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Public views of the smart city: Towards the construction of a social problem

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Abstract

Digitization and datafication of public space have a significant impact on how cities are developed, governed, perceived and used. As technological developments are based upon political decisions, which impact people's everyday lives, and from which not everyone benefits or suffers equally, we argue that 'the smart city' should be part of continuous public debate; that it should be considered and treated as a social problem. Through nine focus groups, we invited respondents to explore and discuss instances and dilemmas of the smart city. We investigated which interpretative repertoires they used to frame the smart city as a social and actionable problem. Following Blumer's and Gamson's theories on the social construction of problems and on collective action frames, we assessed respondents' discursive interpretations and their subjective construction of their senses of injustice, agency and identity regarding this subject. We find that – in the context of the city of Rotterdam in The Netherlands – citizens do not experience and consider the smart city as a social and actionable problem. Although they do associate the technological development of smart cities with potential threats, this does not change or constrain their sense of 'actionability', nor their behaviour, as they consider themselves to be power-less individuals regarding what, in their eyes, is a complex, elusive and inevitable situation they are confronted with. Strikingly, rather than specifically and contextually reflecting on smart city issues, respondents tended to express their concerns in the more general context of digital and data technologies invading everyday life.

Keywords

Smart cities, datafication, digitization, agency, interpretative repertoires, social problems

Introduction

Cities around the globe face enormous infrastructural and environmental challenges, such as accommodating increasing numbers of citizens; securing a healthy and safe living environment while facing issues of climate change; deploying sustainable means of transport; and the transition towards renewable energy sources. Many city professionals consider 'smartification', – the use of digital technologies and urban data – as essential to finding optimal solutions to all these issues. Collecting data and making algorithmically informed analyses of cities' environments, processes, inhabitants and visitors supposedly provide essential information and understanding to effectively address these challenges. In such 'smart cities', mediated by sensors, apps and algorithms, public spaces are increasingly turned into urban fields where the data of citizens and processes are harvested. Governing institutions and commercial organizations capture and analyze data on citizens' backgrounds, preferences and behaviours in order to use them for governing, service, surveillance and commercial purposes.

The move towards such smart cities takes place gradually, invisibly and without significant public debate (Couldry and Mejias, 2019; Diakopoulos, 2014). Various authors and advocates have lamented this lack of public debate, as citizens' everyday lives and environments are fundamentally affected by attempts to digitally and algorithmically meet urban challenges (cf. Gabrys, 2014; Kitchin, 2014; Vanolo, 2014). Not all individual citizens or collective urban actors benefit or suffer equally from

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these developments; it has been widely argued that those who are most affected have the least say in them (cf. Kitchin, 2019; Kitchin et al., 2019; Shelton et al., 2015; Shelton and Lodato, 2019). However, social problems are not objectively identifiable malfunctioning aspects of society; they are discursively identified among members of society, as we will elaborate below. To investigate whether and how the 'smart city' is considered as a social problem among the general public we organized focus group conversations with a wide variety of residents of the Dutch metropolitan area of Rotterdam, which has the political ambition to become an exemplary smart city (Gemeente Rotterdam, 2020; PBLQ, 2015). We used a gamified survey – consisting of a virtual city in which respondents are presented with challenges to identify smart city objects and dilemmas to share or not to share personal data – to spark conversations on the seemingly intangible topic of 'the smart city'. Our analysis of these conversations led us to conclude that while respondents do consider the digitization and datafication of public space problematic, they do so in the general context of digital and data technologies invading their everyday life. They find it difficult to articulate their concerns specifically with the way they experience their city, nor do they feel any urgency or agency to engage in collective urban action.

Theoretical background: The smart city and the social construction of actionable problems

In recent years, smart city innovations and digitally enhanced and data-driven governance practices have been advocated to address urban problems (cf. Luque-Ayala and Marvin, 2015; Rose, 2017). The most prominent critique regarding these practices concerns their technological deterministic assumptions and their neoliberal rationale, as technologies' underlying algorithms and business models appear to contribute to increasing polarization, exclusion and (power) inequalities (cf. Crawford, 2021; Eubanks, 2017; Kantayya, 2020; Morozov, 2019; Vanolo, 2014; Zuboff, 2019). In line with this, one additional critique is that smart city discourses and projects lack genuine and effective efforts to include citizens' perspectives, concerns and values (cf. De Waal and Dignum, 2017; Morozov and Bria, 2018; Shelton and Lodato, 2019; Wylie, 2018). As a consequence, scholars and activists advocate for smart city urbanism that empowers citizens to have an actual, emancipating and democratic say in the development and the governance of their urban environments (cf. that contributes to citizens' Right to the Smart City' (Anastasiu, 2019; Cardulo, Di Feliciantinio and Kitchin, 2019; cf. Joss et al., 2017; Rose, 2020; Shelton and Lodato, 2019). Corporate and government actors also respond to this criticism by expressing a stronger inclination to approach smart city development from a more citizen-centric perspective with the expectation that digital technologies could effectively engage larger and more diverse groups in smart city-making, democratizing urban processes (Foth, 2017).

