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Where's Wally? In Search of Citizen Perspectives on the Smart City

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Abstract: Academics, technology companies, public administrators, journalists and marketing agents have celebrated, critiqued, bought, sold, reimagined and redefined the smart city concept. Despite the rise in research and news articles regarding the smart city, perspectives of smart city citizens have been noticeably absent from this growing discourse. The authors' recent systematic literature review of peer-reviewed publications highlighted that citizen perspectives on what a smart city should and could be are largely absent. In the few exceptions found by the review, the incorporation of citizen perspectives was superficial at best. The primary purpose of this paper is to address that absence of citizen voices. This paper details a research project that explored how citizens in London, Manchester, and Glasgow responded to the smart city concept. Participants were asked questions regarding their prior knowledge of the phrase 'smart city', their thoughts relating to what it means for a city to be smart and what a 'true' smart city might mean to them. The paper compares and contrasts the findings from the research with the dominant rhetoric about smart cities, as identified through the systematic literature review. Furthermore, the paper offers a critical assessment of the values underlying the phrase 'the smart city'. It aims to deconstruct some of the expectations that citizens hold for their cities' politicians, policy makers, planners, academics, and technology companies. We argue that these perspectives from citizens can be used to inform responsible development, spatially and socially inclusive technologies, and ultimately more resilient cities.

Keywords: smart cities, participation, community-based development, local knowledge.

1. Introduction

The smart city is booming. In the past decade, research and news stories about the smart city have become pervasive. Academics, technology companies, public administrators, journalists and marketing agents have celebrated, critiqued, bought, sold, reimagined and redefined the smart city concept (Hollands, 2008 & 2015; AlAwadhi & Scholl, 2014; Greenfield, 2013). However, in spite of this, many recent research papers have identified a lack of clarity about what it means for a city to be smart (Hollands, 2008; AlAwadhi & Scholl, 2014). Although many smart city definitions involve the augmentation of urban spaces and places with technologies, there are a variety of interpretations about the function, form and manner of implementation they should, could or must take. While a vast amount of work continues to be conducted under the banner of the smart city, some scholars have recently been questioning its scope, ideology, and its limited involvement of local residents (Hollands, 2015; Kitchin, 2014; Nam & Pardo, 2011). A recent systematic literature review of technical, peer-reviewed smart city publications found that citizen perspectives have been largely absent from the smart city discourse (Mullagh, Thomas, Wang & Dunn, 2015). In the few exceptions found by the review, people living in smart cities were only invited to contribute to the design of technologies that had already been conceived of by academics, technology companies or governments (Ibid.). When citizens were involved in that technology design process, they were only invited to contribute via the use of a very limited set of methods, including focus groups, interviews, and surveys (Ibid.). True co-design, which invites participants to design with scholars and practitioners from the outset of a project, was entirely absent from the literature (Ibid.). The limited involvement of citizens, as identified in the review, carries serious implications for the future of the smart city. Numerous academics have already highlighted the necessity of involving citizens in urban development projects, from Lefebvre (1991) to Harvey (2003) and Jacobs (1961) to Soja (2011).

The primary purpose of this paper is to describe a short research project carried out in early 2015, which we believe is the first attempt to bring citizen voices into the smart city research paradigm. The paper describes and discusses the project that explored people's familiarity with and impressions of the smart city concept in three of the United Kingdom's smart cities: London, Manchester and Glasgow. The project found that most participants were unaware of what a smart city is, but many were willing to use their familiarity with the term 'smart' to guess what a smart city might be. The project also explored citizens' visions for future smart cities, during which three clear themes emerged: the role of digital technologies in future smart cities, the importance of privacy, and the value of community. We discuss these findings in greater depth below, and argue that these types of citizen perspectives can be used to inform responsible development, spatially and socially inclusive technologies, and ultimately more resilient cities in the face of the many challenges posed by ongoing, rapid urbanization.

The paper is structured as follows; we present the methods used during the project in section 2, highlighting some of the challenges we encountered while undertaking this project. This is followed in section 3 by a discussion about the results of our research. We discuss the implications of the results in terms of the insights we drew from the project, as well as the weaknesses and strengths of the project. The paper is concluded in section 4 by outlining questions that were left unanswered by the project, and presenting an overview of another stage of this research project, to be carried out in the Fall of 2015.

