



From Tar City to Smart City Living with the Smart City Ideology as a Senior City Dweller

Abstract

In smart cities, technologies are designed to assist people in their everyday lives, including intelligent homes, public transportation and e-services. However, these technologies can lead to new kinds of marginalisation for people who do not fit into the mold of a 'smart citizen'. In this article, I explore how seniors experience everyday practices in the smart city of Oulu in northern Finland and how they perceive themselves as smart citizens. Through generating ethnographic composition of ICT-biographies, walk-along interviews, and a series of participatory workshops; and thinking this process as collaborative knowledge making, the configuration of ageing in a smart city has emerged. In this configuration, the city is understood as an assemblage with distinct temporal dynamics and interactions of structures, communities and individuals within a global power geometry. Seniors support the ideology of smart city as a regional strategy but they want to make a voluntary decision to become smart citizens. The current smart city is mainly made for and by technology savvy people, excluding other citizens. To become a truly smart community the city must include a variety of citizens in the making of the city, and many seniors are willing to take up this challenge.

Keywords: ageing, smart city, ethnographic composition, feminist new materialism, urban assemblage

Introduction

To thrive in the global economy, cities must create economic, political and branding strategies to stand out from other cities. Before intensive economic globalisation, such strategies were frequently based on local natural resources that were either exported or refined into products to be sold. Currently, such strategies are built around global ideologies, such as neoliberalism and digitalisation (Äikäs 2001; Vanolo 2013), which can lead to new kinds of marginalisations (Hollands 2008; Grossi & Pianezzi 2017). My study is located in the city of Oulu in northern Finland, which has purposefully constructed itself as the northernmost smart city of the world since the beginning of the 21st century. In this smart city, the main aim has been to design different technological solutions to support the satisfactory living conditions of all citizens, from new-borns to the oldest city dwellers. (UbiComp Oulu.) As an anthropologist, I became interested in how elderly citizens perceive this new city that was constructed for them, how smartness formed part of their everyday lives and how elderly citizens perceived themselves as smart citizens (see Suopajarvi 2015; 2017a).

In Oulu, the smart city ideology is based on the former techno-city image that created numerous opportunities and economic well-being through the research and development of information and communication technology (ICT). At the end of the 2000s, the city started to develop as an urban space wherein 'the unique, ubiquitous computing infrastructure deployed at downtown Oulu providing new opportunities for citizens to interact with the city' (UbiComp Oulu). In practice, new computing networks and sensors have been designed and installed in the city centre that have materialised for city occupants in the form of, for example, free WiFi networks, smart lighting and interactive touch-screen displays providing information and entertainment services (Luusua, Pihlajaniemi & Ylipulli 2016; Ylipulli 2015). The development of smart Oulu is based on the *triple-helix strategy* involving the co-operation of the university and other research institutes, the high-tech industry and the administration of the city to create new innovations. This strategy has been implemented in Oulu since the 1980s and is considered as one of the key elements behind the success of this techno-city. For decades, the 'know-how' of building a smart city has mainly been constructed through technology-driven innovations. (Äikäs 2001; Oulu Triple Helix 2007.) However, geographically and demographically, Oulu substantially differs from smart metropolises such as Hong Kong and Seoul. In Oulu, 120,000 people live across a vast area of 1,400 km², and the outskirts of the city may be considered rural areas.

Hence, there is no single definition of a smart city (Giffinger, Fertner, Kramar, Kalasek, Pichler-Milanović & Mejjers 2007), and scholars have critically

pointed out that every city defines it in a way that supports their own agenda in the best possible way (Hollands 2008; Söderström, Paasche & Klauser 2014; Vanolo 2013). Political geographer Alberto Vanolo (2013, 4) highlights that a smart city can be understood either as an ‘urban development project’ or as ‘urban development policy’. In Oulu’s case, the triple-helix collaboration constructs the smart city as both: The city is developed through policies based on smart city ideology. Instead of examining the smart city through branding (Pasquinelli & Teräs 2013), imaginaries (Vanolo 2013) or storytelling (Söderström et al. 2014), I study it as an ideology that produces specific socio-material realities, which in turn affect and are embodied in people’s mundane practices, possibilities and sense of belonging to their city. This ideology is constructed in and produces power relations, and on everyday level, it enables certain practices and restricts others (Grossi & Pianezzi 2017). In response, Vanolo (2013, 5) argues that a smart city should include smart governance, meaning ‘participation in decision-making processes, transparency in governance systems [and] availability of public services’.

Therefore, in this article, I ask the following questions: How do the elderly city dwellers perceive the ideology of Oulu as a smart city? How do they experience their everyday practices in this city, and themselves as ‘smart citizens’? These questions are based on the idea of *urban assemblages* wherein urban histories, capital, everyday practices, continuities and disruptions, new encounters and connections are considered dynamically interactive (McFarlane 2011, 654–655). In this sense, cities are in the making and form part of a continuous process in which temporalities, structures and individual and social experiences as well as narratives are inseparably entwined. This becoming is strongly influenced by unequal power relations, resources and knowledge. Such city assemblages encourage us to think ‘how cities might be otherwise.’ (McFarlane 2011, 653, 655.) Human geographer Doreen Massey (1993) argues that local practices following global trends create power geometries in which people hold different positions in relation to flows and interconnections. These positions are defined, for example, by the capacity or incapacity to initiate flows and movements and by controlling, receiving or being imprisoned by them (Massey 1993, 61). I am interested in how the flows of making Oulu into a smart city were started, and by whom? What kinds of effects have these flows had on senior citizens?

