cities (Cities for Digital Rights, 2022, Our Principles & Declaration section, para. 4). It seems transparency is defined as a process or action that is 'understandable' (Cities Coalition for Digital Rights, 2022), 'open' (Evans, 2018) or 'obvious' (Cammers-Goodwin & van Stralen, 2021). By offering this understandability, openness and obviousness, theorists and governance officials have claimed to protect privacy and create fair and ethical smart cities. By offering citizens information, they are enabled the basic mechanism in privacy protection which is informed consent. In the following section I will argue that this concept is limited, especially in public spaces.

2.6 Informed Consent

To diminish the chances of privacy threats, the idea of informed consent is often proposed. This idea requires those who collect data to 'give notice' to their subjects, which gives the subjects an opportunity to choose whether to participate, thus to 'give consent' (Barocus & Nissenbaum, 2009). It is often seen as a form of privacy protection, which stems from the belief that it respects individual privacy, which is explained in this thesis as the right of individuals or groups to decide "when, how and to what extent information about them is communicated with others" (Westin, 1968, p. 3). Yet, this idea is highly inadequate to address properly the particular threats that stem from surveillance in smart cities. The argument for this is two-fold and based on the article 'On Notice: The Trouble with Notice and Consent' by Barocus and Nissenbaum (2009). The first critique against informed consent is targeted on the near impossibility to opt-out in the smart city when you do not consent to the practice of surveillance (Barocus & Nissenbaum, 2009). Thus, in the smart city the idea of consent is merely an illusion. The second critique holds that achieving adequate informed notice is difficult, due to complex and opaque information flows (ibid.).

Firstly, the idea of consent means that an actor could opt-out or opt-in, based on their received information, thus it is voluntary (Barocus & Nissenbaum, 2009). For example, an internet user could be asked to give permission for user details to be saved by a website, this query or pop-up often outlines the use and aim of the saved data. The internet user in this case is notified of the content of the 'deal' and has the choice to give consent, thus to opt-in or opt-out. This approach, in theory, respects an actor's privacy, where they can decide when, how

and to what extent information concerning them is shared with others (ibid.). However, in a public space, such as in the smart city, it is a lot more difficult (read as: impossible) to ask for consent every time a citizen is captured by a CCTV-camera. Next to that, most data is stored in huge datasets, compiling, and forming clusters of data points, which are not targeted at the individual anymore (Barocus & Nissenbaum, 2009). Therefore, it becomes increasingly difficult to ask for consent to spread and use an individuals' information. Theoretically speaking, a citizen could opt-out of a deal which they do not agree with, but this becomes impossible in the case of a smart city, where any attempt of withdrawing from the digital public space would require giving up on urban life altogether: refraining from travelling, working, and maintaining personal relations.

Secondly, the notice that actors (could) receive is in most cases not sufficient for meaningful understanding. Complexity of information often constitutes a challenge for achieving meaningful notice (Barocus & Nissenbaum, 2009). However, there are exemptions, for example, patients who are about to undergo surgery sign consent forms, which are considered acceptable and legitimate, even though no one really assumes that the patient fully understands how the surgery exactly will be performed or has a full picture of possible negative side effects (ibid.). Yet, informed consent about surveillance in smart cities is distinct from surgery in the following way. If a person were to give enough time and education, they could in principle fully understand what they were consenting to. In contrast to the collection of Big Data in the city, there is a degree to which the tracking, analysis and use of data is not only difficult to understand, but also unknowable (ibid.). There is a potential for an unending chain of actors who receive and use the data. Next to that, there is often little knowledge of how automated systems make use of data. In the current mode, citizens literally cannot know what they are consenting to.

2.7 Reciprocity as an alternative to informed consent

Cities ought to be morally obliged to make sure that the use of smart technologies is in fact beneficial for the public at large, instead of narrowly benefitting public administrations, corporations, or knowledge institutions (Rijshouwer et al., 2021).

Even though transparency is of major importance to attain this goal of a fairer and more responsible smart city, it seems its application is limited. This has been illustrated by the constraints of informed consent, where it is nearly impossible for citizens to receive transparent information, and they on top of that don't have the opportunity to opt-out. Especially with the increasing use of smart technology implementations in smart cities, there is a sensed urgency to seek an alternative approach that constitutes a fairer relationship between citizens and municipality. During the research, I seek an approach that uses transparency but goes beyond this principle and requires a form of reciprocality where both the monitoring actor and the actor being monitored benefit equally from the collected data. Yet, in the context of Big Data the concept of reciprocity has been discussed very little. Therefore, I will examine literature from other fields, such as anthropology, where more information is available about equal distributions of benefits resulting from data collection. The field of anthropology has long incorporated the practice of reciprocity in their research. In the professional code of the American Anthropological Association (1998), there is an explicit statement which underscores that anthropologist "should recognize their debt to the societies in which they work and their obligation to reciprocate with people studied in appropriate ways" (American Anthropological Association, 1998, Section IIIA, point 6). There is a striking similarity between anthropological research and the structure of smart cities today, which is the lack of informed consent. As illustrated earlier, in smart cities there is no adequate way to give notice to citizens about data collection, and there is no option to not consent to data collection. Similarly, in anthropological research, the 'subjects' also experience a lack of informed consent, because it is not feasible to hand out consent forms to every person they will meet in the field, even though (unconsciously) information is gathered about them (American Anthropological Association, 1998). Next to that, anthropologists use an inductive research style where they, in most cases, will first carry out fieldwork and after the research is concluded, will create theories that help explain the observed cases (ibid.). Consequently, the anthropologist is unable to give adequate notice of how the subject's data will be used and with what aim.

Thus, reciprocity could be an answer to the problem of lack of informed consent. Then what does the concept really entail?

Reciprocity describes the respectful nature of benevolent relationships and exchanges on individual and communal level that stimulate egalitarian relationships. It is defined as a form of “exchange in which there is an expectation of return that takes place between people who have a social bond, which is strengthened by the exchange” (Maiter et al., 2008, p. 307). The application of reciprocity in the smart city could take place by offering useful information about the use, process and analytics of the data collection and its benefits to the community that has been monitored. The reciprocal approach goes beyond transparency since the ‘data collector’ is required to provide clarity over the process of data collection and its outcomes (transparency principle), but they are also required to actively show how the monitored community benefits from the data collection (reciprocity-principle).

2.8 Conclusion

This chapter has offered a brief overview of the history of smart cities, where it became apparent that over time societies became increasingly datafied. This datafication led to an increase in surveillance in urban space, which is causing serious threats to actors' privacy, both on individual and group level. Frequently, transparency is considered to be the *panacea* for privacy protection. Whenever people are informed over the surveillance strategies, people are deemed to make an informed decision and have the possibility to opt-in or opt-out. Yet, in this chapter I argued that the idea of informed consent is very limited, especially in the context of a smart city. Therefore, this chapter showed that it is necessary to look for an alternative to the now popular informed consent principle. By looking at the similarities between the field of Big Data in Smart Cities and the research ethics of anthropology, a discovery was made that the principle of reciprocity could function as a good alternative to informed consent. In the following sections of this thesis, research will be conducted in how this new approach is best implemented.

3. Methods

3.1 Introduction

This chapter will start with a short outline of the case study, the smart city of Amsterdam. I adhere to a hermeneutic research methodology, which has been touched upon in the introductory chapter. This research method enables researchers to explore and interpret the complexities of human experiences. In the following, I will describe the method of data collection, detailing the choice and process of the semi-structured expert interviews. After that, I will reflect on the logic and formulation of the interview questions. Here, I will touch upon the strengths and weaknesses of the research, offering reflection and justification of the research design. The chapter will present and explain the methodology that allows the investigation of benevolent forms of surveillance in the smart city of Amsterdam that go beyond the *panacea* of transparency.

3.2 Case Description

To conduct the research on surveillance in smart cities, I have chosen the case of Smart City Amsterdam. The city is one of the front runners in European smart city development, initiating several technological and innovative solutions for societal problems. The Amsterdam Smart City was established in 2009 as an initiative between the Amsterdam municipality, the Amsterdam Economic Board and (private) companies, such as KPN, a TV, internet, and television provider, and Alliander, an utility company (Putra & van der Knaap, 2018). Ever since, the smart city has assisted in 80+ smart city projects, collaborated with numerous tech stakeholders, received Europe's Capital of Innovation prize in 2016 and became third in the Global Innovation Index 2017 (Ryan & Gregory, 2019).

But far before the official establishment of the smart city Amsterdam in 2009, the municipality was known for the Dutch Freenet *De Digitale Stad* (The Digital City), which was established in 1994 (Boumans, 2022). *De Digitale Stad* was an initiative that aimed for an accessible internet with access for everyone. Through a modem, citizens could receive a free account including e-mail, access to the internet and space for a homepage (ibid.). Even though the project was only meant to last for 10 weeks, it soon became extremely popular, and

continuation was inevitable. Around the 2000's, the *Digitale Stad* was bought by a web hosting company after which it disappeared (ibid.). Yet, with the value of accessibility and inclusivity in the roots of the smart city of Amsterdam, it was born to be different from most other cities.

In the past five years, many developments took place in the municipality of Amsterdam concerning data collection in the public space. One example is the implementation of an 'algorithm register'. This register provides a list of data-driven systems that are used in the public space by the municipality and offers 'understandable' information about these systems with the intention to inform citizens (Ada Lovelace Institute, 2021). The registers are built and published with the intention to enable and empower citizens to investigate how these data systems may affect them (ibid.). However, up until now the algorithm register is still in development. Therefore, I decided to conduct interviews with experts in the field of data collection in the smart city of Amsterdam to get a better and deeper understanding of transparency and reciprocity in the public space.

3.3 Methods of Data Collection

In the following section, I will outline which methods of data collection have been used to answer this thesis' research question. As mentioned earlier, I use a hermeneutic research approach, where data is collected through literature reviews and semi-structured interviews.