Smart citizenship, citizen engagement and democratization have thus become highly sought-after values in the development of smart cities (cf. Cardullo et al., 2019; Cowley et al., 2018; De Waal and Dignum, 2017; Ho, 2016; Joss et al., 2017; McFarlane and Söderström, 2017; Shelton and Lodato, 2019). As a response to the call for increasing citizen-centricness in smart city-making, citizens have increasingly been invited to contribute to smart city development (e.g. intelligent infrastructure, city sensors, urban dashboards, smart meters, smart buildings and smart grids) through hackathons, living labs, citizen assemblies and citizen science and open data projects. However, citizen participation does not necessarily contribute to meaningful engagement in decision-making and democratization (cf. Irvin and Stansbury, 2004), because citizens' abilities and capacities to actually and effectively participate in the production of urban space are strongly dependent on the opportunities that their local political, socio-economic and geographical context provides them with in order for them to be equally represented, valued and recognized for their contributions (Fraser, 2005, cf. McFarlane and Söderström, 2017; Odendaal, 2021; Rose, 2017; Ruppert, Law, and Savage, 2013; Sampson, 2012). Nevertheless, universal – undertheorized, depoliticized and de-contextualized – figures of 'the citizen' are discursively deployed in order to justify smart city development and governance, despite the fact that imaginaries of inclusive and democratic smart city-making tend to leave smart citizens' actual problems (e.g. concerning local, social, economic and spatial inequality) unaddressed (cf. Dalton et al., 2020; Datta, 2018; Fainstein 2000; Joss et al., 2017; Kitchin, 2015; Mattern, 2017; Odendaal, 2021; Shelton and Lodato, 2019).

As Engelbert et al. (2019) have shown, activities to engage citizens in smart city-making are mostly rooted in a discourse of innovation, a strong belief in technical solutions to social problems, and are aimed at 'co-creating' these solutions rather than discussing the merits of data and technologies themselves or finding contextually relevant non-technical alternatives. In other words, citizen engagement in technology and data-focused attempts of 'solutionism' do not necessarily imply that the actual, local, complex, social and political conditions of urban life are addressed or dealt with (cf. Luque-Ayala and Marvin, 2015; Morozov, 2014; Van Zoonen, 2020; Wiig, 2016). Moreover, they are often the playground of an urban and technological elite and leave behind, for instance, the 2.5 million functional illiterate citizens in a country like The Netherlands. In addition, most co-creation discourse assumes collaboration between different stakeholders,

among whom citizens are a part, but overlooks the inevitable tensions and conflicts that exist around technology. A high-profile, controversial case, such as Sidewalk Toronto, contributes to an emerging contestation, as does the introduction of new digital technologies. In the Netherlands, for instance, there is growing public unrest and collective protest around the implementation of 5G networks and the obligation that Dutch municipalities have to comply with its placement on the local urban infrastructure following national legislation. In terms of civic engagement in and with the smart city, this means that some citizens are actively co-creating its constituting technologies and projects, while others begin to consciously debate, problematize and resist. In other words, we see the nascence of the smart city as a social problem. This necessarily opens up thinking about citizen engagement in the smart city and moves it further than assuring citizens of their individual rights (such as privacy and data ownership) and public consultation towards a more contextualized public debate on what smart city we want to live in, or, in other words, how to realize and maintain an inclusive, equal, just and sustainable urban environment (cf. Kitchin, 2019; Kitchin et al., 2019). Yet, conceiving (or perceiving) the smart city as a social problem and political issue requires particular conditions such as those that authors like Herbert Blumer (1971) and William Gamson (1992) have analyzed for other issues in their work on the construction of social problems. It is from this perspective that we have designed our research.

Blumer claims that the identification of social problems, as well as ideas and approaches of addressing them, emerge from processes of collective definition, rather than seeing them as objective conditions with a definitive objective makeup: 'It is this process which determines whether social problems are recognized to exist, whether they qualify for consideration, how they are to be considered, what is to be done about them, and how they are reconstituted in the efforts undertaken to control them' (1971: 305). Whether citizens conclude that they are in a position to actively (and collectively) address such issues depends, according to Gamson (1992), on their conviction that they are actually able to accomplish social change. He argues that movements that actually operate to address social problems are always organized around the so-called 'collective action frames', i.e. 'action oriented sets of beliefs and meanings that inspire and legitimate social movement activities and campaigns' (Gamson, 1992: 7). Gamson identifies three essential components of collective action frames: *injustice*, *agency* and *identity*. The *injustice* component is quite similar to what the definition of a social problem is. It refers to a sense of moral indignation expressed in forms of political consciousness. The *agency* component refers to 'the consciousness that it is possible to alter conditions or policies through collective action' (Gamson, 1992: 29). According to Emirbayer and Miche (1998), if and how

people feel a sense of agency depends on their evaluation of their current situation compared to their imagination of if and how that situation could and should be different, given their estimation of the barriers they think they will face and how much support they expect to be able to mobilize in present circumstances. The *identity* component in Gamson's collective action frames refers to 'the process of defining [a] "we", typically in opposition to some [adversarial] 'they' who have different interests or values' (1992: 29).

Gamson (1992: 110), as does Blumer, emphasizes that one should not expect respondents to have clear and objective and actionable representation of facts before they could imagine social problems: 'Ideas emerge and change, and are subjected to scrutiny and negotiation as events and conditions are interpreted and reinterpreted'. Currently, both the public and scientific debate regarding smart cities and urban datafication lack empirical detail on whether and how citizens consider datafication of public space a social and actionable problem.

Based on Blumer's and Gamson's theories, research on the smart city as a social and actionable problem should regard citizens' discursive interpretations and their subjective construction of their senses of injustice, agency and identity with respect to this issue. We will use these three concepts as key instruments to analyze citizens' views on the smart city and to identify whether and how they contain sources for the construction of an actionable social problem.