My study of the smart city of Oulu as an urban assemblage focuses on the everyday practices of senior citizens in the context of the smart city ideology. Both practices and city ideologies form part of continuums, so it is crucial to discuss them as historical, social and dynamic and, thus, to understand them as urban processes (Low & McDonough 2001; Vergunst 2010). The senior participants of my study have long experiences living with Oulu’s ideologies, in-

cluding the time when Oulu was mainly known as the largest port of the Gulf of Bothnia. Tar was transported from this port to global markets since 16th century until the 1920s, and the largescale timber export started in the 1950s. (Manninen 1995.) In addition, senior city dwellers are important participants in my study because the elderly are more often considered as a burden to digitalising society rather than active agents in the process of digitalisation (see Buse 2009; Uotinen 2005; Suopajarvi 2015). To study the urban assemblages of the smart city of Oulu and its power geometry, I also ask whether and how seniors have been able to participate in the making of the smart city.

Methodology: from field to wordly configurations

I collaborated with elderly citizens of Oulu from 2011 to 2015. First, I interviewed them about their experiences on ICT and later walked with them in the city centre to understand their experiences on moving in public places. Finally, I worked with them in collaborative workshops to determine better participatory practices for designing public services for seniors. My work forms an ethnographic composition that refers to the cumulative nature of research and that is typical of multiple parallel or subsequent projects (O'Dell & Willim 2016). Such a composition enables ethnographers to reach 'thick descriptions' even though the fieldwork periods are short. Thus, they can reach a level of understanding about what is occurring rather than simply observing how people act. Different research projects first led me to carry out life story interviews (Linde 1993) with seniors in relation to their ICT biographies.¹ During these thematic interviews, we discussed, for example, the interviewees' experiences on landline and mobile phones, computers and the internet in addition to the effects of these technologies and living in a techno-city on their lives. The interviewees were recruited from a computer course held at a community centre. In all three courses that I visited, the majority of participants were women; therefore, a gender bias is present in the current material, as I ultimately interviewed eleven women and five men. Three of the course participants invited their spouses to the interviews, one of whom had never used a computer. (See research material; Suopajarvi 2015.)

At the time of the first interviews in 2011, the age of the seniors varied from 61 to 87. All except two of them had lived for most of their lives in Oulu;

1 The interviews were part of the UBI Anthropos research project, funded by the Academy of Finland, where we studied the appropriation and meanings of novel, urban and ubiquitous technologies. In addition to seniors, we studied young-adults' perceptions of technologies as part of their everyday lives and technology designers' and city officials' goals and choices in the process of constructing the smart city called UBI Oulu (e.g. Suopajarvi et al. 2012; Ylipulli & Suopajarvi 2013). The abbreviation UBI refers to urban ubiquitous technology (UBI Oulu).

however, this was not a criterion for selecting study participants. Four had university educations, whereas ten had studied in a vocational school or had achieved an intermediate education level. Finally, two had begun to work immediately after finishing basic education. The public sector, consisting mainly of hospitals and schools, had employed eleven of these interviewees. Three had made their careers in industry, and two had worked as entrepreneurs. The seniors who participated in my studies all lived independently and were financially capable of using computers and the internet. However, in the interviews and especially in the workshops, they continuously mentioned other seniors who were not in the same situation. Many of them had children, in-laws, other relatives or acquaintances who used to work for Nokia or other ICT firms, so they have concretely witnessed the well-being brought by the techno-city strategy in their intimate circles.

Then, in the next phase, I invited ten of the seniors to walk with me in the city centre to better understand what they do and how they experience walking around in the smart city (Suopajarvi 2015; 2017). The walks lasted 1 to 1.5 hours, except for one, and were unstructured and easy-going. We talked about issues of safety, accessibility, when they visited the city, and pleasant or unpleasant places. The first walk only lasted 15 minutes, as we walked from the interviewee's home to a nearby health centre where she had an appointment. The biographical history of participants in relation to the city was not as a theme in my mind before the walks, but it became a significant part of our discussions (Suopajarvi 2017b). The aim of the walk-alongs was to allow distinct places and situations to impact our moving and conversations as well as to understand these impacts (Kusenbach 2003). All walks were recorded with both a digital audio-recorder and a small GoPro video camera to enable me to reconsider the embodied movements and places during the analyses (Pink 2007, 245–250; Suopajarvi 2017b).

At following, I met with the seniors in autumn 2013 during a series of four collaborative workshops. In the workshops, seniors, city officials and researchers worked together to define good participatory practices for senior citizens when designing public services (see Sources: Research material). The city officials worked in the Departments of Development, Service Design, Urban planning, and Information services, and the researchers came from backgrounds in anthropology, sociology, computer science, information processing science and architecture (Suopajarvi 2017a). The workshops followed the methodology of participatory action research (PAR), which is based on the idea that a social change can be accomplished through collaboration and co-learning between different kinds of participants. This is done by identifying the problem(s) together, followed by observing practices related to the prob-

lem(s), which leads to the generation of ideas for transforming current practices and therefore 'resolving' the problem(s). (Kemmis & McTaggart 2005; Yoshihama & Carr 2002.)

In the first workshop, we imagined what the utopian city of Oulu would look like in 2030 from seniors' perspectives. From these discussions, we outlined together the central issues to be addressed in the following workshops: lack of a cross-generational sense of community and lack of communication between the city and seniors. In the second workshop, we started to plan solutions for the identified problems, and these were further reflected upon in the third workshop in which we discussed how our ideas could be implemented. In the final workshop, we discussed participants' experiences of the workshops and their hopes for the future, especially in regard to seniors' participation in the public design processes. (For more detailed information on the workshops, see Suopajarvi 2017a; 2018.) In August 2015, I organised an open seminar to discuss my research projects and, in particular, our results from the workshops. Most of the previous workshop participants came to this event.