In hermeneutic research, there are various methods to apply, such as interviews, discussion of photos or videos and focus group discussions (van Leeuwen, 2019). In this thesis, I will make use of semi-structured interviews with experts in the field of ethics of smart cities. Researchers often use a set of questions that were thought of ahead of the semi-structured interview (Bryman, 2008). However, the researcher leaves a lot of space for the respondent to dictate how they would like to reply. Characteristic of these types of interviews is that questions may be asked in a different order than it was thought of before, because it is dependent on the answers of the interviewee. Next to that, this type of interview enables the researcher to ask questions that were not included in the guide beforehand. By doing so, the interview will focus on the subject's opinion and experiences, in order to gain rich and comprehensive data from the subject (Bryman, 2008). I have chosen semi-structured interviews because it offers certainty that all aspects I wanted to investigate are touched upon due to the

prepared questions ahead of the interview (Bryman, 2008). Next to that, this kind of interview provides the subject freedom and leeway to voice their opinions in their own manner (instead of ticking boxes) and to bring up topics and issues that they themselves find relevant for the discussion (Bryman, 2008). The semi-structured interviews gain in-depth information on the way the respondent interprets their day-to-day experiences (Fuster Guillen, 2019). However, there are also a few negative characteristics of semi-structured interviews. Due to the open-ended nature of semi-structured interview questions, it is easier to accidentally ask steering questions. This is the type of question that stimulates interviewees to answer in a specific manner, based on the way the questions are posed. Often, leading questions contain information that the researcher wants to be confirmed rather than searching for an unbiased answer to that question. Next to that, the interviewee may also answer the researchers' questions in a way they think is desirable or moral, leading to a social desirability bias (Lewis-Beck, 2004). Both issues can be mitigated by the construction of non-leading survey questions and by ensuring the interviewee feels at ease and comfortable sharing their views. In section 3.4, I will go into more detail about challenges that came up during the interviews.

For the purpose of this thesis, twelve experts on smart cities were interviewed, all of whom were approached through different channels. The choice to interview experts was made based on two factors: feasibility and pre-existing knowledge. Conducting expert interviews instead of citizens was based on the idea of feasibility. At the beginning stage of this thesis, the intention was to conduct interviews with Amsterdam citizens. However, interviewing citizens requires a more detailed and lengthier examination from the Ethics Committee, which I, unfortunately, did not have sufficient time for. Next to that, finding 'citizen respondents' that are willing to make time for an interview is notoriously hard, and I was warned by my supervisors that this would be a tedious and likely unsuccessful project. In contrast, finding expert respondents is a much easier process since they can be found through their (published) work on smart cities. Next to that, receiving confirmation from the Ethics Board to interview experts was a quick process. On top of that, conducting interviews with citizens, who are often 'laymen' on the specific topic of smart cities, can also be difficult because a certain amount of knowledge concerning smart cities is required to have a fruitful conversation. The process of

sharing knowledge about my research topic with 'layman' would inevitably be biased by my own perspectives and biases concerning smart cities, transparency and reciprocity. This could lead to a biased presentation of information to layman, which would highly color the conversation. Smart city experts, in contrast to layman, have already formulated their opinion, or at least have obtained sufficient information on smart cities without my influence. Therefore, ultimately, in order to have useful interviews with many varying perspectives, I decided to interview smart city experts instead of citizens.

The twelve experts were approached in several different ways (see Table 1.)

Connection	**Format of Reaching Out**	**Number of Respondents**
Through their academic work on smart cities	Email	2
After a collaboration on a smart city project	In real-life and via email	4
Through the snowballing technique where one researcher tipped another colleague	Email	2
Through consultancy work on smart cities	Email	2
Through political work on smart cities	Email	0
Through non-profit work on smart cities.	Phone and email	1

Table 1: Overview Ways of Reaching Out to Respondents

During the selection of respondents, I tried to invite people who all share 'interest' in smart cities, but from different backgrounds, to establish an 'as-broad-as-possible' perspective. This resulted in a group of respondents with a background in the academic, governance, NGO or

corporate field. The first respondents I reached out to, were found on the basis of their academic work on smart cities. During the literature research for this thesis on smart cities and ethical data collection, I came across many interesting authors of whom I had read multiple articles. Two of these authors that highly resonated with me are Sadowski and Taylor. I perceive their writings on smart cities as critical, original, and somewhat experimental regarding the use of new concepts (e.g., the examination of 'group privacy' by Taylor). Therefore, I wanted to hear and incorporate their vision on reciprocal data collection, which is a somewhat 'experimental' and 'new' approach. To my happy surprise, both respondents were willing to make time for an interview. Secondly, through my supervisor and second reader, I was able to participate in a workshop organised by the AMS Institute, which focused on responsible smart city implementations. After our second meeting, I approached three of the attendants for an interview, who all agreed. One of these respondents had an academic background, one worked for the municipality of Amsterdam in collaboration with the AMS Institute, and the last respondent worked for the AMS Institute. Thirdly, through the snowballing technique I have received two names of respondents who were both willing to participate. The snowballing technique means that one person, in this case a respondent and my thesis supervisor, advised me to talk to someone they know. This is a good technique because the advised respondents are often willing to do an interview if their name was mentioned by someone they know. However, it also enhances the idea of a social bubble, where people recommend talking to like-minded people with similar perspectives and views. This can potentially be harmful for the research due to a lack of diverse perspectives. However, during the selection of respondents a lot of attention has been placed on the diversity in perspectives, which is why I see the snowball technique for two respondents as permissible in my research. The last three ways to find respondents were through 'random' Googling combined with pre-knowledge. For instance, before starting this research I was aware of multiple commercial consultancy offices, political figures and non-profit companies that have departments specifically focused on smart cities. In light of the aim for a diverse group of respondents, I decided to invite commercial parties and non-profit organisations for an interview. To my surprise, the commercial parties I reached out to were very willing to do an interview, whilst the non-profit organisations and political figures I

approached were often too busy. I contacted over 10 non-profit organisations, yet only one organisation was willing to do an interview. Next to that I reached out to four political figures, but no one was willing to do an interview. The organisations that were not willing to conduct an interview, often blamed this on a lack of time. A list of the final respondents who I have conducted an expert interview with, can be found in the Appendix.

The initial aim was to solely invite experts on the smart city of Amsterdam. Eventually, the selection of respondents turned out to be a mix of experts on Amsterdam specifically, and experts on smart cities on a more general scope. During the interviews, I tried to steer the conversation to the case study of Amsterdam but was not always successful. Therefore, the analysis of the interviews range between statements specific to the case study of Amsterdam and more general statements concerning smart cities. However, at large, the more general statements on smart cities are very applicable to the case of Amsterdam, which is why I commit to this research's localization.

3.3.2 Interviews

In this section, I will give a brief outline of the structure of the interviews, after which I will provide a section that details the course of the interviews.

For the interviews, an interview guide was constructed in which the general process of an interview was detailed. The interview guide can be found in the Appendix. The interviews started with thanking the participant for making the time to do an interview. After that, I introduced myself (e.g., information on where I lived, which studies I was doing, etc.). Then a small summary of my research topic was given, and the concept of reciprocity was outlined (see Appendix). After this short summary, the participant was asked whether they gave consent to record the interview for the purpose of transcribing. The small chat before the interview often created a comfortable atmosphere that helped to build rapport with the subject. However, the first issue that was experienced during the interviews was the possibility of bias. Because the interviews were semi-structured, it gave a lot of room for leading questions, as mentioned in the previous section (Methods of Data Collection). Next to that, my thesis summary that was offered in the beginning of the conversation often set the tone for the interview, where it signalled that my research is critical on data collection in public spaces. Even though I did not

try to interweave my perspective in the questions, it was rather evident what my stance was. Therefore, it could have created an environment where the participant may have felt the need to also be critical on data collection in the public space. However, the participants were all 'experts' on the topic of data collection, thus it can be assumed they maintained their own opinions, despite a slightly biased introduction to the interview.

Next to that, all interviews were conducted online, through the platform Zoom. Even though it was not required due to COVID-19, the participants often proposed this themselves. Lastly, this research is conducted according to the rules and regulations of the University of Twente. Before commencing this research, the ethics committee of the University of Twente approved that the proposal was in compliance with ethical guidelines, the GDPR and the Dutch law. Ten of the eleven respondents have given consent to the use of their full name in this thesis, either during the start of the interview, or through a confirmation by email after the interview. The emails were sent to receive confirmation concerning the selected quotes from the interviews. Next to that, the first four interviews were conducted under the assumption that the results should be kept anonymous. However, one respondent argued this conflicted with the idea of crediting and referencing a source, because the Analysis chapter entails a discussion of the respondents' ideas after all. Therefore, the respondents who conducted the interview under the assumption of anonymity were contacted and asked for consent to de-anonymize their input. Some interviews were conducted in Dutch and therefore have been translated into English. The transcriptions of these interviews have been translated with Deepl.org, and the selected quotes have been compared to the original language and were amended if necessary. As a final step, the quotes that are used in this thesis were sent to the respondents for confirmation of use.

3.4 Method of Data Analysis

To formulate interview questions, I identified four categories that apply to my research: general information and work setting, smart cities and citizens, transparency and informed consent and reciprocity. Three of the eleven interviewed experts had little to no knowledge about the specific case of the smart city of Amsterdam. Therefore I have formulated the interview

questions broader addressing a more general sense of smart cities, instead of the specific case of Amsterdam.

General Information and Work setting

Before the initiation of a conversation concerning the topics of transparency and reciprocity in the smart city, I wanted to establish an understanding of the participants' context, which forms their way of thinking and reflection. This context might be influenced by their education (e.g., background in social sciences or computer sciences). Next to that, it is of use to know what sparked their interest in data collection in public spaces and what their previous and current position of employment is. Altogether, this will likely form somewhat of a context that puts the respondents reasoning in some perspective. Therefore, the question ought to stimulate the participant to give a short introduction of themselves and talk about what they find particularly interesting about data collection in the public space. Hence, the formulation of the first question is:

Q1. Can you introduce yourself and explain how you became interested in smart cities?

Smart Cities and Citizens

The second category informs the question that tries to find out how the participant considers the status of citizens and citizen participation in the process of data collection in the public space of the smart city Amsterdam. This serves to find out what the participant thinks about citizen participation in general, whether it is beneficial and useful or instead unrealistic and unnecessary. This brings a first opening for discussion. Subsequently, depending on how the participant sees citizen participation, it stimulates a discussion on how to enhance or decrease citizen participation. Finally, the second interview question was formulated as: *Q2. What do you think of the current level of citizen participation regarding big data in smart cities?* Since this question is rather broad, which is intentional to stimulate the participant to formulate their definition of citizen participation and then their judgement on it, it enables follow-up questions and discussion.