2. Methods

This research project was initially designed as an ethnographic exploration of people's familiarity with, and impressions of, the smart city concept. Two ethnographers carried out the fieldwork over the course of two months in three smart cities: Manchester, London, and Glasgow. We initially intended to carry out semi-structured interviews with local residents who we planned to approach in the street. We also intended to carry out an ethnographic study of people experiencing the smart city through making observations about how citizens were experiencing, living in, and interacting with the smart city. However, we encountered two primary obstacles. Firstly, we had difficulties recruiting participants on the street, in part because many people claimed to be too busy or disinterested in the topic to participate. Ultimately, we did not attract as many participants as we had hoped. Secondly, it also proved difficult to make observations about people interacting with the smart city, as it is an intangible concept, with no concrete manifestations within the city itself. Although a few 'smart parks' and 'smart' municipal service systems exist in the cities being studied, we found it difficult to observe people interacting with the broader smart city. As a result of these obstacles, we shifted our research efforts towards collecting rich data from people who were willing to engage in conversations on the street.

In total, the fieldwork amounted to thirteen semi-structured interviews, each of which lasted between seven and thirty minutes in length. Our participants consisted of eleven men and two women; five of our participants were from Glasgow, four were from London and four were from Manchester. Our participants had lived in their respective cities for varying lengths of time, ranging from less than 1 year to their whole life. They were start-up founders, healthcare support workers, web developers, managers, university students, office administrators, artist, and designers. During the interviews, we asked participants about how they got around their cities, whether or not they knew about the notion of the smart city, what their imagined vision for a future city might be, and how they believe they should be involved in city development. Three researchers transcribed the interviews, compiled field notes, and cross-examined the data for recurring themes, presented below for further discussion and exploration.

3. Results and Discussion

Our study was driven by two primary exploratory questions: 1) how do citizens living in a smart city define the concept of the smart city? and 2) how do citizens living in a smart city envision future smart cities? We present our study's results below, followed by a discussion of the study's implications and limitations.

3.1. Citizen perspectives on the 'smart city'

Our participants were predominantly unfamiliar with the phrase the smart city. Only three participants said that they had heard the phrase before, and each thought they had encountered the phrase through their work. Although two of those participants hesitated to offer their own definition of the concept, the other explained that he thought the smart city was 'about interconnected services and devices, [such as] smart meters in homes and hotspots and bus trackers.' He did not mention any specific companies or academics involved with smart city development. Four of the ten participants who were unfamiliar with

the phrase offered to guess what a smart city might be. The detail they offered varied widely. One participant in Glasgow said that a smart city ‘would be a city in which everything is smart, like smart phones and smart cameras and everything like that’. A participant in Manchester said that a smart city would exist if ‘city planners used data to make areas improved.’ Another participant explained that the phrase smart city ‘brings up images of everything being connected in a digital sort of way’, but she reiterated that she was only guessing. Once again, no specific companies or academics were noted. In fact, none of our participants even used the words efficiency, effectiveness or competitiveness, which appear to be very popular in smart city literature. Many of our participants struggled to be more specific than referencing existing technologies that use the label ‘smart’, thereby suggesting that the phrase carried little in the way of relatable content for most people. Despite this lack of relatable content, every participant was willing to engage in a visioning process wherein they described what a future smart city might be like.