Both the life story and walk-along interviews were transcribed verbatim. The workshop discussions were also documented, as group discussions were transcribed. Other discussions were documented in the form of audio and video recordings, which I have listened to and watched in my analysis. In this article, I have given each interviewee a pseudonym. I also made fieldwork notes after each encounter and workshop. (Suopajarvi 2018.) In an ethnographic study, the process of generating materials must be understood as vaster than fieldwork, nonlinear and consisting of both documented and undocumented pieces. In addition, the embodied memories and emotions of a researcher affect how he/she comprehends and analyses the materials. (Pink 2009.) For example, a tense or enthusiastic atmosphere in our workshops has made me highlight these moments and the discussion around them.

These research projects² were grounded in feminist socio-material onto-epistemologies (Barad 2007; Haraway 1991; Suchman 2007). From this perspective, the becoming of urban assemblages is examined, including all human and non-human agents, such as laptops, city furniture and materials in the workshop rooms. In this regard, feminist scholar Karen Barad (2007, 139–140) argues the following: 'Reality is composed not of things-in-themselves or things-behind-phenomena but of things-in-phenomena', meaning that researchers must be understood as actively and consciously affecting the research process in distinct ways by 'making specific wordly configurations' (Barad 2007, 87–91). This understanding of knowledge making and the power relations in-

2 Walk alongs and workshops were conducted as part of the UBI Mingle research project, funded by the Academy of Finland.

volved in the generation of knowledge forms the onto-epistemological background of this article. (For more detailed information, see Suopajarvi 2017a.)

One of the most crucial aspects of my study is the notion of seniors' marginal position in digitalisation (Buse 2009; Sourbati 2009; Uotinen 2005). This has led me to use collaboration and co-learning to find ways to support seniors' empowerment in this process. For example, during the walk-alongs, my interest was in seniors' daily practices and experiences moving around in public places. The implementation of technology, such as ICT or urban computing, did not come up as a meaningful element in these practices, so we did not focus on them. In the workshops, this meant my constant consideration of power relations and means of changing them.

The encounters that I will discuss in this article were generated from the unique positions and acts of different participants, which are shaped in *intra-actions* with other human and non-human elements as part of a shared process. Intra-action refers to the idea that we all form part of a phenomenon; thus, our actions occur within this space rather than between agents. The boundaries of a phenomenon are, however, in a continuous flux (Barad 2007, 139–141). Furthermore, agency is understood as concurrently, materially and discursively constituted (Jackson & Mazzei 2012, 115, 121). For example, seniors' experiences of themselves as mobile city occupants are produced between their material bodies and social discourses on ageing, which unfolded in our ethnographic encounters. I will return to this process of knowledge making in the conclusions where I consider how the particular ethnographic composition of the study has affected the configurations of ageing in the smart city of Oulu.

Living in a smart city

Ideally, a smart city would improve citizens' lives by facilitating the use of different services, such as public transport and support services for living. In practice, such efforts might be welcomed and result in improved access for most citizens. However, for others, such changes might eventually limit their possibilities to access information and to use services. For example, with respect to e-services in Finland, there are clear differences between age groups: Eighty percent of people aged 25 to 44 have used e-services for governmental affairs, whereas only 22% of people aged 65 to 74 have used e-services (Kohvakka 2014). During the ICT life story interviews in 2011, I found that seniors' use of online services substantially varied: Some had used online banking for almost a decade, while others had not used computers or the internet at all (see also Sourbati 2009; Uotinen 2005). All interviewees shared the feeling that online services would increase in the near future but were also confident

that parallel, offline means would be offered to those who are unable or unwilling to use the internet.

Tiina: How do you feel about this situation that all – or more and more things – are done on the internet?

Leila: I don't really like it. Young people who have used it from the start – they learn at school how to use the computer. But, since there are still us older adults, it's quite difficult. It feels that they tell us only small bits [of information]. And, then you have to look for the rest from www pages. It annoys me a little bit that I have to go immediately to a computer to look for it.

Tiina: So, that there's kind of no options?

Leila: There are no options. And, not all older adults have computers, and they don't want to buy one either. Then, they have to settle for a half of the information, if there's no other way to find things out.

Tiina: Yes, what do you think, will the city offer healthcare and social services both online and in the future?

Leila: I think it will, at least for a couple more years. There must be other ways to get them than only through a computer. And, then, when you use only a computer, social encounters become more rare. Then, you are just clicking the computer.

(ICT-biography interview 2011; woman born in 1940s)

Throughout our ethnographic encounters in the following years, I could observe how seniors used online services, which mostly stayed the same. For example, Jussi used a service to pay bills offered by the city to its former employees and took his bills to the city office both in 2011 and 2014. During our first ICT interview in 2011, he was very interested in using his computer and different software. At that time, he said that he should learn to use the computer; but, in our later workshops, he focused on thinking how the public offline services could be maintained in the future (see Hakkarainen & Hyvönen 2010). On the other hand, using online banking and Skype was easy and joyful for Pekka who had his laptop open on the table in our first interview, and an iPad with him in our workshops.

Tiina: Yes. How was it when you started to use online banking, how did it feel, did you dare to?

Pekka: No, it felt normal since before I used to go to the bank office and use the computer there, and they had bar code readers there. And we went through these things, they gave us the registration numbers, and the numbers that I have to insert to go online. [...]