Transparency and Informed Consent

This category aims to involve the participant in a conversation concerning transparency, which is often listed as a main tenet in reaching a fair digitised society. This block builds up on a short explanation of the implementation of transparency in the coalition agreement, hinting at its importance, and then asking the participant what their view is on transparency. Then it tries to find out what the participant thinks are benefits or limitations of transparency, and how these can be enhanced or decreased. Next to that, linking to transparency, it aims to ask how the participant views informed consent in the public space, thereby challenging the subject to think critically about the idea of transparency. In the case where the participant saw only benefits of transparency earlier, this will likely stir some debate about why transparency is or is not feasible and beneficial for citizens. The resulting interview questions for this category are: *Q3. Transparency is often seen as the solution to data exploitation. What is your opinion on this?* And: *Q4. The assumption of informed consent in the smart city seems prevalent. What is your idea on this?*

Reciprocity

The last category focuses on how the participant imagines the future of the smart city by asking how, beyond what they had considered to be the future of the smart city, they dream the smart city's future to be. Here, I will introduce the idea of reciprocity, where the participant is invited to creatively brainstorm on reciprocity as a concept that stimulates a fairer digital city and goes beyond transparency. Here, the participant is also challenged to come up with an idea for an 'ideal smart city' where a reciprocal relation between municipality and citizen is constituted. This category will incite the participant to discuss in more depth their opinion on reciprocity, whether it is a useful concept, and based on this opinion imagine a tool or intervention that will radically improve the future of the smart city according to their opinion. The questions are formulated in the following way:

Q5. What is your view on reciprocity? Before the interview is recorded, the participant is given a short summary of the thesis and a short discussion on the concept of reciprocity will take place. In this question, I will go over the definition of reciprocity again and ask whether they agree

with his definition. The following question will depend on their previous answer. For instance, if the participant thinks the concept of reciprocity is not useful, the follow-up questions will be concerned with their explanation and what they think could constitute a fairer digital society. If the participants feel negative regarding reciprocity, this would be discussed in more depth. If the participant feels positive regarding the concept of reciprocity, the next question was:

Q6. What do you think citizens would like to receive in exchange for their data?

The last question is a somewhat creative question where the participant is asked to think of a practical tool in which they apply the concept they think is most useful. If they see potential in the concept of reciprocity, they are stimulated to think of a practical tool or project that aims for reciprocity. Yet, if they believe something else is more useful, for instance an increase in regulation, the participant is stimulated to formulate specific examples of how this should be implemented and how it would increase a fairer digital society.

Q7. How could it become a practical tool?

The following table (Table 2.) illustrates a summary of the operationalization of the identified topics that are turned into interview questions.

Themes	Interview Questions
General information and work setting	Q1. Can you introduce yourself and explain how you became interested in smart cities?
Smart Cities and Citizens	Q2. What do you think of the current level of citizen participation regarding big data in smart cities?
Transparency and Informed consent	Q3. Transparency is often mentioned as a solution in the discourse on data collection in the public space. What is your opinion on this?

	Q4. The notion of informed consent doesn't work in the smart city. What is your idea on alternative solutions?
Reciprocity	Q5. What is your view on reciprocity? Q6. What do you think citizens would like to receive in exchange for their data? Q7. How could it become a practical tool?

Table 2: Interview Questions

All the interviews were conducted through the online meeting platform Zoom. This allowed me to record the interviews easily. The audio files of these recordings were used to automatically transcribe the conversations with the software Amberscript. After every interview I read through the transcript and the notes that I made during the conversation. Here, I selected around ten of the most interesting quotes, which were categorised based on their corresponding theme (e.g., citizen participation, transparency, etc). After finalising all the eleven interviews, I read through the selected quotes and noted down the main content on online post-its. I did this through the website Miro, which is an online whiteboard tool. These subgroups form the basis of Chapter Four. Below is an example of how the grouping was executed (see Figure 2.).

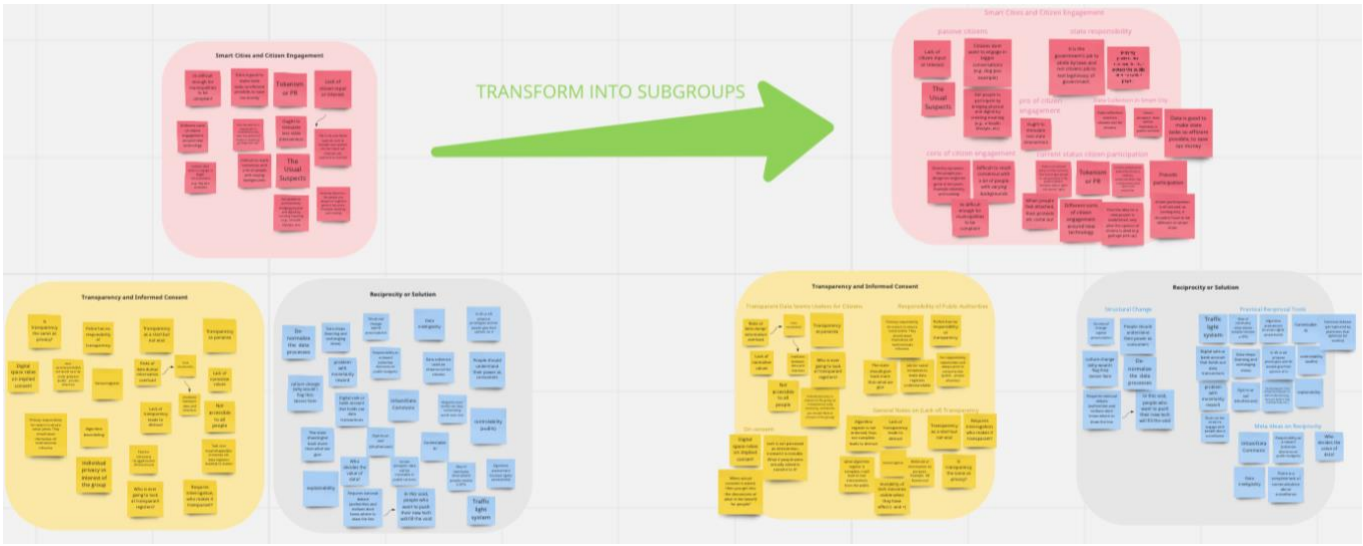

Figure 1: Transforming Themes Into Sub-Themes With Miro

3.5 Conclusion

My research is oriented towards investigating forms of benevolent surveillance in the smart city of Amsterdam that go beyond the *panacea* of transparency. Therefore, its aim is to create in-depth insight into what experts think of the current state of the smart city concerning citizen participation, transparency, and reciprocity. The smart city of Amsterdam represents the case for this study, as it is one of the smart cities that is very sensitive to the creation of a fair and equal city for all, yet still suffers high levels of social inequality and privacy problems that seem to increase with continuous development of digitization and datafication. The choice of methods responds to the study by engaging in conversation with experts on the topic, after which the interviews are transcribed and analysed to select the key findings in each conversation. These findings will then be supported by literature research in the following chapter, after which I will formulate an answer to the question of whether there are forms of benevolent surveillance in the smart city of Amsterdam that go beyond the *panacea* of transparency.

4. Analyses

This chapter focuses on analysing the data collected from the expert interviews. The data from the interviews are grouped into themes and sub-themes. The three different themes are: Smart Cities and Citizen Engagement, Transparency and Informed Consent, and Reciprocity. Within these themes, the data is clustered again in sub-themes that are detailed below.

The chapter will analyse the perspectives of the interviewed experts and will conclude that they perceive a general lack of citizen engagement in data collection processes in the smart city of Amsterdam. Out of the 11 interviews, a significant number of the experts explained this as a result of citizens' general lack of interest, time, knowledge, and capacities to engage with data collection processes. The other experts explained it as a result of the lack of transparency from the municipality's side, which creates the absence of citizen engagement, because people do not have the information they need to form opinions on the matter. The tension between citizen engagement and transparency seems to create an impasse, which poses a threat to Amsterdam's democratic culture. Reciprocity is proposed as a potential alternative, after which its strengths and weaknesses are discussed.

4.1 Perception of Smart Cities and Citizens

The first theme is divided into five subthemes: Data Collection in the Smart City, Citizens in the Smart City, The Status Quo of Citizens in the Smart City, Passive Citizens, and the State's Responsibilities. A smart city does not exist without its citizens. Therefore, every interview commenced with the question of what the participant thinks of the status of smart cities and the position of citizens in the city, with a specific focus on data collection. Is there an overkill of data collection in the smart city? Do citizens have enough input on what data is collected? Do they know where their data flows to and for what purposes it is used? The chapter finds that the age-old problem of citizen engagement is still present in today's technological society. Interestingly, the data showed there was a rather unanimous agreement that citizens were not involved enough with public decisions regarding data collection processes in the city. However, remarkably, the different experts either 'blamed' the citizens or the municipality for the lack of citizen participation.

4.1.1. Data Collection in the Smart City

One of the themes that emerged from the interviews was a tension between the efficiency and security of smart city installations versus the need to guarantee citizens' privacy and anonymity. Moreover, they felt that data collection has become an inevitable aspect to urban life, "*It's kind of like a genie that's been let out of the bottle. That's not going to be plugged back in again"* (Webster, personal communication, May 27, 2022). This awareness of data's inevitability in the public realm, also resulted in critical reflections on the status quo of its collection in the smart city where in general the opinion was shared that the urge to collect data from everything and everyone is somewhat getting out of control (van Praat, personal communication, May 25, 2022). Manwaring agrees and says: "*It's the same thing that happened with land. […] People grabbed land to control it, so that they could make money off it. Well, now people are grabbing data so that they can control it and make money off it"* (Manwaring, personal communication, May 20, 2022). Yet, at this point in the conversation the respondents often mentioned commercial parties as threats to citizens' privacy and anonymity, which is an aspect that I have deliberately chosen not to incorporate in this thesis due to its scope. Therefore, whenever this occurred during the interviews, I redirected the conversation towards the municipality's role in data collection. In the case of the respondent of the AMS Institute, Turèl mentioned that currently some of the projects concerning smart city technologies in Amsterdam are trying to capture less data (Turèl, personal communication, May 17, 2022). So, technologies that use cameras, for instance to measure the amount of people on the streets, are being replaced by alternative technology such as 'millimetre wave frequency sensors', which are less accurate but can predict the amount of people without recording them (Turèl, personal communication, May 17, 2022). Next to that, initiatives such as the Shuttercam (Shuttercam, 2022), where cameras in the public space can be turned off (in some cases also by citizens) if they are not necessary, aim to decrease the overall data collection in the city.

From a governance perspective, respondent Taylor argued there was a lack of '*corresponding architecture to protect the public interest*' (Taylor, personal communication, May 31, 2022). In the municipality of Amsterdam there are privacy officers that ensure the compliance with the GDPR, which is a set of rules to better protect the data of European

citizens. Yet, there are no officers that ensure and protect the interests of the body politic. For example, Webster spoke of the term “involuntary citizen participation”, where citizens' data is being used to inform smart cities without the citizens’ knowledge (Webster, personal communication, May 27, 2022).