Data and analysis

The core ingredient of this research is a series of focus group conversations to investigate people's thoughts, concerns and perceived agency regarding smart cities. At the beginning of each focus group session, all participants played a smart city game, in which they were taken on a virtual tour through an illustrated smart city environment (Rijshouwer et al., in press). This survey functioned as a conversation starter, i.e. as a means to level the playing field for the group conversations. During this virtual tour, participants were challenged to identify data technologies and to either share or withhold their personal data when confronted with specific dilemmas.[1] As we both witnessed the playing of the game and the ensuing group conversations, we were thus able to trace how participants were developing, expressing, debating and adjusting their opinions and concerns regarding the smart city.

Rijshouwer et al. (in press) conclude from the outcomes of the gamified survey that both age and education have a significant influence on people's privacy behaviour in smart cities.[2] Therefore we invited predominantly younger and older respondents from varying educational backgrounds in our focus groups. We conducted our research in nine focus groups with an average length of 60 min (after respondents took the gamified survey, which, on

average, took 15 min). In total, we spoke with 91 people in four different age categories (lower school; 10–12-year old); middle school (13–17-year old); students (18–25-year old); and elderly (65+). Each individual focus group consisted of a relatively homogeneous group of people. Conversations took place at respondents' 'natural environments:' at their schools, universities, community centres and elderly homes. Respondents, except for school classes, were provided a €20 gift card.

Each of the participants, excluding the residents of the elderly home, played the gamified survey, followed by a group conversation (except for the individuals at the elderly home, whom we interviewed). We tried to let the conversation develop as spontaneously as possible, inventorying respondents' thoughts on, and experiences with the smart city; how these affect their daily experiences and behaviour; if they had any engagement in the proceedings with regard to the collection and application of (personal) data; and if privacy concerns would be the responsibility of individuals themselves, of the government or another entity.

We did see that various groups had different ways of engaging with the gamified survey: younger respondents, e.g. displayed a tendency to respond without thoroughly reading the questions and assignments, as opposed to the older respondents. Added to that we had a group of residents of an elderly home, who did not have the opportunity to play the game at all. We do conclude that this has not affected the outcomes of the game as 1) our intention was to identify as a wide variety of interpretative repertoires (IR) of whether and how respondents considered the smart city as a social and actionable problem as possible; and 2) that, during the focus group conversations, respondents appeared to hardly tend to refer to the gamified survey at all: they appeared to tend to discuss the increasing deployment of (data-driven) technology in society in

general, rather than elaborating upon concrete instances of the smart city.

Each focus group conversation was recorded and transcribed and coded in Atlas Ti. We coded the transcripts by open coding: while analyzing the group conversations we were specifically attentive to the discursive expressions that respondents used to state their thoughts and experiences regarding the smart city. These codes helped to reconstruct the *IR* from which respondents' drew their statements. IRs are shared – culturally and historically determined – patterns of language and narratives that people use to characterize, discuss and evaluate (i.e. make sense of) actions and events (cf. Potter & Wetherell, 1987 in Charlebois, 2015: 1). They are 'rhetorical devices that speakers use in social interaction to perform various discursive actions such as account, blame, justify, and in the process construct their social identities' (Charlebois, 2015: 2).[3] We aimed to achieve 'discursive representativity' rather than demographical; i.e. the repertoires that we reconstructed need to be representative rather than the people.

Findings

We examined the IRs for their articulation with the components of collective action frames – injustice, agency and identity – and we structured this section accordingly (see Table 1).

A typical conversation occurred when we were talking to an elderly respondent at his care home in Rotterdam. Sitting in his wheelchair, outside in the sun, he greeted a friend who came by. 'Come and join us for the research', he said, 'about technology in the city'. The man waved and said he had no time. 'He is afraid', our respondent commented, 'that he doesn't give the right answers'. Similarly, at two other meetings in community centres our contact

Table 1. Structure of the empirical section; plot of the repertoires we identified on Gamson's collective action frames.

Collective action frames	Interpretative repertoires (IR)	This repertoire is characterized by references to
Injustice	IR1: 'Big Brother is watching us'.	Examples, experiences, and scenarios of potential harm and dystopian precedents.
Agency	IR2: 'What can we do? – It is inevitable'.	Feelings of powerlessness and impotence with systemic and personal causes.
	IR3: 'I am willing trade data for…' and 'We do have strategies…'	Arguments to engage in sharing personal data and personal strategies to safeguard privacy.
Identity	IR4: 'Who are we to discuss and decide on these matters?'	Respondents considering themselves as too uninformed, unqualified, and unequipped outsiders regarding datafication practices.
	IR5: '"They" collect data on us'.	Concerns regarding 'others' collecting data on 'us', without us knowing or having any influence on that.
	IR6: 'We have nothing to hide. We are willing to compromise our privacy, so "they" ("others") can be caught'.	Arguments why it would be ok to use data to surveil 'others'.

persons were disappointed that few people show up, despite their earlier made promise: 'They are probably intimidated by the university and fear that they don't know enough to be of help'. This hesitance is not simply a matter of age or social class. In our children's focus groups, there was similar shyness and insecurity, as there was among some of our student groups. It was variously expressed by the words of Rita and Blossom, two well-to-do women who volunteer in a cultural centre, and whose views are fairly common: 'We are but simple souls, this [subject of the smart city] is not on our horizons at all, we have other things that bother us' (cf. IR4).[4]