Tiina: So it's easy to use, the online banking?

Pekka: Yes, it's easy. And sometimes we skype with our granddaughters. They had bought a bunny, so they wanted to show it, and they put it in front of the webcam. [...] They have their own lives, we don't talk to them every day, they are eight and ten years old, they'll come here on their holiday.

(ICT-biography interview 2011; man born in 1940s)

For most interviewees, running errands, which involved visiting different offices, banks or stores, was part of their routine weekly practices and schedules. Leila, who was quite a capable internet user, said that she would rather cycle to the nearby bank office to pay her bills using a payment kiosk than to do so using a computer at home. This way, she had a reason to get mundane physical exercise. (Ylipulli & Suopajarvi 2013; see Jiron 2010.) Since our first interviews in 2011, most banks in Finland have stopped providing payment kiosks, so the only available options for paying bills are to use online banking, phone services or to pay extra for performing services at the bank counter. When the smart city guides its citizens to use services at home computers, seniors must find other reasons for exercising everyday micro-mobility. The seniors themselves pointed out that staying on the move was crucial for their well-being and independent living, which they hoped to continue for as long as possible (Suopajarvi 2015). However, some of them, such as Leena in the next extract, were pondering how novel safety devices could help them keep their autonomy. Even so, women were especially worried about how this would decrease human contact (see also Sourbati 2009).

Leena: Well, I heard that they are doing these kinds of experiments that they have computers at home, surveillance cameras, and they can contact you. I was first thinking that this might be a solution [to live independently]. But, then I started to think that this will be like the world of Orwell. And, I really don't like it. I think it's better if a person would come here and ask me how I'm doing, if I can still manage on my own. If I could answer the question [I'll be fine]. Today I do wonder how long my brain will work. As long as the brain works, I'll be okay, even with a worse body, I can walk by leaning on the walls and chairs and everything else. But if [...] I start living in 1940s, that is what I remember, then I'm not doing well – if I cannot pay my bills. (ICT-biography interview 2011; woman born in 1930s)

Different citizens have different needs and abilities to utilise the ubiquitous computing services that are offered. To understand these needs and abilities, we started the workshops by identifying the problems of living in Oulu from seniors' perspectives. Through our discussions, we came up with two things that were missing in Oulu: a) a cross-generational sense of community where different age groups could interact and b) communication between the city and

its (senior) citizens. All in all, a sense of belonging to a city as a socio-cultural place was what seniors wanted (see Cattell, Dines, Gesler & Curtis 2008). Our workshop participants were worried over the rushed, short-term plans of the city for development and that digitalisation in Oulu was harmful for senior citizens if it increasingly limited their access to information and participation.

According to our study with the triple-helix stakeholders of the new smart city centre of Oulu, the initiative for creating a smart city came from computer scientists. They invited the city along with partners from local industry, such as Nokia to participate in the smart city project. In the beginning, the team received EU funding for the technical design of interactive displays and sensor networks but not for content design. They decided, nevertheless, to start the design process, which therefore became very technology-driven. At the point when social scientists were invited to join the project, most of the infrastructure was already designed and implemented (Suopajarvi, Ylipulli & Kinnunen 2012). Accordingly, computer scientists were placed in high power positions to decide who were included in or excluded from this process. Vanolo (2013) perceives large risks in this kind of smart city development where cities are merely seen in terms of technological issues to be solved, and the complexity of urban problems becomes ignored. At the same time, 'the power relations which inevitably lurk behind every process of knowledge production' are hidden behind technical standards and practices (Vanolo 2013, 890–891).

How could a smart city consider the problems that were raised in our workshops? Seniors were enthusiastic about learning computer skills but wanted to have face-to-face learning experiences. So, they suggested that teenagers could teach them these skills as part of their school curriculum. Seniors could visit schools and vice versa – school children could visit the places where the elderly live or spend their time. Travelling to schools and back should be made easy for all seniors, who could also have their lunches at school canteens. In Finland, the loneliness of the elderly is a severe social problem, and these visits could also provide relief to it. But it is important that the collaborative process is reciprocal: Seniors could teach teenagers baking and mending broken furniture, for example, or other skills. (Suopajarvi 2018.) To understand these social practices as part of a smart city requires power flow to start from citizens and their needs. Social scientists argue that a real smart city is one that begins by placing social and political questions first and, only then, considering how the technological tools could be of assistance (Hollands 2008; Söderström et al. 2014). In this regard, smart cities are about the use of technology to empower citizens and communities, to ensure that everyone has equal access to services and infrastructures and to upgrade forms of sustainable urban living (Söderström et al. 2014, 318).

In all our encounters, the most talked about practices relating to the ideology of the smart city were the search and use of services provided by the city or private sector for seniors. In particular, the effects of ongoing or forthcoming digitalisation on the accessibility of these services worried seniors. The use of services hence became a disruption in the assemblage of the city: Receiving services that supported their living used to happen offline and to be easy. This disruption mainly affects older adults who are unable or unwilling to use computers and the internet. How long would seniors have access to the services that are crucial for them? The sense of ageing in a smart city was tightly entwined with the feeling of being able or unable to use e-services. Keeping up with the surrounding digitalised world was key to the independent living they valued, and this included the ability to stay mobile.