Thus, the position of citizens in the smart city regarding data collection practices was overall perceived as quite fragile. Many respondents argued that smart cities should improve their collection processes so that eventually, in Charité’s words, “*the state [will] stand back and facilitate[s] the citizens to take control of [their] own life in the first place”* (Charité, personal communication, May 16, 2022). What then is the position of citizens in the current smart city?

4.1.2 Citizen Participation in the Smart City

“Citizen participation refers to the involvement of citizens in public decision making” (Baum, 2015). It enables citizens to exercise different amounts of power in communicating information, developing the capacity to act, and preserving or changing conditions in their environment (ibid.). The element of citizen participation was mentioned in nearly every interview, yet from very different perspectives. Many respondents saw citizen engagement as a contribution to public decisions, yet others were more critical of its actual impact, arguing: “*what does it benefit citizens if they indeed have certain participation?”* (van Praat, personal communication, May 25, 2022). Another critical reflection on citizen participation was offered by Meissner, stating, “*we're taking the status quo of the city right now and we're thinking about how to make this technology work for this city right now, while we have an enormous uncertainty about who it is that we are actually working with in the future”* (Meissner, personal communication, May 19, 2022). With this argument, she points at an interesting facet of citizen participation where technologies or policies are shaped according to the preferences of the current inhabitants of a city, assuming they will stay and the rest of the city stays static, in the sense that no new inhabitants will immigrate to the city with potentially very different preferences. Next to that, van Praat hinted at the balancing of interest between the citizen and the greater good. In some cases, he argued, safety for all is more important than the privacy of an individual. Thus, if the municipality of Amsterdam thinks it is justifiable to implement CCTV-cameras in the city to

increase safety for citizens, then in some cases we should be comfortable with handing in some bits of our privacy (van Praat, personal communication, May 25, 2022).

Thus, citizen participation can enable meaningful contributions to public decisions, however, it has some pitfalls and questionable elements too. So, how much impact do citizens have on current smart city projects?

4.1.3 The Status Quo of Citizen Participation in the Smart City

The respondents had relatively differing perspectives and opinions relating to the impact of citizens on public decisions regarding big data. Some experts strongly defended the claim that citizen participation was rather a "*pseudo participation process"* (Taylor, personal communication, May 31, 2022), where it tended to correspond more to a form of "*public relations dressed up as public engagement"* (Sadowski, personal communication, May 4, 2022). In some cases, the citizens are asked to participate and give their input, in the traditional consultation evenings, but are never asked to carry out their ideas(Charité, personal communication, May 16, 2022). These consultations with the body politic often arise after an idea for a project is constructed (Prins, personal communication, May 18, 2022). Other experts saw the issue of the lack of citizen participation as a result of 'passive citizens'. I will discuss this perspective in the following section.

4.1.4 Passive Citizens

One of the most mentioned topics during the interviews was the aspect of 'passive citizens'. This hints at the idea that citizens are perceived as being oblivious to the processes of data collection in the smart city. Quoting Smits: "*The first response of citizens, when we ask about cameras in public space, often is: that camera, I don't give a damn that it's there, I didn't even realize it was there, I don't know what kind of data it gathers, and that doesn't matter to me either. I have nothing to hide"* (Smits, personal communication, May 17, 2022). Phrases with the same or similar content I have come across during the interviews very often, such as in conversation with van Praat: "*I don't think the average citizen is at all interested in how it all fits together. There surely are people who are skeptical and think: well, I've lost all my privacy anyway. Or there are people who say: well, it will probably be fine, because I have nothing to*

hide" (van Praat, personal communication, May 25, 2022). Citizens are deemed inattentive regarding data collection projects, due to a lack of time or capacities, or they even seem unaware about potential implications of data collections. Another quote by Smits reflects the problem of the lack of citizen engagement well: "*if we were to rely purely on participatory projects, it would come down to this: cameras would be everywhere"* (Smits, personal communication, May 17, 2022). This points out the lack of citizen input municipalities receive during the event of proposing new data related projects. On top of that, Webster points out that in an example where citizens were offered an application that enabled them to easily communicate with their municipality, the input was often limited to rather simple topics: "*So, they've started to look at the data coming from that app and the things that people are most concerned about are dog poo, basically. […]. And often very, very simple things. They don't want to engage in bigger conversations, but they are quite happy to engage in, oh, there's a pothole in my street, or there's dog poop on the pavement, various things like that"* (Webster, personal communication, May 27, 2022). In all conversations the respondents pointed at a lack of time, a lack of knowledge or capacity to understand the scope of data collection or the feeling of powerlessness as a main reason for the 'passive citizen'. One remedy for the powerlessness of the individual, emerging from multiple interviews, seems to be citizen movements. Turèl mentions the example of the citizen movement Reizigersvereniging Rover (Commuters Association Rover) (Turèl, personal communication, May 17, 2022). This movement consists of volunteers who examine the quality of public transport in the Netherlands and received a statutory right to advise public transport companies and (regional) governments (Reizigersvereniging Rover, 2022). By establishing a citizen movement that critically analyses the data collection processes in the municipality of Amsterdam, a better dialogue between citizen and municipality could be put in place. However, interestingly there is a big divide between respondents who put more responsibility on citizens to become aware of current data collection processes in order to form a contra-movement, in contrast to the respondents who perceive fair data collection as a responsibility of the state. None of the respondents have uttered that fair data collection is solely the responsibility of either citizens or state, but it was evident that many respondents intuitively leaned to one of the supposed binary.

4.1.5. State Responsibility

The other 'side' of responsibility was aimed at the state. Prins from Amnesty International explained it in the following way: *"In addition to informing citizens, which of course is necessary […], there is just really an obligation for the government in the first instance to abide by the laws and human rights that are in place"* (Prins, personal communication, May 18, 2022). So, instead of looking at the responsibility of citizens to be aware of their rights and to inspect the legitimacy of the state, Prins points to the initial legal obligation of the state to adhere to laws. On top of that, she asks, when there is little transparency or communication regarding data collection, how are citizens encouraged to participate in or protest against municipal projects?

4.1.6. Reflection

The initial question concerning the position of citizens in the smart city was aimed at getting a general understanding of the participants' perception of citizen engagement and relation between the state and the citizen. This question aimed to receive short responses, yet during the interviews this topic seemed a lot more important than I initially thought.

This subchapter has argued that there is a general lack of citizen engagement in data collection processes in the smart city of Amsterdam. Most of the experts interpreted this as a result of the feeling of powerlessness, the lack of interest, time, knowledge and capacities from citizens to engage with public decisions concerning data. The other experts pointed at the lack of transparency from the municipality's side, which does not encourage citizens to form opinions on data collection processes, because they simply do not have enough information. This drives me to investigate the current state of transparency in the smart city of Amsterdam.

4.2 Transparency and Informed Consent

Transparency is often listed as a main tenet in reaching a fair digitized society. In this section, I will research what the participants think are benefits or limitations to transparency. Next to that, it asks how the participants view informed consent in the public space. It emerged from the interviews that there are two dominant narratives, one that follows the idea that citizens do not receive transparent data, due to a lack of interest, time, or capacity. The second

narrative holds that people are not given data that is sufficiently transparent in order for them to engage with it or to have meaningful attachment to it. In the following section, I will discuss the participants' perspectives on transparency as a concept, the current state of transparency and consent in the smart city and responsibility of public authorities regarding transparency.

4.2.1. On Transparency

In general, respondents were quite critical of the notion of transparency. Even though transparency is a very sought-after aim of municipalities, organizations, and institutions, none of the respondents agreed that transparency alone was sufficient. As Sadowski said during the interview: "[…] *transparency is often held up as like this kind of you know as the solution and as a necessary thing and as an inherently good thing, […] like this kind of panacea that will solve all these problems of […] data collection and surveillance and algorithmic bias, and anything and everything related to information"* (Sadowski, personal communication, May 4, 2022). This correlates to the main argument of this thesis, that poses transparency is seen as the ultimate panacea for all data-related issues, where unresolved problems should be solved with an increase in transparency (Sadowski, personal communication, May 4, 2022). Yet, as Expert 1 argued during the interview often transparency is a good aspect to integrate in data collection processes, however, more needs to be done to make sense of data or to use it in support of our own interest (Expert 1, personal communication, May 16, 2022). In this sense, transparency ought to be seen as a starting point: *"transparency with regards to data gathering is a precondition, but only transparency is not enough"* (Smits, personal communication, May 17, 2022). So, the central idea of transparency seems to be logical and acceptable, whereas it is the practice of creating transparency where the problem lies (Webster, personal communication, May 27, 2022). In the transformation of 'transparency as a concept' to creating 'transparency in practice' is where it seems to lack crucial features. Firstly, as Webster points out, it is pivotal to understand who sets the rules about what is made transparent and, importantly, what is not. Webster emphasizes the requirement of interrogating what is being made transparent, why is it being made transparent, who is creating transparency and finally, how we understand what is made transparent (Webster, personal communication, May 27, 2022). Next to that, Sadowski critically remarks that 'transparency in practice' fundamentally lacks critical questions about

structural issues, because there are no values, plans or politics integral to transparency. He says, "*it becomes transparency as an end in and of itself, rather than transparency as a means to do something else"* (Sadowski, personal communication, May 4, 2022). In this light, transparency is just the action of offering insight into information, without contributing to the intelligibility or usefulness of the data for the receiver. So, in general respondents have been critical of the 'concept of transparency' and 'transparency in action'. Transparency also forms the basic mechanism in privacy protection where citizens are offered information, which enables them to give informed consent. Yet, the idea of informed consent in the public space does not go without criticism. What do the experts think?

4.2.2. On Informed Consent

How would the smart city of Amsterdam look like if all citizens were asked for consent before the municipality started a new data related project? Would there be as many cameras in the streets as now? Taylor argues that oftentimes we perceive technology in the city as "just how things are" (Taylor, personal communication, May 31, 2022). Citizens are generally used to cameras and sensors being placed in the streets, so they do not feel like an intrusive intervention anymore. But what would the city look like, Taylor (2022) questions, if people were asked to consent to this? Would people want all these data harvesting technologies? What would a city look like that asks for democratic consent to legitimate their projects? She argues it would lead to people wanting to know what the benefits are for themselves. Why would they engage with the technology, and be monitored to and willingly give their image and information (Taylor, personal communication, May 31, 2022)? Webster adds that too often, in the digital society, there is a reliance on implied consent, where the consent is suggested or assumed without it being expressed directly (Webster, personal communication, May 27, 2022). In the public space, Webster (2022) says, there are not many choices and people may or may not be aware of firstly the consent, and secondly the implications of what they are being asked to consent to. Thus, transparency is a pivotal element in informed consent, yet as became clear during the interviews, it is often lacking.