3.2. Visions for future smart cities

When asked to describe what he or she would like to see from a future smart city, every participant offered her or his own vision. Much like the definitions above, these visions varied widely in terms of content and depth. Three interconnected themes emerged: the role of digital technologies in future smart cities, the importance of privacy, and the value of community. On the role of digital technologies in future ‘smart cities, some participants thought that technology would be a key driver to future developments, whereas others resisted the idea outright that our lives could be more reliant on technology. For example, one London-based participant described a predominantly technology-driven city. He envisioned a future smart city that would be ‘kind of like in Silicon Valley, where technology is very ingrained and in tune with the city. People would interact as they do today in normal, daily life, but what would end up happening is that the technology would be so integrated that it [would] become part of a seamless experience.’ He offered a description of a shopping experience that included digitally augmented windows that recommended nearby products and experiences based on the previous history of the shopper. In this experience, every shopper would have an individualised set of advertisements. Other participants were similarly keen to imagine technology-driven scenarios. They described digitally augmented buildings that would respond to air pollution levels, maps that advised people on how to move throughout their city while encountering minimal pollution, and networked bins that would automatically notify the waste management authority when they were full. However, as mentioned, these technology-centric visions were not popular with all of our participants. One London-based participant said that his imagined future smart city would likely ‘mediate conversations through technology, but [he] wouldn’t be happy with that. [He] would want more sincerity, community, and good old fashioned talking.’ This was echoed by another participant who acknowledged that his future smart city would likely feature a lot of advanced technologies, but that he wouldn’t necessarily be happy with that. He wanted more community connections, less isolation, and more infrastructures that encouraged sustainable lifestyles. These visions were people-centric, as opposed to technology-centric. They stressed that community should be one of the primary drivers of the smart city.

An interesting insight from the conversations was that in nearly every interview, our participants eventually stated that the people and sense of community in their city mattered the most to them. In particular, belonging mattered. Those who believed that technology would drive the development of future smart cities praised apps that facilitated connections amongst neighbours, raised awareness about community events, and notified people about social opportunities. As one participant explained, ‘if technology could be used to facilitate community interaction, then that would be great.’ However, beyond merely using technology to facilitate community interaction, our participants stressed the value of having a sense of community. A further insight was that community mattered to the participants. Our participants not only wanted to belong within their immediate geographical community, but also wanted to belong within their municipal development community. People expressed a preference to be consulted about, or at the very least made aware of, technological and infrastructural changes taking place in their city. They wanted to know what was happening, where it was happening, and what that meant for them. One participant asserted that ‘the installation of any sort of tool for technological surveillance should be made public.’ This sentiment was further reinforced by numerous participants, who also expressed concerns about what the smart city concept meant for their privacy.

When envisioning their future smart city, our participants expressed concerns about who would own the technologies, data, and decision-making processes installed within the city. Once again, there was considerable variation amongst participants’ opinions on the importance of these issues. Some participants felt that they should be advised about any and all data sharing processes, whereas others believed that regular consultation and awareness-raising processes would significantly inhibit urban development projects. Others held highly nuanced perspectives about the use, context and ownership of data, explaining that they would need to know the specific details of a digitally driven project before being comfortable with its installation in their neighbourhood. Some participants were especially concerned about municipalities partnering with private companies, as those companies may wish to make a profit off of public information, data and services. As one participant explained, ‘a lot of the time, technology is applied in an urban area by a corporate organisation, and it tends to be about making something more efficient with the end purpose of making more money or making something more profitable. If [my data] is just contributing to a product, then that’s not something that I would be happy [about].’ However, we encountered at least two other participants who were not concerned about whether a private company would use their data, so long as they saw a benefit in it. In short, the perspectives expressed in these interviews are nuanced, with respondents simultaneously envisioning a technologically enabled city and a need for privacy, information and an enhanced sense of community. Such nuanced and often contradictory views reinforce the notion of the city and its residents creating a vastly complex entity that cannot be simplified into one vision of the smart city.

3.4. Discussion

Based on our findings, we believe that there is not—and perhaps cannot be—a singular ‘true’ smart city. After comparing the visions for smart cities expressed in academic papers, marketing materials, and government publications (Mullagh et al., 2015; AlAwadhi & Scholl, 2014) with how people imagine the smart city, we found that the smart city can take a variety of forms. As AlAwadhi and Scholl claimed,