Moving in a smart city

According to Vanolo (2013) in reference to Giffinger et al. (2007), smart mobility is one of the characteristics of a smart city. Other features include a smart economy, smart governance, smart environment, smart living and smart people (ibid.). In a smart city, traffic should serve all citizens well and pollute the air as little as possible (Söderström et al. 2014). The reasons to move were quite varied for seniors, as they are for most citizens: to get exercise; to go to a grocery store, bank, library or theatre; to visit health care centres; and, of course, to maintain social relations. The problems of public transportation were particularly addressed in our workshops. Seniors were especially unsatisfied with the small city buses designed for elderly citizens. They argued that the bus routes did not cover well enough the neighbourhoods where elderly citizens mainly lived. Furthermore, the health care services that seniors frequently used had been recently removed from the city centre, so they were no longer able to walk to these services. Seniors were very worried for those elderly who lived in the outskirts of the city who did not use cars or not have money to use the buses that run infrequently, if at all.

The smart city ideology becomes visible, for example, through the smart use of street lighting. To be energy efficient, lights can be programmed to go on and off, or to be dimmed, according to spatial movements or the clock. Lights in parks can be used to create entertaining displays as well as for safety. (Luusua et al. 2016.) In winter, it is dark; for example, in November, the daylight time is around six hours in Oulu. During our walks in the winter and spring of 2013, it became clear that most seniors went for daily walks in daylight and usually avoided going out during the dark hours. For instance, Helga (born in the 1940s), who lived in the city centre next to a park, said she would welcome better lighting in her neighbourhood, which would encourage her to move

more in autumn and wintertime. Novel smart city lighting should be able to address the multi-layered complexity of the environment, such as big seasonal changes, as well as the needs of users: Some citizens appreciate the entertainment, ecological and economic values of lighting, while others might simply want to see well enough to stay afoot and feel safe (see also Koskela 2009).

When we walked in the city centre in 2013, the smartness of the city was quite invisible to us. Seniors had told me during their ICT interviews that they were reluctant to use mobile phones in public. Some completely kept their mobile phones in the silent mode. Some answered the phone but kept the calls short. Others used their phones to find their spouse in a store, for example, or to phone family members while buying items that were on sale. (Ylipulli & Suopajarvi 2013.) None of the seniors used mobile phones to search for locations or other in-situ information. The interactive screens installed in the city centre were unseen and unused by the seniors. However, if we happened to be close to one of the screens, I invited the seniors to try them. They did not find the screens to be useful for themselves but said that they might be useful for tourists. Marja, in particular, was really sceptic about the screens and said that they were expensive toys for young technology enthusiasts. (Suopajarvi 2015.) In her everyday life, the techno-city Oulu promoted itself to be was irrelevant, and she assumed that this was the case for most citizens.

Marja: Ordinary people don't know much about Oulu's, these [techno-city strategies] – they're irrelevant to us. Somewhere, there are companies, but they don't concern us at all. I must say that I have the kind of feeling that I don't know how, or where, we are at the moment – what is happening here. I don't have a clue.

Tiina: Yes, that's true. So, those worlds are a bit far apart from each other?

Marja: Yes, they are far, they are really far apart.

(ICT-biography interview 2011; woman born in the 1940s)

Technologies as well as the design of technology are tightly linked to the histories and social realities surrounding them. Therefore, the smart city can be considered as part of the 'history of urban imaginaries' (Vanolo 2013, 885). However, smart city discourses are often missing this perspective of continuity underlined in McFairlane's (2011) conception of assemblage and are solely orientated towards the future (Dourish & Bell 2011). Before techno- and smart city ideologies were prevalent, the port and, accordingly, the sea were significant images of Oulu. In our walk-alongs, many seniors wanted to go to the marketplace located by the sea, even during wintertime, though the place is quiet (see Suopajarvi 2017b). When walking around the city, seniors carry with them both the former cityscape and their social life in the same space

as children, teenagers, young adults and middle-aged citizens. However, few signs of their former life are visible within the city. The large amount of new infrastructure has led many seniors to feel that Oulu does not respect its history. Seniors were especially sorry that the coastal location of Oulu was forgotten. This becomes visible in how the former harbour by the marketplace was re-constructed with a theatre and library buildings in the 1970s and 80s, and later with new residential areas. Seniors were hoping that the seaside location of the city would become more prominent, which would demonstrate respect for Oulu's history.

Tiina: Do you have some thoughts what should in those [UBI] displays, what kind of services or information?

Matti: Well it depends of course, what kinds of things can be put there, but maybe there could be some old pictures of Oulu, what this city centre used to look like in the turn of the 20th century. [...] Now that they're ruining the market place completely, it would be nice to show people how the market place used be like when it was a well-functioning market. [...] It doesn't really matter what they will put there this time, it has been ruined so many times, the whole seaside. It is unbelievable that in a city like this where there is a view over the water, that it's hidden.

(ICT-biography interview 2011; man born in the 1940s)

While we were walking in the city, many modern layers had infused places that were once important for seniors who had lived, played and moved around in the city centre as children, teenagers and young adults. Even so, seniors were not against techno- or smart city strategies as a whole. To the contrary, Matti, for instance, who had lived all his life in Oulu and underlined the importance of the seaside location of the city, argued that a focus on promoting the ICT industry had been a good decision. At the time of our first interview, he was confident that the success of the local high-tech industry would continue. Kerttu also agreed with Matti, but both of them saw the concrete effects of these ideologies occurring in spheres that they were not included in. In fact, they used to be happy with this exclusion. Through the vast digitalisation of everyday lives, such ideologies are becoming more and more entangled with seniors' lives, whether or not this change is desirable.

Tiina: Well, if we talk about the technology image of Oulu, what kinds of thoughts do you have on it?