4.2.3. On the Lack of Transparency

The municipality of Amsterdam is a leader in the field of transparent and fair smart cities. Amsterdam is one of the first smart cities that introduced an algorithm register where active algorithms are listed in order to provide transparency to the citizens. The municipality makes sure to take measures that avoid a Big Brother situation, as Turèl mentions (Turèl, personal communication, May 17, 2022). Next to that, Smits (2022) illustrates that the cameras and sensors in Amsterdam have stickers on them that offer citizens insight into how the technology works, who is accountable and what kind of data it collects. However, Smits argues, *"I think we haven't yet reached complete transparency, because, in my opinion, you are only transparent if you can also prove that people actually find the information you share, that information is understandable for everyone and answers the questions that citizens might have"* (Smits, personal communication, May 17, 2022).

The algorithm register is one of the results of the transparency campaigns and gives citizens insight into the services that make use of algorithms. These services include the parking controls, garbage collections, and (predictive) detection of criminal conduct (the Top400 and Top600 programs). However, the register does not give information about what data is collected, what algorithms are used or where the collected data is stored, and is thus, ironically, not sufficiently transparent yet. Next to that, the number of algorithms listed in the register also seems limited. Regarding this, Taylor refers to the Rekenkamer report (The Netherlands Court of Audit)(2022): "*There are an awful lot of algorithms at work in Amsterdam and only the ones where there is a clear public justification appear in the algorithm register. [….] There's no anti-fraud in welfare benefits in the welfare system on that list"* (Taylor, personal communication, May 31, 2022). Indeed, six projects are listed in the register in total, whilst it seems likely that the use of algorithms is a lot more widespread in Amsterdam. It seems that there is difference between the listed algorithms versus the actually used algorithms in the public space, which can lead to a sense of discomfort when citizens hear about harmful algorithms used in public services (e.g., the use of algorithms that led to the Child Care Benefits Scandal[5]), but all they see on the algorithm register are algorithms that seem harmless. Taylor

[5] The Child Care Benefits Scandal is a political scandal in the Netherlands that came to light in 2018, which concerned false allegations of fraud, partly due to racist algorithms. (Amnesty International, 2021).

continues: "*I think if there was a real requirement to report everything, we would see a very different list of systems. […] Then it would get really interesting because that would lead to exactly the kind of politics I'm describing, because then you have a body politic that can respond to interventions upon them"* (Taylor, personal communication, May 31, 2022). Thus, by offering citizens transparency regarding the collected data and processes in which it is analyzed, such a list would enable the formation of opinions among citizens, according to Taylor (2022).

Charité points in the same direction and states that the lack of transparency leads not only to a lack of citizen engagement, but also to distrust (Charité, personal communication, May 16, 2022). He argues that the adoption of technology by citizens is driven by three concepts: gain, comfort and trust. Citizens must stand to gain from the technology, feel an increase in their comfort and feel a sense of trust (in the service provider or service). Yet, Charité advances, the government does not communicate clearly over what citizens are gaining from the collection of their data, they do not illustrate the additional comfort derived from data collection, and the overall trust in the government at the moment is questionable, thus the overall chance of technology adoption by citizens is quite low (Charité, personal communication, May 16, 2022). This lack of communication and transparency in, among other projects, the algorithm register illustrates how a potential decrease in trust from citizens in the government can be explained.

4.2.4. Transparent Data Seems Useless for Citizens

If a lack of transparency is disadvantageous, it seems logical that providing transparency is desirable. Interestingly, Sadowski argues that offering a lot of data to citizens has effectively the same effects as a lack of transparency (Sadowski, personal communication, May 4, 2022). He gives the example of a data dump, which is a strategy where an entity is given so much information, it becomes impossible to make sense of it. Effectively it has the same result as giving very little information. Webster adds: t*he expectations for citizens that they can all process large quantities of data is really beyond most people"* (Webster, personal communication, May 27, 2022). He continues by questioning why citizens should be obliged to try to understand all this data to attain public services. Thus, the other extreme where big

quantities of information are offered seems just as useless for citizens as the lack of transparency.

Next to the 'uselessness' of providing too much information, there was another argument that was often mentioned during the conversations: the idea that citizens are too indifferent about data to make use of it in a transparent form. This sub theme often arose as a logical next argument, after stating that many citizens are not interested or engaged with data collection. Van Praat summarizes this point in the following quote: *"Of course, there are initiatives being taken to be more transparent towards citizens. Only, I really wonder what exactly the purpose is of that. What does the average Dutch citizen really get out of that? For instance, take the example of the algorithm register of the municipality of Amsterdam. Who is really going to look at that besides journalists and experts"* (van Praat, personal communication, May 25, 2022)? So, even if the data collection processes are transparent in the municipality of Amsterdam, then who would really care, is the question some respondents were uttering. Citizens, according to their perspectives, are disinterested in data collection, and making data transparent will probably not lead to more citizen engagement. Smits adds to this argument that it is indeed difficult for citizens to understand what happens with their data, yet, there are activist groups and citizen movements that do have a good overview of how to use transparent datasets or registers, such as Follow the Money, Bits of Freedom and Amnesty International (Smits, personal communication, May 17, 2022). He continues: *"there are plenty of examples where these parties [the citizen movements] do make a difference in the discussion and ensure that change is brought about and that organisations are held accountable"* (Smits, personal communication, May 17, 2022). Prins agrees, and states that societal organizations have the task to make, for instance, algorithm registers clear to citizens and to highlight or protest seemingly unfair processes (Prins, personal communication, May 18, 2022). However, as mentioned earlier in 4.1.3 State Responsibility, in the end it is the government's job to abide by the laws and respect human rights, not that of citizens or societal movements.

4.2.5. Reflection

In general, the respondents were critical of the concept of transparency, and often saw its limitations in its current and potential future forms. As mentioned previously, one narrative

that was provided by the respondents was that there was a lack of transparency in the smart city of Amsterdam that disabled citizens from forming opinions on the data collection processes. This results in a situation where the municipality can collect data as they please, without providing a justification to the citizens, because many citizens are unaware of what's going on or feel powerless. The small thought experiment with Linnet Taylor regarding informed consent resulted in the idea that citizens would probably critically inquire what the benefits are from data collection if they were asked to agree with being monitored. The status quo where citizens are rather apathetic towards data collection then does not correspond with the thought experiment.

The second narrative holds that citizens are just not interested in data collection processes and lack time, capacities, and knowledge to engage with transparent data. Therefore, it seems useless to spend a lot of time and money pushing for transparency in the city. Next to the idea that citizens do not engage with data due to a lack of time, capacities, etc., there is also the factor of information overload that withholds the effectiveness of transparency. However, the process I have just highlighted seems like a vicious circle or an impasse (see Figure 1.): because data is not transparent, citizens do not engage with data-driven governance and are limited in forming opinions. Because citizens do not engage and form opinions it seems useless to make data transparent. Therefore, it is necessary to think of alternative ways to collect data, which breaks out of this impasse. In the next section, I will discuss the concept of reciprocity as a possible alternative.

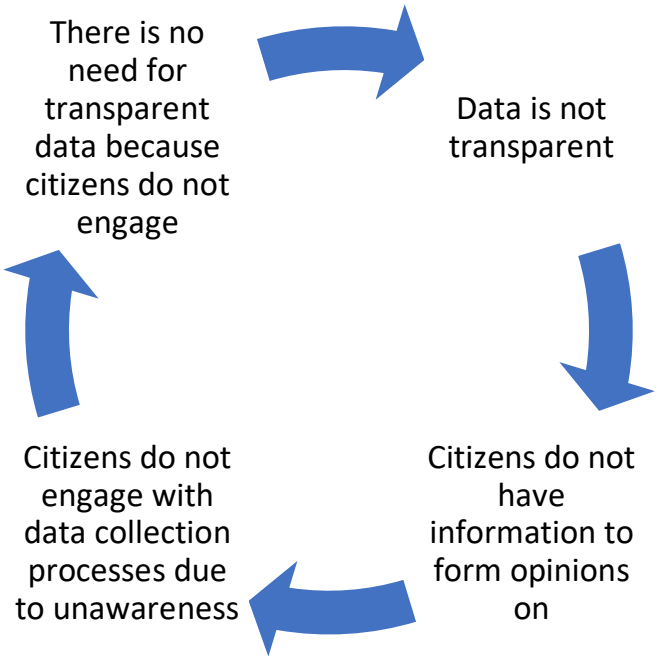

Figure 2: The Vicious Circle of (the Lack of) Transparency and Citizen Participation

4.3 Reciprocity

In the previous section, I have illustrated the tension between transparency and citizen engagement. In Chapter 2 Theoretical Insights, the concept of reciprocity was brought forward to go beyond this impasse, by introducing the practice of exchanging data between municipality and citizen for mutual benefit. By establishing a focus on mutual benefit, the municipality is 'forced' to explain what the gain of data collection in the public space is for citizens. This clearly differentiates itself from transparency, where the municipality does not need to justify its data collection, but only needs to show parts of the process of that collection. By adding a level of justification from the municipality to the body politic, I hypothesize that the impasse created by the tension between transparency and citizen engagement can be escaped. In the next section, an analysis will follow of the respondents' interpretation of reciprocity and its potential for success.

4.3.1 Respondents' Interpretation of Reciprocity

In general, reciprocity was seen as an interesting concept that could avoid the limitations and troubles that come with transparency. Yet, the different experts had different interpretations

and expectations of how reciprocity between the municipality and citizens could look like. In the following section, I will outline the different interpretations, where the common interpretations are grouped together, whilst keeping their nuances. This means that the grouped interpretations could overlap with other interpretations, or contrarily, that there could be evident dissimilarities within one group. This illustrates the messiness and complexity of ethics regarding data collection, which points to the impossibility of finding a one size fits all solution or the one 'correct' or 'true' interpretation or definition of reciprocity.

4.3.1.1 Reciprocity as justification

The first interpretation outlines reciprocity as giving justification for data collection processes from municipality to the body politic. In smart cities, data collection is often used for and by the police, states Sadowski (2022). Therefore, the retrieved data is not used for citizens, but it is used on citizens, which fundamentally changes how the smart city looks, but also what kind of data is collected and for what purposes certain data is created. Sadowski continues, this data is actively created and generated for specific purposes by specific people on citizens, which is why transparency is not enough and we should look beyond this concept. He states: "*it is not enough to say […] how data is being collected or when or where it's being collected or whatever. We must go even deeper and ask questions like: why is this being collected and who is collecting it? For what reasons and are those good and justified reasons"* (Sadowski, personal communication, May 4, 2022)? On this interpretation, the municipality should justify to the citizens what data they collect and why. Thus there should be a general reasoning behind data collection that is (also) focused on the benefit for citizens. Charité adds: *"The moment [the government] collects data, they are now often thinking of the benefit to the government itself. So how can we [as a government] monitor more effectively? Whereas in my opinion, in the first place, they should think about what data they can collect that directly benefits the citizens. And already quite a lot of the data that is collected has benefits for the citizens themselves but is then not communicated to them"* (Charité, personal communication, May 16, 2022). This statement makes it clear that reciprocity also entails that in the processes of estimating what data is necessary, there is room to think about what would be beneficial for citizens, and not only for the municipality. This corresponds to Sadowski's perception of data collection, where

he argues that data is actively created for specific purposes. If citizen benefit would be calculated into those purposes, data collection processes could become more reciprocal (Sadowski, personal communication, May 4, 2022).