In this context of reticence and hesitance, the game proved to be an excellent conversation starter. While playing – independently, but in close proximity of each other – respondents tended to ask each other for help in identifying data points; they indicated where they thought that they were doing well or whether they faced difficulties or dilemmas; and they shared their arguments for making certain choices over certain challenges. After that, they often spontaneously started discussing data collection and privacy, mostly based on personal experiences and references to the news. The game thus sensitized our respondents to the research theme and helped them realize that they actually did know about data and technologies in public space. A whole range of examples came up in all focus groups, from personal observation and experience (e.g. encounters with CCTV cameras and with apps and services requiring personal and geolocation data) as well as from news and popular media consumption (e.g. the Cambridge Analytica scandal; Dave Eggers' novel *The Circle*; series like *Black Mirror*; *Hunted*,[5] and *Langs de Oevers van de Yangtze*;[6] news about identity theft and high profile crimes that were solved through data-informed forensics). Importantly, the conversations often moved away from the city as the focus of the research and circled more generally around social media, online shopping and cybercrime, mostly leading to general and undefined abstractions, accompanied by the sigh: 'they know everything about us'. Strikingly, although respondents exhibit a tendency to reflect generally and broadly upon developments in data and tech, they do not bring specific local urban problems to the fore.

In the following sections, we will elaborate and analyze the IRs about the smart city that we reconstructed from respondents' conversations and arguments.

Injustice – The feeling of being surveilled and manipulated

The injustice-related repertoire called 'Big Brother is watching us' (IR1) concerns respondents' indignation regarding companies' and governments' practices of collecting data on all aspects of citizens' lives, without their consent and without them being informed and able to

grasp the sheer volume of that, nor being able to oversee the (potential) consequences.

IR1: 'Big Brother is watching us (however, this does not affect us too much)'. Many respondents refer to mostly negative examples and personal experiences of data collection to demonstrate their familiarity with the concept and practices of smart cities, and to discuss their potential harm. They refer to CCTV cameras and how these are increasingly used for surveillance purposes; to (location) data that they are forced to share via smartphones and personalized chip cards; to how their bank accounts and health records have become digitized and how these might be accessible to hackers; to files, records and behavioural data that companies, public institutions and governments keep to potentially manipulate their clients, subscribers and citizens; to scams and scandals; and to China's social credit system. However, although respondents graphically share examples of how companies and authorities collect, combine and analyze data and how that could be invasive and potentially damaging, they do not necessarily grasp how this actually works. As Jacob, a moderately educated man in his seventies in a neighborhood centre, puts it:

I think we do not know…, none of us knows what they…, what [data] they have and what they do with it, and … that is totally unknown, actually.

Respondents frequently express their concerns for what they think could possibly go wrong when seemingly meaningful but harmful links are found, or if personal data are revealed to institutions or people that could misuse or misinterpret them. Georgio, an inhabitant of an elderly home with a turbulent past, formulates this as follows:

It is of course fantastic that [informed by data] the police can prevent all kinds of crimes, or that evidence can be collected. But what if I am sitting here on this bench, smoking or drinking coffee, and the person I am having a nice chat with is a drug dealer? Would that immediately make me a suspect?

Correspondingly, respondents argue vividly that the interpretation of records of personal data, such as one's past behaviour, occupation and residence, could systematically affect people's chances in life, such as one's opportunities to get a job or a loan. Various respondents express fear that the practice of increasingly collecting and combining data would result in surveillance or totalitarian state. To emphasize their point, they refer to World War II, current authoritarian regimes and China's system of social credits, based on facial recognition. Nonetheless, respondents have a hard time making up their minds regarding this topic. Jacob, e.g. remarks that he has mixed feelings about camera surveillance. He does consider it a violation

of his privacy, but at the same time, he sees the advantages of the police having access to camera footage to identify illegal practices. He refers to a recent rape case in Rotterdam, in which the perpetrator was captured since his involvement was irrefutably established based on CCTV images: 'So I really can't just say whether I'm for or against it'.

Despite fairly explicit characterizations of how datafication causes real and potential forms injustice, most respondents do not consider taking measures or changing their behaviour as a consequence, for several reasons. Firstly, respondents seem to appreciate data collection and surveillance practices for the sake of benefits and convenience (see also IR3 in the next section, which concerns respondents' arguments to engage in sharing personal data and personal strategies to safeguard their privacy) and as they buy into the promises of increased safety and eradicating criminal offences. Secondly, most of them believe that data collection practices do not directly affect them personally because they think they have 'nothing to hide' (this returns in repertoire IR6 in the next section). Jacob, e.g. does not share in the seemingly common indignation regarding China's facial recognition system. Struggling how to put it, he says:

> Well, yes, no, I do think, yes… Who is exactly bothered by that? Jens, the activist social worker at the table, a bearded man in his sixties, responds: 'Big brother is watching you!' while his brother, Edward, a jobless printer, adds: 'Jacob, do you realize that they don't get a mortgage when they jaywalk five times?' His friend Vincent, a retired ICT professor, argues: 'That's not what you want, do you?' Jacob: 'No, no, of course not. One wants to have a mortgage. But, well, if you know it upfront, you might make such a mistake only once…'

Thirdly, they believe that they have little agency with regard to the omnipresent and powerful data collecting public and private entities. This is an argument that appears in the following section, in IR2, as well. Strikingly, when in the gamified survey respondents are asked about their trust in the government, three international students make a distinction between the current Dutch political context they live in, and the regimes of their countries of origin (Italy and India), as they think citizens' privacy and rights are less protected in their home countries. They figure out that in other places and in other times, they would have to worry more about their implications. The following conversation discusses this:

> Arvind: 'We would be sitting in Shenzhen or in Beijing today, my answers would be the other way around. Like I would run away from [camera surveillance]….' Interviewer: 'So, it really depends on the context and the [political] situation?' Giovanni: 'Yeah'. Interviewer: 'A

city full with cameras in China is different from a city full of cameras here…' Stefano: 'That's for sure'. Arvind: 'Like here, a city full of cameras would make me feel safe'.