Kerttu: Yes, well when they started to talk about it, naturally, I thought that it's a good thing that they come up with something like that, since the roots of mobile phone are here and everything like that. But, when I start to think about that, I also have to learn to use all these [things][laughs] that I don't really care for at all. But, eventually, I have learned

to use them. And, nowadays, all these new cars, everything is like that you feel like Alice in Wonderland, in new cars and others where the computers take care of everything. They even tell you to stop immediately that is what I don't like. I think there should be less computer technologies in all of those kinds of things. But, I guess the developers are so enthusiastic about them, they feel it's great that there are all these kinds of things. (ICT biography interview 2011; woman born in 1940s.)

The power geometries of the city are entangled with different temporalities: The possibility of an individual experiencing a strong sense of belonging to his or her own city upon ageing depends on the past, present and future ideologies of the city and on one's own history with the city. For example, the interviews showed me how seniors' practices of moving and spending time in public places were gender- and age-related: During our walk-alongs, many women expressed fear of violence connected to the city parks during the dark hours but also fear of groups of 'shady-looking' people (Suopajarvi 2014). For this reason, women preferred efficiency to entertainment in smart street lighting or decided to only go out during the daylight hours. One woman reminisced how she used to not be afraid of hanging out late at night when she was a young adult.

Furthermore, urban rhythms are often designed for fast, able-bodied city occupants. For example, traffic lights can change too quickly, or escalators can move too fast for older citizens (Jiron 2010; Vergunst 2010). Public transportation routes may be out of reach for seniors, although younger citizens might experience the same distance to a bus stop as short. These design decisions express the exclusion of slower, less able-bodied walkers. McFarlane's idea of urban assemblages highlights the co-constitutive nature of human-non-human relations (2011, 651). For example, the location of bus stops can define the kinds of social relations and, in the end, the quality of life of less able-bodied citizens. In addition, it is necessary to understand the importance of continuity in human lives, as changing everyday practices can be difficult if the world changes too quickly. If only people with good socio-economic positions are making decisions for all citizens and if these decisions are based on global technology-driven ideologies, like the smart city, rather than on the social needs of all city dwellers and local spatial arrangements, people with weak social power positions become the recipients of or imprisoned by flows of global power geometries.

Sense of being a 'smart citizen'

Along with the smart city ideology, the idea of a participatory state and city has entered into our everyday lives in Finland (Leinonen 2007). In this respect, smart governance should be as transparent and participatory as pos-

sible (Giffinger et al. 2007; Vanolo 2013). We have laws for old age, such as the obligation that municipalities include older adults in the design and decision-making processes of public services created for them (Laki 2012/980). In addition, the local service model of Oulu aims to get citizens of all ages to participate in and influence design and decision-making concerning their own living environments and services (Oulun palvelumalli 2020, 2013, 22). During our first interviews, this law was in the making, and participation in design and decision-making was unfamiliar for seniors. However, the way that seniors felt about their right to participate changed quite drastically during the research process and was nearly reversed in 2015 when we finished our collaboration. In the first interviews during 2011, most seniors were happy with the prevailing situation in which other people made plans and decisions for them.

Tiina: What do you think, I mean, since Oulu is referred to as a city of technology, how do you see it in your everyday life, or what do you think about this image?

Hilkka: It hasn't really affected my life that much – it doesn't bother me. Let them advertise and develop – those who are up for it.

Tiina: Yes, do you think that it's a good strategy, or were there other possibilities?

Hilkka: They have probably been good choices, decisions. There's always people who write text messages or have other ways to state their opinions in the newspapers, either for or against everything, but we have to look forward in life, whatever that direction is. I think those people in different committees, we have to trust them.

(ICT-biography interview 2011; woman born in the 1940s.)

In our first interviews, some seniors expressed the difficulty for an individual to impact public design and decision-making. Leena had, for instance, started an initiative related to plans for new traffic arrangements that would affect her nearby neighbourhood. On the other hand, some seniors were fed up with the long processes for appealing or changing decisions seeing these as serious hindrances in the development of the city. The rest agreed more or less with Hilkka, who thought that the design and decisions should be made by city officials and the city council. Therefore, the seniors were an interestingly heterogeneous group in regard to issues surrounding participation in city making. I invited all 16 seniors who participated in the ICT biography interviews to the workshops, and nine of them joined us.

Already, in the first workshop, we identified one big problem between the city as the provider of most services that seniors use and the seniors: The seniors did not know enough about services, such as household aid, how to find services and whether such services were available for them. This was a surprise for the city officials, who had assumed that their services were easy to find

and use. When our discussions continued, we realised that city officials were well aware of the legislation for including senior citizens and strived to include citizens into design processes. However, the seniors, who actively followed the city's development, were unaware of their own rights to participate or of the ways that the city includes its citizens into different processes. Seniors argued that a small group of senior citizens are invited to participate, while the rest are excluded (see also Leinonen 2007). On the other hand, the city architect said that they are struggling to find seniors to collaborate with. All in all, large challenges are present in better providing seniors with the information that they need. It was clear that if relevant information was only online, it would not reach most seniors, not even those who use the internet daily.

The city officials agreed to some extent that the internet was not the best medium for communicating with the elderly. Nevertheless, the city of Oulu continued to invest in constructing new online service models, such a 'tray of well-being', from which seniors can choose the services they need (Oulun kaupunki: Palveluopas 65+). Some city officials and technology designers argued that, in the future, most ageing adults will be able and willing to use the internet. However, the seniors and the anthropologist who participated in the workshops claimed that it is also possible that general reluctance to include more and more technology into one's everyday life will increase. The anthropologist's argument was based on her own study with young-adults' ICT usage, but this has been noted by other scholars (see Hakkarainen & Hyvönen 2010; Foot 2014; Ylipulli 2015). However, in the smart city of Oulu, alternative development strategies that are not technology-driven are non-existent or remain at the margin of development priorities. This worried some seniors more than others. However, even those who were not too worried about the strategy of digitalisation recognised the possibility of becoming more dependent on technology-savvy people.

