CO-CREATION AND SMART CITIES

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CO-CREATION AND SMART CITIES: LOOKING BEYOND TECHNOLOGY

BY

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CONTENTS

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LIST OF FIGURES

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Shenja, Le Anh, and Carina
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Chapter 1

INTRODUCTION

The city of Carouge (Switzerland) 'occasionally' engages in co-creation activities with citizens and other stakeholders – co-creation is viewed as a social network, meaning that if nobody participates, it is unlikely to survive.

The city of Eindhoven (The Netherlands) 'often' deploys co-creation to involve citizens, entrepreneurs, and organisations in developing policies and tailored projects, in particular. Co-creation is said to be a prerequisite for the well-accepted implementation and the functioning of the city's 'smart' services, especially those directed at improving the quality of life for its citizens.

The city of Helsinki (Finland) uses co-creation 'constantly', especially, to develop digital services and to open up data and application programming interfaces, as well as for urban planning activities.

Cities have different uses for and experiences with co-creation as is evidenced by these three illustrations[1] (Spagnoli, van der Graaf, & Brynskov, 2019). The concept of co-creation resonates with the increasingly citizen-centric discourse associated with the 'smart' city imaginary, a label which has been appropriated by many cities around the globe. While its exact meaning may not be easy distilled from relevant literatures that span various domains, such as media, urban and business studies, it seems to hold roots in, arguably, normative framings wherein technology plays primarily a facilitating role and signifies what it means for citizens to live in cities these days. Physical and digital boundaries of the city are said to have blurred facilitated by various technologies and infrastructures and, increasingly, shaped by information and communication technologies (ICTs) such as platforms and urban services provided by companies like Google (e.g., Waze). While gradually implicated in shaping the structures of our everyday lives in the city, 'the unique affordances

of platforms are said to signal an evolution of the socio-technical relationship between citizens and cities' (Lee, Mackenzie, Smith, & Box, 2020, p. 116), what has been termed 'platform urbanism' (Barns, 2020; van der Graaf & Ballon, 2019). Public and private organisations can tap value from this ever-more complex urban ecosystem, such as via emerging service models and tailored interventions (cf. Graham, Kitchin, Mattern, & Shaw, 2019; Parker, Van Alstyne, & Choudary, 2017). Moreover, as these ecosystems can record, quantify, and process enormous volumes of data derived from physical and digital spheres, all facets of our lives (e.g., our preferences, social relationships, and bodies) are being monitored and turned into datasets via everyday encounters and interactions with technologies like sensors and smartphones (cf. Lupton, 2018). While some welcome these developments, others point to the possible risks for citizens and society (Couldry & Yu, 2018; Zambonelli, Salim, Loke, De Meuter, & Kanhere, 2018).

Popular and academic debates have intensified on this dynamic associated with 'participation' and 'datafication', highlighting an apparent 'data fetishization' and the glossing over of human elements and agency in urban processes (van der Graaf, 2020). In today's desire to 'smarten up' emphasising citizens as integral to socio-technological processes – operationalised by the co-creation concept – that shape the urban environment, the investigation into the framing of citizen roles is warranted (cf. Kitchin, Cardullo, & Feliciantonio, 2019). The premise of co-creation for public administrations, such as cities, is to yield insights into how to better serve citizens by gathering information about their needs, preferences, patterns, and the like, guiding the creation and enhancement of sophisticated services, policies and other outcomes tailored to their needs. At present, most, if not all, smart city initiatives assert to be 'citizen-focused' or 'citizen-centric', which, arguably, may be more of a theoretical-normative instead of a materiality. Moreover, it seems to be challenged by an ongoing data-centred discourse that 'speaks' on behalf of citizens, as well as, in practice, some groups like children who are left behind (van der Graaf, 2020). It may, therefore, not come as a surprise that conceiving the role of citizens in the urban space has triggered a renewed interest in the 'right to the city' (Cardullo, Di Feliciantonio, & Kitchin, 2019; Lefebvre, 1968). The right to the city 'is not merely a right of access to what already exists, but a right to change it after our heart's desire' (Harvey, 2003, p. 939), underpinned by 'a new urban commons, a public sphere of active democratic participation' (p. 941) that is inclusive and collaborative.