Nevertheless, various respondents express a fear of misuse of their data (without being too specific on what that would entail) and violations of their privacy, as they could imagine that current instances of datafication of public space could be a prelude to regimes in which their behaviour is more closely scrutinized. Although a number of respondents emphasize that data collection should preferably be 'not as invasive as in China', most do not seem to consider this at present as a real threat that they should act upon or organize around. The elderly women in the cultural centre discuss how they increasingly encounter surveillance cameras at their neighbors' private homes. Although they think they have 'nothing to hide', they do consider this a violation of their privacy. Nevertheless, they leave it unaddressed. Rita: 'I don't want to get into an argument'.

So, although respondents, in line with the injustice frame, do convey senses of discomfort, fear and indignation regarding practices of datafication – which they conceive of an inevitable 'big brother' watching them – they hardly articulate this as an actual social and actionable problem. Although respondents are specifically asked to reflect upon urban datafication, they discuss individual and often personal matters and fail to recognize the spatial and hence collective context in which smart city practices take place. They legitimize their relative resignation regarding this issue by stressing the relative latency of this development, by referring to the benefits of data-collecting practices that they do enjoy, and by stressing that they are not worried about how it will directly affect them and that they perceive to have hardly any agency.

Agency – Feelings of powerlessness, as well as personal considerations and strategies to share or not to share data

In this section related to respondents' articulations on their sense of agency regarding the smart city, we present two repertoires. The first one demonstrates respondents' feelings of powerlessness and impotence. When asked for their sense of potential active involvement, respondents state they lack agency. They think that 'they' (i.e. governments and companies, but mostly undefined entities) keep records of them, by which they are profiled, targeted and influenced, without their knowledge, consent and without any opportunity to be in control. Jerome, a student in his early 20s who takes a digital marketing course with a group of young people who failed at other educational institutions, asks out loud:

To what extent do I have a free will? […] We all think we make a lot of decisions, but I strongly feel we are… our behaviour is controlled by advertisers and by, uhm, a lot of things […] Of course it is our own responsibility, but I think, as individuals, we are powerless against data collection. His classmate Ali agrees: 'Indeed'.

The second repertoire in this section concerns respondents' discourses of their arguments, strategies and tactics to share or to avoid sharing data with third parties.

IR2: 'What can we do? – It is inevitable'. Although respondents demonstrate knowledge of urban datafication practices and express their worries about them, most are not protective of their personal data; either because they do not bother or because they do not feel in control of it. The women at the cultural centre, who also volunteer at the library, discuss *The Circle* by David Eggers. They consider this book, on the potential negative consequences of excessive datafication and social media use, to be an eye-opener. Nonetheless, just like other respondents, they seem to undergo datafication with a certain resignation because they consider these issues too far out of their reach to be able to have an influence on their course. Those who share their feelings of powerlessness believe that sharing personal data are default and that they lack alternative options. Eva, a 13-year-old student unfolds her vision of the future:

To be honest, I think that in 10 years it will not be like this anymore [that there are places where one doesn't need to share their data]. It is actually already becoming harder not to share things. Everywhere you go it is a bit… one has to make a serious effort not to share personal data. Maybe only if you put some extra money on the table…? I don't know, something like that.

Other respondents express the feeling that noncompliance with governments' and companies' requests for their personal data will exclude them from their ability to use their services, such as the discounts on public transport that disabled, students and elderly are entitled to. The same holds for registering newly bought products in order to make them work. Ali, who appears to have a fatalistic view on data collection: 'You are not obliged to do anything, but if you do not agree to the conditions, you won't receive the service'. Rita, referring to her work as a librarian, aptly illustrates it as follows:

Take the library for example. Imagine you don't have much money. The library is meant as a service to the people, especially for low-literate people. It's free. Kids from, you know, refugees, all get a free subscription, but then I think: 'You have no choice but to be registered'.

Related to this, respondents find themselves using tools, systems and apps that violate their privacy for the sake of convenience and under the pressure of their social networks. They convey that they think that it would be hard or nearly impossible to change their conduct of sharing personal data, as they feel they have become too accustomed to do so, and because the benefits they receive do outweigh the additional efforts of protecting their privacy (which will be discussed in more detail in IR3). When provided with examples of how one could protect one's privacy online and in public space, via things like cryptography, makeup and hairdo, Rita responds, unbelievingly and with a rhetorical question: 'Will we be spending time on that?' Most respondents do not believe that many citizens would ever make an effort to live more anonymously either. They think they lack the patience and the intellectual and technical capacities to take matters into their own hands: 'Only experts are able to defend their privacy'. Some see it as a responsibility of the government to protect citizens' data and their privacy, but they doubt government's capacity and trustworthiness at the same time. Morris seated in a wheelchair in front of the elderly home: 'They are being hacked themselves. And they made many mistakes with people's personal data as well'.