Next to that, Charité mentions the need to communicate benefits to citizens. In the smart city of Amsterdam, a lot of data is collected that has a positive impact on the day-to-day life of the citizens. Yet, there is a lack of clear communication towards citizens on what the benefits of the system might be (Charité, personal communication, May 16, 2022). Taylor mentions this too, as she argues that most people see surveillance systems in place everywhere throughout their city, but in general are very unaware of what the rationale and benefit is of placing them (Taylor, personal communication, May 31, 2022). An interpretation of reciprocity thus is also the increase in 'discussion' and information flow between citizen and the municipality, where there is an active emphasis on offering people answers to their questions, for instance in the form of a BOA, which is a special investigating officer in the public space in Amsterdam (ibid.). By deploying a BOA in, for instance, a public space where recently new data collection systems have been placed, the discussion on the rationale and why citizens should engage and see the system as legitimate will be stirred. Van Praat adds to this that this form of communication is also necessary when it is impossible to deploy a civil servant in the public space (van Praat, personal communication, May 25, 2022). For instance, in the case of a rejected subsidy, citizens should receive information about on what basis their request has been declined. In the end, van Praat says, it is necessary to provide a certain explainability. Thus, the first interpretation of reciprocity emphasizes the requirement of the municipality to justify their data collection systems to their citizens, in a way that citizens can understand, and explain why the system is legitimate. Next to that, the data that is created should be for a citizen-benefitting purpose. Lastly, the benefits of the deployed systems should be articulated to citizens, in order for citizens to legitimize and engage with them.

4.3.1.2 Reciprocity as Increase of Democratic Citizenship

The second interpretation perceives reciprocity as a means to increase an individual's or collective's democratic citizenship. Democratic citizenship entails among other things involvement in political decision-making, having some degree of freedom through free speech,

press and religion, and enjoying systems of representation (Schoeman, 2005). This interpretation was often defined by respondents as increasing the voice of citizens in political decisions. Prins from Amnesty International argues: *"Eventually a project [from the municipality] ought to be established by looking at how the rights and freedom of citizens can be promoted."* So, before a project is initiated, citizens need to be queried about what kind of facilities or services are missing in certain communities, and how the municipalities can contribute (Prins, personal communication, May 18, 2022). Manwaring from CitiXL adds to this that in the realm of augmented reality (AR) and virtual reality (VR), this form of reciprocity has become an important aspect. He describes prototypes of AR and VR environments, where people are asked for their opinions on its design (Manwaring, personal communication, May 20, 2022). Another example is proposed by Expert 1, as they argue for the increase of responsibility for citizens. They illustrate how responsibility is taken away from citizens due to smart technology in the city through the example of garbage separation. Recently, the municipality of Amsterdam has introduced automatic garbage separation, because it has proven to be more efficient and correct (Expert 1, personal communication, May 16, 2022). However, Expert 1 argues, this is not necessarily a bad thing, but it shows how responsibility is taken away from the citizen. Instead, they argue, maybe it is time for municipalities to "*pass the ball"*, by giving citizens the option to deal with problems in their communities themselves if they want to whilst receiving help from state officials if requested (Expert 1, personal communication, May 16, 2022). Meissner shared a similar idea during the interview, when she mentioned the example of Sanctuary Cities. These are cities that do not prosecute undocumented people or inform state officials about them to avoid arrests, but instead provide them with services that they know they need to be able to live in the city (America's Voice, 2020). In the digital space this would mean that people will receive some sort of VPN citizenship, so that they can go around the city without being recognized due to a rerouting of their information, which makes them anonymous, whilst still receiving the resources they need from the state to live a good life in the city (Meissner, personal communication, May 19, 2022). Thus, it is also a form of giving more responsibility to the individual, while decreasing state influence. Lastly, Taylor mentions the importance of democratic representation as a potential

way to increase the citizens' positions in political decision-making regarding data collection (Taylor, personal communication, May 31, 2022). Currently, she argues, there are no political parties in the Netherlands that have a platform on surveillance, smart city technologies or monitoring systems. People are not encouraged to ask questions in the political sphere. Thus, there is some sense of lack of democratic representation concerning the collection of data.

The interpretation of reciprocity as a means to increase an individual's or collectives' democratic citizenship could be established through the collection of data for the purpose of citizen benefits, by encouraging and incorporating citizen opinions, by giving more responsibility to citizens and by fostering democratic representation concerning data collection issues.

4.3.1.3 Reciprocity as a form of commons

The third interpretation explains reciprocity as a form of commons (e.g., Data Commons). Traditionally, the commons is associated with natural resources in rural areas, like drinking water supplies, irrigation systems, fishing waters, logging forests and grazing lands. In the traditional sense it involves the joint management of the common resources by the users in a form of self-organization. The commons, as a coordination mechanism, is thus an alternative to the logic of the state and of the market when it comes to the management of shared resources (Hogeschool van Amsterdam, 2020). During the interview, Expert 1 (2022) mentioned the idea of Urban Commons. Smits (2022) mentioned a similar idea: the Data Commons, which derives from the commons, but applied to data stands for shared-use data platforms where the community collectively sets the rules for access and use. Data commons are a new way of organizing data and giving it back to citizens (de Waag, 2019). Technically, a data commons is a repository of personal information that describes the access and usage rights of all data generated by an individual (van Loon & Snijders, 2021). The promise is that data commons will provide users easy access to their own data, information on who is able to access their data and what they can do with this information. Another mention of the commons was during the interview with Expert 1. They mentioned the idea of Urban Commons, which follows from the idea of commons and applies it to urban landscapes. The Urban Commons can, for instance, entail the common use of materials like buildings, nature parks or means of transportation.

However, it could also entail immaterial and/or virtual things, like social networks of a community (Hogeschool van Amsterdam, 2020). The Urban Commons distinguishes itself from Data Commons by emphasizing public services more than Data related services.

4.3.2. Critical Notes on Reciprocity

Even though many respondents saw reciprocity as a meaningful alternative to transparency, there were a few important critiques on the concept. In the following section I will outline them.

4.3.2.1 Contestability Instead of Reciprocity

Firstly, an alternative to reciprocity was suggested: contestability. This term was brought to attention during the interviews with Turèl (2022) and Smits (2022). In the article 'Contestable City Algorithms' (Alfrink, et al., 2020), the authors describe the lack of algorithmic transparency in the city, which correspond to my main argument, and reflect on the need of a concept that goes beyond transparency. However, instead of looking at the concept of reciprocity, the authors argue for contestability, which they define as opposing an action and to compete for power over something (Alfrink, et al., 2020). Applying contestability to algorithmic systems lead to enabling citizens to influence and object to the operation of algorithmic decision systems (ibid.). Thus, instead of offering the user transparency over algorithmic decision systems, it gives users the chance to object against the outcomes and alter the system. This differentiates from the idea of reciprocity in the sense that contestability only enables citizens to voice their opinions in cases they object to the system, but they do not have a lot of say in the process of creating the algorithm, its uses, its purposes and the potential benefits it can give to a community. Instead, the idea of contestability allows altering in an already set algorithmic decision model, whilst the idea of reciprocity leans more towards a co-construction perspective, where models would be constructed from the first phase with citizen benefits in mind. Thus, there is a difference in which stages citizens are allowed to intervene with the technologies, which has positive and negative consequences. The negative consequence is that citizen and public values are not embedded in the construction of the algorithmic decision system, whilst from a reciprocal lense this is one of the main focuses. The positive consequence

of the later stage in which citizens can intervene with the technology, is that it becomes more accessible to engage with a finished product, than to engage with an abstract technology that still needs to be built from the ground up.

4.3.2.2 Purpose of the State

Another critical note on reciprocity emerged out of the conversation with Meissner (2022). During the conversation she rightly so challenged me on the concept of reciprocity and queried whether reciprocity is what needs to be the fundament of the relationship between the municipality and citizens: *"[…] if we're thinking about what the purpose of public institutions is, it's actually supposed to give more back than people put in. […] So I'm wondering whether just reciprocity would be right"* (Meissner, personal communication, May 19, 2022). So, in other words, should we not strive for more than reciprocity and instead require our state to return us more than what citizens give? Since public institutions exist to provide public goods and services to citizens for the maintenance of the state, it becomes a question of the responsibilities of the state and citizens in the Dutch democracy. During the interview with Manwaring, he argued that the state's primary responsibility is to create stability and to ensure social justice and leave innovation and taking risks to the marketplaces (Manwaring, personal communication, May 20, 2022). Yet, in smart cities it seems these tasks are often interwoven. In the following section I will investigate what the expectations of state and citizens are in a democracy and in a democratic culture.

4.3.2.3 Questions of Democracy

The word democracy derived from *"demos"* which is Greek for people. In a democratic society, it is the people who hold power over the state (Stanford Encyclopedia of Philosophy, 2022). One of the core obligations of the democratic state to the citizen is to protect democratic culture and "basic human rights such as freedom of speech and religion, the right to equal protection under law", and to stimulate and enable the organization and participation in political, economic and cultural life of society (U.S. Department of State, 2022). Thus, in a democratic society, the state is responsible to produce value for the citizens. Yet, citizens in a democracy also have responsibilities to engage in democracy and uphold the democratic

culture that reciprocates by safeguarding their rights and freedoms. Next to that, citizens are also expected to pay taxes, respect the law and rights of fellow citizens (Milner, 2002). This willing submission to state sovereignty keeps citizens safe and secure, in return, and enables them to live their lives largely unencumbered due to the state's responsibilities (ibid.). This would indicate that the relation between the state and citizen was constituted on a reciprocal basis, which would strengthen the claim that reciprocity is a useful concept in the smart city. However, what does a democratic culture specifically mean?