Tiina: How about the future, otherwise, does it worry you, when this information society, when we go more and more into the internet and everything gets more electronic?

Pekka: It doesn't really worry me, we just get deeper and deeper into it, not really, we have to live with what we have. What changes of course is that you have to ask for the information from someone else, and that is why they organise these courses [computer courses for seniors]. They make them for elderly people because we were not taught these things at school. And, in the working life that you had – you had certain programs and you used them, and after that you haven't been taught anything else. (ICT biography interview 2011; man born in the 1940s.)

In our workshops, participation in city development meant many things for the seniors: making a difference, belonging to a community and receiving information. Furthermore, we discussed the current policies in which ‘everyone’ is expected to participate. Perhaps, if people are not interested in participating, they could be accused of being incompetent citizens (Suopajarvi 2018). Vanolo argues that this is apparent in other smart city discourses where ‘citizens are considered responsible for their own ability to adapt to these on-going changes’ (Vanolo 2013, 893). One of our participants had worked for decades as a councillor in Oulu, and she said that, as she is getting older, she does not want to be involved in as many things as she used to be. Nevertheless, she demanded that those elderly who want to participate in making the city should be given more opportunities to do so. Therefore, I argue that the smart city should include lots of discussion between different citizens and stakeholders about the meaning of a smart city and community. What are the best ways to assist those citizens who are interested and willing to let this technology enter their lives? In addition, the best ways for all citizens to include the ‘smartness’ in their everyday lives should be carefully considered, rather than how citizens should adapt their lives to these technologies.

Knowledge, or the lack of it, are central in the concept of urban assemblages, as it constitutes power imbalances in cities (McFarlane 2011). For example, if only those who live near health services or can drive to such services are heard during the design of new health care systems, those who live far from the nearest health centre and do not have a car become less important smart city dwellers. In our workshops, the seniors pondered that if only younger citizens are included in decision-making, seniors’ needs will not be considered.

Hilkka: But, there [in participatory design] should be people of all ages – young people they don’t understand [older adults’ perspectives].

Matti: Exactly, they don’t.

Hilkka: They just say to look it up from the internet, you can find it there.

Matti: Yes.

Hilkka: And, there are lots of people who don’t even have the internet.

Tuulikki: No, not all people have it.

(Workshops 2013–2014; IV workshop, seniors.)

The city of Oulu has stated that in renewing the service model for senior citizens, its ‘success requires the consideration of the opinions and needs of the aged, both in well-being services, dwelling, sports, education and urban planning as well as in developing public transportation’ (Oulun palvelumalli 2020, 2013, 28; author’s translation). Often, design processes occur over short

time frames, and certain participants in established positions of power may have difficulty relinquishing their power. This was evident in our workshops: In the small group discussions, city officials often started to act like facilitators. In our last workshop, the seniors expressed their 'modest wish' that they had been helpful for the city officials. (Suopajarvi 2018.) Seniors' perception of their own rights to be included in design and decision-making processes varied during our workshop process: In the second meeting, they started to claim quite straightforwardly their right to be heard and to make a difference in the public services directed towards them. At this point, they felt that the city, as represented by the city officials, was not interested in seniors' opinions. This was due to the fact that all city officials who participated in our first workshop were unable to join the second one. A new representative from the city was, however, present.

Pekka (senior): In these discussions, we should have the city officials with us, since they can take these things [discussed in the workshops] to the city council. They [the city council] don't listen to us, or if they do, it'll pass, and we will be forgotten.

Tiina (researcher): Well, it's good to hear, since it means that there really is a need for this kind of project. I do understand that people [city officials] are terribly busy since they have all these projects, and someone can have three meetings booked at the same time in their schedules.

Hilkka (senior): Well, it's bad planning if you book three meetings at the same time.

Pekka (senior): Another question is where do they choose to go to.

Pirkko (city official): Of course, I apologise for the city, if those people who were here the last time are not present. I'm sure they have meant to be, but all these things have come up.

(Workshops 2013–2014; II workshop, general discussion.)

As McFarlane (2011, 655) argues, cities are continuously constituted by multiple entanglements in which different kinds of agents, such as institutions, structures and individuals, come together. These entanglements are both created as a result of unequal power relations and serve to perpetuate unequal power relations. Seniors are curious of and worried about keeping up with the digitalising society and city, and they often consider themselves as non-active participants in the creation of this new reality. They feel that they must adjust to the changes that other people bring into their lives.

Being able to participate in the making of one's place of dwelling should be taken very seriously in smart cities. Otherwise, there is a high risk of creating new marginalisation, i.e. marginalising those excluded from the use of ICT and other smart technology. (Suopajarvi 2018.) Although the elderly use

a lot of health care and social services, they should also be included in urban planning as well as in discussions about education and culture according to Tellervo, a former city council member. Participation is about power and empowerment, shifting the prevailing power order, and finding the right tools of participation for all participants, in our case especially for seniors (Kesby 2005; Suopajarvi 2017a). As city ideologies transform, so do power relations within the city: In the prior tar city of Oulu, class relations were evident, and decisions were made by the wealthy. It was claimed that digitalisation would democratise societies (Manninen 1995; Vanolo 2013). However, our previous study on the design of smart Oulu and Äikäs's study on the image building of techno-Oulu show how the framing of strategic processes involved in building a smart city only included a small group of people, mainly scholars, experts and city officials from the fields of technology and business. These frames as well as the ideologies behind chosen strategies and technologies significantly influence the possibilities of smart design. (Äikäs 2001; Suopajarvi et al. 2012.)