Jens and Anna, visitors of a community centre in her early 50s, lay the blame for citizens 'losing' their data with citizens themselves:

Jens: 'The fact that citizens excessively share data should not be blamed on the systems, but on carelessness of people themselves'. Anna: 'Exactly! Us…, those who share information…' Jens: 'Those who operate the systems. They share everything. You can try to make systems as secure as possible, but they fail as long as people remain sloppy and lazy…'

The ubiquitous data registering that respondents experience in all kinds of interactions with companies, governments, educational institutes and relatives makes them conclude that it is no use to oppose datafication practices or to be protective of one's data, as, as many respondents state: 'they know everything already' (which is closely related to IR5, which is about corporate and governmental entities collecting data on citizens, without them being aware or being in control of that). A number of respondents remarked that they are hoping that their resignation and laxity do not negatively affect them.

IR3: 'I am willing trade data for…' and 'We do have strategies…'. Despite the feelings of powerlessness discussed in the previous section, respondents do express a willingness to share data in particular cases. Joshua, one of the marketing students, expresses how surveillance contributes to his confidence:

> I do not mind at all being filmed in public space. It provides me with a sense of safety, knowing that a potential attacker will almost surely be caught.

Anna argues that she would not want to lack the convenience of a personalized travel card and of location-based apps and services:

> I think it's super handy. If the balance on your card is less than ten euros, it will automatically add another ten euros. I never have to scan or charge my card. […] And my phone knows everything too. When I come home, it says: 'Hello, you're home', and when I arrive at work, it automatically turns off the sound. […] My phone will probably be scanned everywhere by Google Maps. A lot of people might [argue] that one could switch that off, but why would you… [she does not see the point of that].

Besides that, she happily enjoys the benefits of being tracked and profiled:

> I Googled, because I had to get an implant and suddenly this ad comes up on Facebook: 'Max Dental Center, buy now, get a discount. The second for half the price'. Well, I went there to have a look and it was a really good clinic so I took the offer and it saved me a lot of money.

However, respondents in every age group also demonstrate that they apply various strategies or tactics to keep their personal data from those who want to collect them. They, for example, use anonymized chipcards for public transport; use fake ID's, fictitious names, birth dates and special email addresses (which the students call 'a spam account') when they register online; have their goods delivered at pickup points and switch off their Wi-Fi and GPS when they are on the street – all to protect personal data and stay unknown to data-collecting companies or governments. Other strategies are more focused on protecting their online privacy, e.g. by (engaging in efforts to) abstaining from using social media; using alternative browsers; avoiding accepting cookies; filling-in random and fake answers to questions (which they call 'scrambling'); having a sticker at the cameras of their computers; and switching off the microphone on their mobiles. Some respondents, mostly students, really take pride in 'beating the system', e.g. by constantly creating new accounts. However, Jerome indicates that this does not necessarily lead to the feeling of being in control:

> I honestly don't know how many accounts and how many passwords I have registered. I haven't got any overview of that. That's not very relaxed if you start thinking about it.

Strikingly, some students admit to actively share their data (submit themselves to institutions' data collection practices;

engage in self-surveillance) as they think that not sharing data could be regarded as suspicious.

In this section, we explored whether respondents deployed any repertoires via which they expressed any sense and capacity to intervene in or to alter aspects of either public or private data collection they consider problematic. However, we mainly encountered expressions of resignation and powerlessness, as if the loss of personal data and privacy were something that 'just happened' to respondents. However, respondents do not seem to experience a sense of urgency, nor to crave for any agency to address any undesirable aspects of urban datafication, as they, for the time being, enjoy the convenience and benefits of these practices, and as they deploy some fairly limited protective strategies to protect their privacy. Again, respondents consider protection against excesses of datafication as their individual responsibility, rather than a social problem that must be addressed collectively.

Identity – Unentitledness and common enemies

Under identity, the third collective action frame, concerning the definition of a 'we' who collectively oppose 'them', we constructed three repertoires. The first (IR4) concerns discourses of respondents who do not consider themselves as entitled individuals, nor as an empowered collective to oppose tendencies of invasive data collection. In IR5, we present the repertoires we constructed on respondents' references to 'they', abstract entities who unrestrainedly collect data on 'them'. The third repertoire in this section, IR6, concerns respondents' justification of their acceptance of increasing surveillance practices. Here, they argue that this serves to monitor and confine another 'them': citizens with bad intentions.

IR4: 'Who are we to discuss and decide on these matters?' As described in the introduction of this empirical section, most respondents do not feel they are entitled to discuss, let alone to actively engage in matters of datafication of public space. They reveal that they experience a certain fear of being (too) uninformed, unqualified and unequipped to relate to these topics. Although most respondents seem to be interested in the subject and appear to have formed an opinion about it (via news items, television shows, books, hearsay evidence, *et cetera*), they consider themselves no more than passive *individual* stakeholders (so not a 'we') as opposed to 'them:' tech monopolists, authorities and experts.