‘it might be pointless to strive for an exact and coherent academic definition of either “Smart City” (local government) or “smart city” (multidimensional urban space). Rather either term might be more helpful when understood as marking a conversation among stakeholders in local government and in the respective urban spaces about where the city and its government are actually going, and where they might need to go (instead).’ However, based on our interviews, we found that the phrase ‘smart city’ was not helpful, efficient or effective for engaging in conversations with citizens. Our participants found the phrase to be distant, unrelatable and abstract. We also found that these smart city visions was not evident in and did not integrate well with the cities that we researched. Even our interviewees agreed. As one of the participants pointed out, the smart city is a good idea in theory, but not for a well-established city like London. At this point in time, the smart city vision appears to be a technologically driven rather than citizen-centric utopian vision that is being used to address complex urban problems. However, for decades, urbanists worldwide have been arguing the significance of citizens’ involvement whenever we attempt to address complex urban problems (Jacobs, 1961; Lefebvre, 1991; Harvey, 2003; Soja, 2011). As Harvey (2003) states, ‘the freedom to make and remake our cities and ourselves is, I want to argue, one of the most precious yet most neglected of our human rights.’ What motivates us most to propose the people’s perspective of smart cities is our strong belief that people have rights to their city. The right to the city, as Harvey (2003) then argued, is far more than the individual liberty to access urban resources: it is a right to transform individuals by changing the city. As it is a common rather than an individual right, this transformation has to be based upon the collective exercising power in the processes of urbanisation (Harvey, 2003). Although our research was not designed to enable citizen participation in the processes of urbanisation, it was designed to bring a new dimension – citizen perspectives – to the smart city discourse. Thus, we believe that by presenting the nuanced, at times conflicting perspectives of citizens, our research can be used to inform the responsible development of spatially and socially inclusive technologies.

3.5. Limitations of this research

This research project has attempted to incorporate non-practitioner, non-academic perspectives into the smart city discourse. However, there are numerous limitations to this piece of research. As noted in the methods section, we were unable to recruit the number of participants that we had hoped to recruit. Moreover, our reliance on gathering data in the United Kingdom meant that many of our participants’ responses were based within a society that has an existing, comprehensive social welfare system. Interviews in the United States would likely attract very different responses. Therefore, the geographic scope of our research is a clear limitation to this project. Another limitation of this research lay within our use of the term ‘citizen’, a limitation we struggled with from the beginning. In one of the very helpful reviews we received upon submitting our abstract to this conference, we were reminded that the term citizen is a contested term, which does not actually include all people living, residing or occupying space in a city. Indeed, we encountered this limitation during our participant recruitment stage. Many of the people we approached on the streets of London were, in fact, tourists. We also ultimately ended up interviewing two non-citizens; two of our participants were residents of the United Kingdom, here on working visas that last between one to five years in duration. Although we initially agreed to use the

term citizen for this research project because it appeared throughout many smart city research project papers, we consistently encountered difficulties with relying on the classification of people in the city as citizens. We briefly considered substituting the term 'citizen' with the terms 'user', 'resident', and 'local', but each term carried its own unacceptable baggage. We ultimately decided to use the term 'citizen' throughout this paper for sake of consistency with its abstract, but we do not find it an advisable term to use in future smart city, participatory development, or 'citizen engagement' work. We would instead recommend the adoption of a simpler, broader term: people.

4. Conclusions

The object of this paper was to present a short research project carried out in early 2015, which we believe is the first attempt to bring citizen voices into the smart city research paradigm. As described above, the project found that most participants were unaware of what a smart city is, and they found the phrase to be distant, unrelatable and abstract. When asked to discuss their visions for future smart cities, citizens were primarily concerned about the role of digital technologies in future smart cities, the importance of privacy, and the value of community. We argued that these perspectives should be adopted by smart city researchers and developers to improve their research and practice. Our research was not designed to enable citizen participation in the processes of urbanisation, but it was designed to bring a new dimension – citizen perspectives – to the smart city discourse. We contend that by presenting the nuanced, at times conflicting perspectives of citizens, our research can be used to inform responsible development, spatially and socially inclusive technologies, and ultimately more resilient cities.

We also believe that our project has highlighted many opportunities for future research endeavours. For example, since our project was situated in smart cities within the UK, we suspect that it would be of value to undertake similar projects in other contexts. Additionally, since our project shifted its focus to rely on interviews with citizens, we think there are opportunities to use other means for involving citizens in smart city research and development. We therefore call upon smart city researchers to come together in order to develop, extend, and enrich the involvement of citizens in the rhetoric and implementation of smart city work.

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Conflict of Interest

The authors declare no conflict of interest.

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