"A democratic culture is a culture in which individuals have a fair opportunity to participate in the forms of meaning making that constitute them as individuals" (Balkin, 2003). Next to that, it holds more than representative institutions of democracy and deliberation about public issues (Balkin, 2003). It is a culture that encourages and creates a fair opportunity for individuals and collectives to participate in the creation of their lived-experiences which constitutes them as a person. A democratic culture stimulates an individual's self-governance, equal relations, disposition to protest and democratic legitimacy (Thomassen, 2007). It is democratic in the sense that every person, regardless of their political, economic or cultural status, has a fair chance of participating in the development of ideas and meanings that constitute their environment, their communities and themselves (Balkin, 2003). In this process of participation, individuals and collectives develop themselves into active and informed citizens, where they make use of democratic values and rights, such as protesting. Like democracy as a form of government, democratic culture exists in varying degrees in different societies. However, during the analyses of the interview data, I perceived that the democratic culture in the smart city of Amsterdam seems to be falling short. During the expert interviews, it became evident that the development into an informed citizen has increasingly become difficult through either a lack of transparency from the state's side, or through a lack of time, interest or knowledge from the citizen side, or due to a mix of both.

4.3.3 Reflection

The past subchapter analyzed the respondents' interpretation of reciprocity, and how it could potentially be employed in the smart city of Amsterdam. The interpretations of reciprocity by all respondents were grouped together and resulted in 1) reciprocity as justification, 2)

reciprocity as a means to increase democratic citizenship and 3) reciprocity as a form of commons. Following, the idea of contestability was discussed as a potential alternative to reciprocity, after which the differences between the two concepts were laid out, resulting in a descriptive comparison. After, the question of democracy was discussed as an attempt to answer what the state's responsibility towards citizens ought to be, which led to the observation that the smart city of Amsterdam seems to suffer a deficit in democratic culture in the area of data collection processes in the public space.

4.5 Conclusion

The biggest surprise of this chapter was the importance of (the lack of) citizen participation in smart cities. During the interviews I expected an emphasis on discussion on transparency and the lack of transparency in the smart city. However, in the first section of the chapter Perceptions of Smart Cities and Citizens, most arguments ended as a citizen participation argument. The dynamics surrounding citizen participation are probably as old as democratic practices, yet the importance has not decreased in the slightest sense. What was interesting is that the perspective on citizen participation was either seen from a side that 'benefits' the state, where citizens were described as uninterested, lacking time, knowledge and capacities to participate with public decision making, participation projects or protests. On the other side, the perspective that 'benefits' citizens, the lack of participation was explained by an overall lack of communication and transparency from the government. This leads to the second section of the chapter, Transparency and Informed Consent, which formulates an answer to the first sub question: **Q1:** *What are the implications of the transparency-orientation in the smart city of Amsterdam?*.

In this subchapter the respondents were quite critical of the level of transparency in the smart city, and often saw limitations in the concept of transparency on a more abstract level. Some respondents argued that the lack of citizen participation resulted from the absence of transparency and communication concerning data collection processes. Therefore, citizens could not form opinions on the matter, which led to a void in which cities can collect the data they want, without justification of citizens. In this case, the only restriction to data collection would be their need to comply with GDPR. In this case, there is a minimal level of citizen

involvement. The other narrative concerning transparency, holds that the aim of transparency is doubtful when there are little groups of people who would actually engage with transparent data. In many interviews, the example was given of the algorithm register, where respondents claimed that it was a perfect illustration of a transparent project, but which did not attract a lot of citizens' interest. Next to that, arguments against the usefulness of transparency were made on the basis of information overload. This subchapter formulated an impasse, where data is not transparent, which leads to the lack of citizen engagement and opinions, that again leads to the notion that transparent data is useless because citizens do not engage (see Figure 1). During conversations with my thesis supervisor dr. Nagenborg, he expressed this impasse well and said: "*because you don't talk to us, we watch you from a distance"* (Nagenborg, personal communication, June 13, 2022). Thus, the answer to the first sub question is that the orientation on transparency as a *panacea* for data collection issues, results in a vicious circle where the lack of transparency stimulates the lack of citizen engagement and vice versa. As a potential way forward, the concept of reciprocity was proposed to escape this impasse.

The last subchapter Reciprocity describes the different interpretations respondents had of the concept and formulates the answer to my second research question: **Q2**: *To what extent do experts identify reciprocity as a useful alternative to transparency?*. Respondents saw reciprocity as a way of justification, as a means to increase democratic citizenship and as a form of commons. In these understandings reciprocity has a way to escape the impasse that is formed through the tension between transparency and citizen participation. Reciprocity has an actionable aspect, which is performed when the state needs to communicate the benefits from data collection to the citizens. This process alters the focus of current data projects from 'state interest first' to 'benefits-for-citizens first'. However, some respondents brought up the question of what the responsibility of the state truly was towards the citizen? Are they ought to reciprocate to the citizens? Or to the other extreme, should the state not give more to the body politic than the body politic gives to the state? This brought the chapter to Questions of Democracy, where it was argued that the state ought to be in a reciprocal relation with the body politic, based on the idea that the state offers protection and safety in exchange for citizen responsibilities, such as by paying taxes and respecting laws and fellow citizens. Yet, one

unsolved problem to the idea of reciprocity is the idea of mutual value. How can one constitute how much 'something' is worth? The idea of reciprocity is based on the idea of receiving and returning an equal entity, yet, especially in terms of big data and the gains of a public service for citizens, it seems rather impossible to define a static value. During the interviews, Webster (2022) and Taylor (2022) put forward the need for a national debate or conversation, where a societal decision should be made on where to draw the line of data collection and what values are attached to certain data or services. Finally, the discussion of the responsibilities of a democratic state and citizen brought forward the issue of the quality of democracy in the digital era. In the smart city of Amsterdam, it seems citizens are apathetic towards data collection, either due to a lack of transparency from the state or due to the citizens' lack of capacities to participate. It seems these invisible technologies in the city have negatively impacted the formation of an informed, democratic citizenship, where instead the body politic regarding data collection has become unaware and meaningless. Concluding, during the analyses I have perceived an impasse because of the tension between (the lack of) transparency and citizen participation, which is perceived as a deficit of democratic culture. This entails that citizens are not aware enough about data collection processes, which limits their enactment of democratic values such as protest, self-governance and participation. To break out of the vicious circle of unresponsive citizens and deficient transparency, a new concept is required that can revive the democratic culture in the smart city and prioritizes the benefit of data collection for citizens. Reciprocity has proven itself a useful concept, which prompts the smart city to turn to citizens first and to justify to citizens what they receive and benefit from the collected data. Reciprocity also has the potential to revive democratic culture in the smart city, by breaking up the impasse between the lack of transparency and citizen participation. However, the implementation of reciprocity in the smart city requires the establishment of new relationships where citizen benefits are prioritized over state benefits, which require new commitments and tasks for both.

5. Conclusion

5.1 Answer Research Question

The aim of this thesis is to answer the research question: *'In what way can the smart city of Amsterdam stimulate benevolent surveillance beyond the transparency-orientation?'*. To answer this question, I have carried out literature research and conducted semi-structured interviews with 'smart city-experts'. In chapter two Theoretical Insights, the literature research pointed towards the key findings that the urban space has become increasingly digitised and datafied, leading to an increase in surveillance practices in the public spaces of Amsterdam (Kitchin, 2016). These surveillance practices include the use of CCTV-cameras, sensors that measure numbers of people in a certain area, the noise and air pollution level. This form of surveillance has many benefits, such as more efficient use of public money due to data-driven solutions. However, surveillance also has some detrimental effects, such as violations of an individual and groups privacy and their human rights (Taylor et al, 2017). As a sort of *panacea* to the social issues related to surveillance transparency has been promoted and has become a truly institutionalised aim. In general, more transparency promises greater accountability which should enhance democracy, even power distribution and decision making (Mol, 2016). Offering citizens transparency also enables the basic mechanism in privacy protection, which is informed consent (Barocus & Nissenbaum, 2009). The citizen is given information on surveillance practices in the smart city, which they can consent to. Yet, there is no option to opt-out of surveillance when a citizen does not consent to the practice. Next to that, the transparent information that citizens receive is either not enough or difficult for citizens to give meaning to (ibid.). This argument was also frequently mentioned during the expert interviews, where many respondents perceived a lack of (good) transparency in the smart city of Amsterdam. This lack of transparency is according to some experts due to the lack of citizen engagement. When citizens do not engage with transparent data collection processes, it seems useless to fight hard for more transparent projects. Yet, the other side of the coin shows that citizens, as multiple experts argued, can impossibly form an opinion on data collection processes, if there is too little data available to do so. I recognize the lack of transparency and citizen engagement as a democratic deficit. Thus, the orientation of transparency as a panacea for data collection issues

in the smart city has reached an impasse, which I perceive as a deficit in democratic culture. Therefore, I propose reciprocity to stimulate breaking out of the vicious circle and to reinvigorate democratic culture. Reciprocity has actionable characteristics that alters a 'state-interest-first' perspective into a 'benefits-for-citizens-first' frame, through the active pursuit of justifying and proving that data collection processes are benefitting citizens, instead of public institutions. Thus, by implementing a reciprocal frame to data collection processes, the smart city of Amsterdam is required to explain and justify the benefit of their conduct to and by citizens, which will result in the stimulation of benevolent surveillance beyond the transparency-orientation.

5.2 Filling the Knowledge Gap

I have identified a knowledge gap in the field of benevolent surveillance and transparency. The scientific field of Surveillance studies and Urban Development has written extensively about the requirement for transparency in smart cities, yet little critical analyses have been conducted on the successes of transparency. I have attempted to fill the knowledge gap, by engaging in conversation with 'smart city-experts' from different fields (e.g., academic, commercial, governance perspectives) and by conceptualising a form of surveillance that surpasses the current conduct. Reciprocity was put forward as a lens that transcends the limitations of transparency. During literature research, the concept of reciprocity was rarely mentioned, however, characteristics that I identify as reciprocal were often mentioned. Concepts such as 'citizen-centred approaches' in the smart city are often mentioned in Critical Surveillance studies and in Governance policy. However, many citizen-centred approaches put the responsibility of citizen engagement on citizens themselves, which is something I disagree with after writing the Analysis chapter. Not citizens, but the state is responsible for keeping their conduct concerning data collection in check and they should ensure that their services are truly for the benefit of citizens, instead of the state. Next to that, during the conversations with experts, many respondents argued for (systemic) changes that corresponded to the idea of reciprocity, by emphasising the need of justifying state conduct to citizens and recognizing whether there are actual benefits for citizens. Thus, reciprocal thinking is not a new insight (e.g.

citizen-centred approaches), however, summarizing this way of thinking into the concept of reciprocity is new, which is how I have tried to fill in the earlier established knowledge gap.