Conclusions

The senior city dwellers of Oulu have a two-fold relation with the smart city and techno-city ideologies: On one hand, they perceive the high-tech industry as a good, reliable and economically successful development choice for the region. On the other hand, they would prefer not to be forced into the world of ubiquitous technology, e-services and online information and communication systems. Digitalised everyday life should be voluntary: Those who feel uncomfortable living a digitalised life should be given additional options to remain as active, competent citizens with equal opportunities and rights to access services and participate in society. Seniors do not dream of returning to former industries of tar and timber exports but do wish that the history of Oulu would not be forgotten. By respecting the history of the city through the infrastructure, the current city would simultaneously respect the life histories of its elderly citizens.

The ideology chosen by those who administrate the city shapes the everyday practices of citizens, although this may not always be easy to notice or express. Being a smart citizen is not a free choice if the ideology is based on the assumption that all citizens are willing and able to adapt to this new way of living. This became evident, especially in our workshops, where most participants agreed that public e-services are not an easy or efficient way to communicate with seniors; nonetheless, the city continues to mainly invest in this medium. The city cannot and does not want to detach itself from the global and national flows of digitalisation and the building of 'smart communities'.

However, this development may disconnect the city from those citizens who do not fit into the narrow definition of a smart citizen. The definition could be much broader if the design of the smart city would start from the values, needs and interests of the large variety of city dwellers. Most seniors who I have worked with during my research projects are capable of and interested in looking for new information and learning possibilities, yet they do not feel included in the making of the smart city of Oulu. Therefore, it is safe to say that those seniors and other city dwellers, who may even be less capable of becoming competent members of the smart community, are marginalised due to the chosen ideology.

After many encounters firstly based on more traditional ethnographic methods and, secondly, on participatory action research methodologies, I have generated an ethnographic composition describing distinct configurations of ageing in a smart city. The ICT-biography interviews and the walk-alongs with seniors disclosed the everyday practices, environments and social relations of seniors. In these intra-actions, the smart city ideology is experienced through the frustration of not being able to connect to public WiFi in ones' own home, fear of or relief in using online banking and anxiety over losing more and more human contact because of increasing computer use as well as happiness from making Skype calls with far-away children and grandchildren. During these interviews, the seniors perceived themselves as the recipients in a global flow of digitalisation: Ageing meant that they had to either adapt to the world that was changing around them or become partly excluded from the public life of their own hometown. It also meant becoming more dependent on other more technology savvy people.

The implementation of a participatory methodology in the form of open-ended workshops allowed the becoming of different configurations. The idea of the PAR workshops was to allow participants to become aware of their own practices that are entangled with the prevailing idea of ageing citizen. In the beginning of our workshop series, the seniors were mainly satisfied with their position as non-designers and decision makers and were thus content as recipients in flows of power. As the aim of participatory action research is to start questioning prevailing practices once they have been identified, the seniors then began to re-think their position as citizens and to demand to become part of the making of their city or, in other words, to change the course of the power geometry. This process was not straightforward; during our workshop encounters, some seniors partly returned to their position as recipients. Nevertheless, all seniors agreed that their participation in the workshops had been meaningful.

In this article, the configuration of living with the smart city ideology as a senior city dweller has happened in phenomena where the feminist socio-material onto-epistemology, understanding of the city as an assemblage with distinct temporal dynamics, structures, communities and individuals; and the notion of power geometry, have intra-acted. In this intra-action, human participants as well as their discussions, embodiment, materials and methodologies generate configuration of the smart city of Oulu as technology-driven and created by experts of computer science, industry and city officials. This city is made for technology-savvy and enthusiastic citizens, and those city dwellers who do not fit into the idea of smart citizen have the sense of being marginalised. This marginalisation has occurred through lack of information, inability to participate in the making of the city and feelings of non-belonging to the city (see also Cattell et al. 2008). However, as human geographers Söderström, Paasche and Klauser (2014, 318) claim, an 'alternative smart city exists' that does not exclude technological and economic aspirations but also considers social and political aims and impacts as equally important. In such an alternative smart city, technical implementations are small-scale actions, enabling more versatile citizens through design.

To define the smart city of Oulu as an assemblage, the intra-actions of human and non-human elements must be considered across temporalities, past, present and future, and across spaces, including embodied physical places as well as discursive and virtual spaces. This understanding broadens the idea of the smart city of Oulu because it does not exclude the urban history, citizens' biographies or everyday (offline) practices; thus, this perspective enables everyone in the smart city to be included.

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Research Material

Fieldwork notes from 2011–2015 taken after each interview and workshop.

ICT-biography interviews 2011. The interview material consists of 16 interviews with seniors. Two of the interviews were performed with a couple, and the rest were individual interviews. All interviews were conducted in Oulu.

Walk-along interviews 2013. The interview material consists of nine interviews with seniors. All interviews were conducted while walking through the city centre of Oulu.

Workshops 2013–2014, I–IV workshops. In the workshops, general discussions were carried out with the whole group, including groups of seniors, technology designers, researchers and city officials as well as mixed groups. After the workshop series, I organised an open seminar in August 2015 in which most prior workshop participants and other citizens participated.

All research material is in the author's possession. In the future, the anonymised transcriptions will be archived in the Finnish Social Science Data Archive in Tampere.

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