IR5: '"They" collect data on us' (cf. IR2). Respondents think that most of their online activity is registered by governments and commercial agencies, who combine all accessible data sources to profile, to surveil and to target citizens ('Everything is registered', 'Everything is linked'); besides that, they think that all their moves in

public space are registered via the logs of their mobile phones' GPS, their bank transactions, their transport details and CCTV systems. They regularly use the abstract pronoun 'they' to indicate who collects their personal data: '"They" know "everything,"' is probably the most common expression heard during the focus group sessions, used by respondents to indicate that companies and authorities keep detailed records of where people are, where they live, where they work, who they know, *et cetera*. Ali expresses this feeling of powerlessness as related to 'them' as follows: 'I do value my privacy, but I'm sure we don't have any. I would not bother to take a detour in order to avoid being surveilled as I know: They know 'everything about me anyway'. Rita refers to a famous Dutch physicist, who used the metaphor of Gulliver to explain the consequences of increasing datafication: 'He was completely wrapped in wires, which could never be untangled again. And I think that's the situation here; that they know everything about you'.

'We' identify potential harms, and 'we' complain about our impotence regarding practices of data collection of 'them', the collective enemy, as 'we' somehow dislike this happening without our consent. However, 'we' do not think of, nor engage in collective action and opposition: 'we' continue to live our lives, as 'we' do enjoy the benefits of 'their' data-based services (IR3), and as 'most of us' feel powerless individuals as opposed to 'them' (IR4).

IR6: 'We have nothing to hide. We are willing to compromise our privacy, so "they" can be caught'. Various respondents seem to consider urban datafication (and especially surveillance) practices as a dilemma, as, in many instances, they engage in efforts to formulate where to draw a line between when and where to share or protect their personal data. In the *Injustice* section, a respondent was quoted who considered camera surveillance to be intrusive, but, on the other hand, was content that it helped to get a rapist convicted. Similar examples resonated with other respondents, who, foremost, consider urban data collection as a means to civilize people and to keep them from committing crimes, and, if that fails, as a means to find them and to sentence them. At the community centre, respondents discussed how a missing minor was retrieved via the analysis of chats and, as they presume, via CCTV footage:

> Everyone was looking for that girl, and, because of that, they quickly found out that she was being held at the Hilton. So in case of theft, missing, burglary, you name it, it has a lot of advantages that there are cameras everywhere in town.

In many instances, respondents make a clear distinction between 'normal people' and people with bad intentions or 'criminals'. Apparently, they are willing to compromise everybody's privacy for the purpose of surveilling and curtailing the latter. Arvind:

> I think those cameras act as a deterrent for people who have malicious intentions. […] It is not for the people who are good citizens. […] I would love if we had […] cameras everywhere […] that would actually identify the people who are, let's say, throwing trash on the streets, wherever they can, or who are peeing on the streets every day, you know? Things like those that would make me happy.

Respondents have apparently no concerns regarding increasing surveillance practices in public space, as, so they claim, they themselves have 'nothing to hide'. As 11-year-old Mark puts it:

> 'Well, if you're trading illegal stuff, like drugs, it will be observed. However, some people value their privacy and don't want to be filmed'. Interviewer: 'But those who are dealing in drugs don't want to be filmed either'. Mark: 'Yes, that's why… [surveillance systems need to be default]'. Interviewer: 'What's your position on this?' Mark: 'I don't care. If you don't do bad things it's okay'.

Jacob argues similarly:

> 'I think that we all agree that [surveillance practices have] a lot of benefits, or that it is just important, that, on a daily basis, certain signals are registered, for example regarding people who are after someone else, or who engage in criminal practices and the like: their license plate is registered; their whereabouts are known… I don't think anyone will object to that… yes those criminals themselves of course, but an average Dutch person will not object…'

In the community centre and the cultural centre, we find (elder, activist) participants who make an effort to address the fact that it would be unethical and illegal to deny (certain groups of) people their right to privacy.

Identity is about identifying and recognizing shared values and interests among stakeholders (as opposed to those of adversaries) in order to be able to collectively address a social problem. Strikingly, despite the identification of some abstract, invisible, but ubiquitous and omniscient entities that target them and their data, 'we' remains undefined and underdeveloped. And although 'they' are considered with a certain amount of resistance and mistrust, their practices are warmly welcomed as well, as they serve as allies to control and curtail 'others' who seem to have things to hide.

Discussion and conclusions

Smart city policy makers, technology companies and activists generally claim to strive for more citizen-centric,

inclusive and democratic cities. However, such citizen inclusion is based on 'a faith in human agency and human resistance' (Rose, 2020: 526) and on an assumption of seamless co-creation and ignores the local social and political tensions that digital and data technologies are increasingly evoking (Van Zoonen, 2020). We identified the nascence of a possible social problem, the maturation of which will depend on its construction as a social and actionable collective concern. Our focus group conversations demonstrated that while participants did recognize and express issues and concerns with respect to digital and data technologies *in general*, they hardly ever articulated those explicitly within their everyday urban context. Nevertheless, the six IRs we constructed from the focus groups do indicate that respondents identify smart city developments as inevitable (IR2) and potentially harmful (IR1). They consider themselves as unentitled (IR4) and powerless subjects (IR2) towards 'them' – data-collecting, surveilling, profiling, targeting and nudging governments and corporations (IR5). However, for now, their concerns (senses of *injustice*) do not seem to ignite much (discourses or repertoires of) individual behavioural change, nor collective action or rebellion, as, for now, they rather enjoy the benefits from digital and data technologies (IR3, 6). So, following Blumer's and Gamson's theoretical frameworks, we find that, regardless of concerns and worries, the smart city does not provide sufficient reason or motivation for collective action to individual citizens in the local context we studied.