5.3 Generalizability

In this thesis I have found new insights regarding citizenship in the smart city of Amsterdam. However, it can be argued that these insights do not only hold to the case of Amsterdam, but instead, could be generalized to other smart cities, too. This is a question of generalizability. The generalizability of a qualitative research is defined by Polit and Beck (2010, p. 1451) as "an act of reasoning that involves drawing broad inferences from particular observations". Thus, the question arises, can I generalize my findings and make broader claims by solely observing the smart city of Amsterdam? Through the analyses and comparison of case studies concerning citizenship in other smart cities, I argue that this depends. In a recent article, Noori et al. (2020) have compared the smart cities of Amsterdam, Barcelona, Dubai and Abu Dhabi on the basis of design, governance and implementation. They found that the core drivers that influence smart city governance differs per smart cities, where for instance the city of Masdar, Abu Dhabi is mainly driven by sustainability goals, whilst Barcelona attends more to social inclusion (Noori et al., 2020). According to this research, Amsterdam is market-oriented and driven by innovation, with a recent growing attention to social inclusion (ibid.). This shows that every smart city has unique characteristics, that in some sense make them more or less similar to other smart cities. For instance, the smart city of Amsterdam has certain aspects, like the emphasis on social inclusion, that makes it a similar case to that of the smart city of Barcelona. Therefore, certain elements of the arguments I have made about Amsterdam in my thesis can be generalized to Barcelona or smart cities that have similar characteristics as Amsterdam. However, adequate contextual information is necessary to recognize which aspects of the argument are suitable to be transferred to a different case (Gheondea-Eladi, 2014).

5.4 Suggestions for Further Research

I have aimed to investigate a form of surveillance that goes beyond the orientation on transparency. Through 11 expert interviews, I have found new insights on aspects of transparency, citizen participation and reciprocity. However, this research is not free of

limitations, which relate to the formulation of the research aim, objectives, application of data collection method, the sample size, etc. Especially, concerning the methods of this thesis there are some limitations that would require further research. Due to a lack of time, resources and because of the scope of this thesis, there were no interviews conducted with citizens of Amsterdam. In future research it would be interesting to conduct focus groups or individual in-depth interviews with citizens of Amsterdam, who may or may not have any specific interest in data collection processes. In this case it will enable a discussion from the perspective of the people who are the actual users, subjects or victims from the increased data collection processes. Even though experts are essentially also citizens, it feels like a limitation to this research to not incorporate the voices of citizens who are not engaged with data collection through their work for either a commercial, governmental, academic or NGO entity. By combining this to recent findings, it will add to the multi perspective narrative that I have tried to establish.

Another further research recommendation builds upon the findings of this research. During the initial phase of the thesis, I did not anticipate that the research into alternative forms of benevolent surveillance that go beyond transparency, would redirect back to questions of democracy as much as it did. During the analyses of the data, it became clear that the proposal of reciprocity as an alternate form to transparency, would become stronger when it is grounded in a more historical context. The historical context that I would suggest for further research, could formulate an answer to what the fundamental obligations and responsibilities of the state are towards citizens, and how this has changed throughout history? By assessing the responsibilities of the state and citizens in a democratic state, it can formulate whether the relation between citizen and state was ever meant to be reciprocal. In the analysis chapter, I concluded that, simply put: paying taxes in exchange for services and safety constitutes a reciprocal relation. However, Fran Meissner, argued that public institutions were originally ought to return more to citizens, which did not correspond to a reciprocal relation. Thus, further research in historic ideas and perceptions of citizen and state relations in a democracy would be beneficial to strengthen the argument for reciprocity. This leads to the third theme required of further research, that arose during the Analysis chapter. Here, I argue

that the smart city of Amsterdam in its current form has a deficit in democratic culture. However, by implementing reciprocity there is a potential to reinvigorate the democratic culture, which will eventually encourage people to enjoy more 'democratic values', such as self-determination. Yet, is it a paternalistic trait to stimulate democracy? How can we know whether citizens do not desire a democratic deficit? Here, I am inspired by Eric Fromm's book 'Escape from Freedom' (Fromm, 1994), where he researches people's relationship to freedom, especially in the wake of the Nazism. Thus, to justify reciprocal surveillance as a more benevolent form, I will need to be able to defend the claim that more democratic culture is indeed something that people want.

The last recommendation for further research would be to incorporate commercial entities in the research on benevolent surveillance. Due to the scope of this thesis, my main focus has been on the state's conduct of surveillance and the relationship between state and its citizens. However, in most smart cities, corporate entities have a large influence on the way data is collected, stored and analysed. Businesses oftentimes deliver the smart technology, yet, keep the basic mechanisms of their technologies classified due to comparative advantages. Further research could investigate what effect corporate entities have on benevolent surveillance in the current form of the smart city of Amsterdam. Next to that, it will allow research into how reciprocity could be applied to the economic aspect of the smart city.

5.4 Practical Implications

In the last section of this thesis, I will outline the practical implications from the insights that I gained in the Analysis chapter. The overarching insight is that reciprocity indeed seems to be a fitting alternative to transparency. The practical recommendations that are proposed are necessary to meet a basic level of reciprocity in data collection processes in the smart city of Amsterdam.

1. Citizen benefits first

The first recommendation concerns the prioritisation of citizen benefits over the municipalities interests. One way to enable this is by allowing citizens to reframe data collection initiatives around issues and opportunities that they diagnose themselves. By designating citizens this

role, it encourages articulation of the concerns or desires they perceive, and it enables them to create value for themselves through data collection. The communication and information transfer between citizens and the municipality can potentially be carried out in collaboration with community police officers on a frequent basis (Taylor, personal communication, May 31 2022).

2. Public Interest Officer

Within governments and companies, the Privacy Officer has become an important job to ensure GDPR compliance within the organisation. Yet, privacy is not the only issue that is at stake in a smart city. Therefore, a Public Interest Officer should be put in place at the municipality who holds into account the interest of the people who are surveyed (Taylor, personal communication, May 31, 2022).

3. Political Parties

Anno 2022, the political parties that represent the public have included relatively little about ethical surveillance and data collection in their party programs. Political parties should include this more, in order to represent the people's concerns accurately. Next to that, the political parties in combination with civil organisations are ought to stir up the national debate concerning the limits of data collection (Webster, personal communication, May 27, 2022). This national debate should stimulate people's awareness of data collections and encourage them to form opinions on the matter.

4. FRAIA

FRAIA (the Fundamental Rights and Algorithm Impact Assessment) helps to map risks to human rights in the implementation of algorithms (Prins, personal communication, May 18, 2022). Currently, organisations have the option to make use of this tool, yet they are not obliged. I recommend that organisations should be required to use the FRAIA when using algorithms.

5. Data Commons

The municipality of Amsterdam should strive to implement and maintain the principles of Data Commons proposed by the Ada Lovelace Insitute (2020). These are design principles that stimulate collective and individual rights in a data-driven society. The principles are a translation of Elinor Ostrom's eight design principles (1990) for governing commons into the governing of data commons. The Data Commons principles stimulate the development and deployment of technology such that it serves citizens first and so that the collected data will be owned and governed as a common resource.

These recommendations aim for the construction of a reciprocal smart city that puts citizens first, respects their concerns and desires, and encourages them to form opinions on the process of data collection in the public space. Yet, the study has shown that the current state of the smart city Amsterdam does not correspond yet with these wishes, partly due to the orientation on transparency. Given the relevance of these themes, the current conditions of governance, with specific focus on the role of government regarding the citizens, needs to be reconsidered and improved taking into consideration the concept of reciprocity.

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Appendices

A. List of Experts Interviewed

Name Expert	**Organisation/Company**
Expert #1 (anonymous)	Assistant Professor on Regional Knowledge and Innovation Ecosystems at University of Twente
T. Turèl	Program Manager at AMS Institute
P. Manwaring	Co-founder of CitiXL
S. Smits	Project Manager Responsible Sensing Lab at Municipality of Amsterdam
Prof. Dr. L. Taylor	Professor on International Data Governance at Tilburg University
J. Sadowski	Senior Research Fellow in the Emerging Technologies Research Lab at Monash University
F. van Praat	Director Trusted Analytics at KPMG
D. Charité	Director Edge GovLab at Deloitte
Dr. F. Meissner	Assistant Professor of Urban Studies at the University of Leiden
Prof. Dr. W. Webster	Professor of Public Policy and Management at the University of Stirling
mr. V.E. Prins	Policy Officer Human Rights and Technology at Amnesty International The Netherlands

B. Interview Guide

X. Explanation of goals and purposes research

Urban life in Amsterdam has become increasingly digitised and datafied to the extent that any attempt of withdrawing from the digital space would require giving up on urban life altogether: from commuting, working, and personal relations. Most citizens of Amsterdam produce digital data through almost everything they do. Yet, citizens are often not aware that and what data is taken from them. What kind of data the municipality of Amsterdam collects about their citizens is unclear, and for what goal they use it also stays opaque.

This means that in the current form of the Amsterdam smart city, those who take our data can benefit from it without responding to the obligation of returning anything to the citizens.

Oftentimes, transparency is seen as the solution to this problem according to many Surveillance scholars. By offering citizens transparency, thus information, it enables the basic mechanism in privacy protection which is informed consent. You give information and the citizen can agree to this, creating a 'fairer' deal. Yet, opting out when you don't want to consent is impossible in the smart city, you cannot escape monitoring. Plus, giving adequate notice, thus transparent information, is impossible due to complex and opaque information flows and because information is gathered on group level.

So, I argue against the idea of transparency and try to look beyond this concept. By carrying out in-depth interviews with experts in the field, I hope to find a new approach.

X. Asking consent on recording the conversation. The conversations will be stored securely through Backblaze backups and transcribed with Amberscript.

X. Explanation of anonymity results. The results of these interviews will be published in a manner where it can not be traced back to individuals or organisations.

X. The interview will take approximately 45 minutes

Themes	Interview Questions
General information and work setting	Q1. Can you introduce yourself and explain how you became interested in smart cities?
Smart Cities and Citizens	Q2. What do you think of the current level of citizen participation regarding big data in smart cities?
Transparency and Informed consent	Q3. Transparency is often mentioned as a solution in the discourse on data cumulation in the public space. What is your opinion on this? Q4. The notion of informed consent doesn't work in the smart city. What is your idea on alternative solutions?
Reciprocity	Q5. What is your view on reciprocity? Q6. What do you think citizens would like to receive in exchange for their data? Q7. How could it become a practical tool?

X. Are there any comments you would like to share? Or do you have any suggestions relating to this research?

X. Thank you for the interview. If interested, I could share the research. Hoping to finalise it at the end of June.