Respondents do, frequently and easily, refer to actual and potential dangers and harms caused by (general) datafication practices (*injustice*). However, they lack a sense of *identity* and *agency*. First of all, they do not feel entitled and knowledgeable enough to address and challenge these developments (*identity*). Besides that, their assessment of the situation does not match the 'recipe' for *agency* that Emirbayer and Miche (1998) provide, which is driven by an (ideal-typical) imaginary of the future, which would be a significant improvement of the current situation, and which realization depends on positive estimations of opportunities and abilities to overcome barriers and to mobilize support in present circumstances. First of all, in their assessment of the present situation, respondents combine repertoires which together show their ambivalence: they identify signals of skewed power relations, inequality and oppression, but these do not seem to outweigh the convenience and benefits they, as individuals, experience. The fact that most are currently personally hardly affected by the negative aspects of datafication might make that they hardly question the present collective situation. Secondly, the agency is, according to Emirbayer's and Miche's (1998) definition, fed by an image of a future (an alternative society) worth striving for. Respondents lack such a future vison (cf. Kitchin, 2019). They seem comfortable in the subject position of a passive bystander or consumer, who,

somewhat uncritically seems to buy into the rhetoric of smart city officials and corporations, as they reproduce the discourse that it would be unavoidable to implement ubiquitous datafication in order to meet urban challenges.

The findings demonstrate that the majority of our respondents relates purely from an individual and personal point of view to the datafication issues discussed. They clearly do not conceive the issues as collective issues, which resonates with studies that conclude that smart citizenship is encapsulated in neoliberal frames and power structures (cf. Cardullo and Kitchin, 2019; Engelbert et al., 2019; Rose, 2020). That our respondents take a '(neo)liberal', rather than a public, collective ('republican') position (following De Waal and Dignum's (2017) conceptualization of smart citizenship), could be caused by the times we live in and which are characterized by individualization, responsabilization and decrease in collective organization and collective action. Additionally, respondents provided us with a local, contextual explanation for that as well: some of them explicitly evaluated smart city developments referring to the Dutch political space, which they considered to be relatively comfortable and safe, which supports them letting individual benefits of convenience prevail over feelings of injustice and collective values. The fact that IRs concerning collective values appear to be absent in our focus groups, underscores that, among Rotterdammers, current manifestations of the smart city are not considered as a social problem. The fact that the smart city is mainly considered as a privacy issue, and that privacy is almost structurally considered to be a personal concern, could be considered as a clash between private and public values (cf. Baibarac-Duignan and De Lange, 2021): our respondents appear to be prepared to deny themselves as well as other members of society (potential criminals) their rights on privacy for the sake of promises of security (cf. Datta, 2018), which indicates that there is hardly any collective awareness of the fact that the way in which we deal with the smart city determines the functioning and quality of our public sphere and space and, with that, how our democratic rights are safeguarded and our collective futures formed. Strikingly, the respondents themselves treat the smart city as a politically neutral technological construct, which minimizes the opportunities for frictions, controversies and contestations within the public debate, whereas precisely conflict and struggle are considered the essential ingredients of democratic city-making (Baibarac-Duignan and De Lange, 2021; Fraser, 1990; Lefebvre, 1996 [1968], 1991).

Based on our research we conclude that some reservations have to be made regarding the expectations of activists, critical scholars and smart city officials that smart citizenship and citizen engagement could positively contribute to more democratic and 'genuinely humanizing' smart cities (Kitchin, 2019). First of all, respondents appear to experience hardly any agency regarding the

smart city, for which we provided a few potential explanations above. Secondly, respondents reflected upon the potential issues in generic and personal terms and did not visualize urban datafication practices in a collective nor local spatial context. One could argue that providing respondents with examples from their actual living environment, rather than with a relatively generic and illustrated representation of the smart city as we did through the gamified survey could lead to less generic responses. However, from our research through the so-called 'data walks' we draw similar conclusions, i.e. that respondents appear to relate to the smart city mostly in more general terms of the increasing use of (data-driven) technology in society (Van Zoonen et al., 2017). Although these outcomes make this research at first glance seem rather general and elusive, they indicate the importance of new theoretical, methodological and practical alleys in smart city research and governance to meet the ideals and ambitions of democratization of smart cities, taking the actual local political, socio-economic and geographical context – and hence citizens' opportunities and capacities to be equally represented, valued and recognized – into account (Fraser, 2005). One of its objectives could be to stimulate the development and sustainment of local environments and interventions to convey that smart city development reflects political and collective issues and to provide citizens with actual agency. We therefore argue for a truly collaborative way of smart city-making, in other words for 'Governance beyond Participation'.

Authors' Note

Data and materials (transcripts of focus group conversations) are available on request.

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Notes

1. In another study the authors have developed and used this gamified survey to assess respondents' knowledge, privacy concerns and behaviour concerning the smart city (see Rijshouwer et al. in press) on the statistical analysis and the outcomes of this gamified survey.
2. They find that the higher one's education is, and the more smart city technologies one is able to identify (a proxy for data literacy), the less willing one is to share personal data, stating that 'young people have a higher data literacy than older people and […] well-informed younger groups share less data than their less-informed older fellow respondents'.
3. In these discursive interactions participants pragmatically shift between various social identities or the so-called *subject positions*.
4. The respondents, who we refer to in this paper, appear by an alias. Quotations, except for those of the international students, are translated from Dutch into English.
5. A Dutch reality show about people trying to escape the police, who are deploying all kinds of monitoring and surveillance technologies to hunt them down.
6. A well-watched Dutch TV documentary series about China, in which one episode was dedicated to the Chinese social credit system.

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