This book seeks to contribute to the debate about the ever-increasing role of ICTs in cities and their inclusiveness of citizens, in specific. In fact, cities are possibly the most dynamic and important administrative units

today. They have a significant role to play in many of the complex challenges the world is facing, such as climate change, aging and migration. This places pressure on public administrations, to do more with less, especially at the local level where public services tend to have the greatest impact on people's everyday lives. At the same time, governments and society more broadly, are experiencing a fundamental shift associated with the rise of so-called platform economies and new consumption patterns, transforming public service development and delivery. With these, also the compositions of public values (e.g., privacy, accountability, transparency) are altering. Not only do city administrations work hard to keep up with these changes but also with shifting expectations of citizens and – motivated by a 'responsible innovation' perspective – explore ways in which they can meet these requirements with a more robust value-based perspective of public service development and delivery (Cluley & Radnor, 2020; Stilgoe, Owen, & Macnaghten, 2013). Co-creation is considered a valid means to support the 'balancing act' for cities and other public service organisations of putting forward efficient and cost-effective governance supported by endless 'smart' and 'collaborative innovation' solutions, as well as developing a citizen-centric focus that is sustainable (or, long-lasting) over time.

At present, a holistic approach is lacking for systematically achieving an equilibrium between the diverse interests that make up the multi-stakeholder and multi-sector setting of a city. In complex, diverse urban environments assigning active, coequal and structural roles to all involved has not been achieved despite the wide range of available technologies and methods, particularly, those associated with 'smart' city ideals (Breuer, Walravens, van der Graaf, & Mariën, 2019). This introduction, therefore, sets the stage by drawing out the current dynamics that materialise between citizens and the smart city concept, followed by an outline of the structure of the book.

1.1. 'SMART' CITY IN CONTENTION? PARTICIPATION, DATAFICATION AND RIGHTS

The urban concept of 'smart city' is widespread. In the 1980s, it emerged to denote changes in the urban realm related to ICTs and urban systems innovations. It was only from the 2000s that the term caught on as a planning and development paradigm central to the operations and governance, of urban space and, in extension, seems to support the (altering) basic principles of what it means to live in cities whereby, arguably, public space is 'translated'

into 'code', and 'code' can be seen to 'reshape' the urban space, or society more broadly (Kitchin & Dodge, 2011; Komninos & Mora, 2018). It should be noted, however, that to date, there is no agreement about nor is there a precise rationale and meaning of the smart city concept. Approaching it as a framework, a focus on pragmatic and functional aspects seems to come to the fore, accompanied by critiques (such as inclusion of vulnerable citizens, privacy) and ambitious solutionist-driven visions to tackle these gripping complexities (van der Graaf, 2020). Also, rather than being driven by a spatial vision, the smart city concept seems to hold more of a thematic orientation, such as citizen engagement, transportation, the environment, and public safety, thereby highlighting supporting axes of technology-driven and human-driven, top-down and bottom-up planning, as well as collective intelligence and data-driven intelligence in the smart city literature (cf. Hatuka, Rosen-Zvi, Birnhack, Toch, & Zur, 2018). Consequently, Breuer and Pierson (2021, p. 799) recently summed up:

> Despite the multifaceted debate around, and application of, the smart city concept […] What can be studied are manifold, diverse, sometimes overlapping, often siloed projects. They are mostly data-driven as well as local in nature, they address diverse aspects of urban life and governance, promising local government efficiency on a reduced budget […]. Many focus on technical aspects […]. These are often proof-of-concepts and experiments that could, potentially, enable citywide innovations. What this data may enable or solve is, however, vague and its potential assumed.

With technology and ICTs being paramount in the 'smart' functioning of the urban space comes the capacity of producing, processing, and extracting value from various data streams like people, households and urban areas. Concepts such as 'datafication' and 'datafied cities' are useful for pointing to such data-driven correlations (e.g., behaviour-spatial tracking) – the practices that are used to make inferences about participations, affiliations, and predispositions, and which come hand in hand with all kinds of ethical issues, such as about privacy, social sorting and nudging. Not only do these materialities of data regimes demand critical attention, but also the practice of changing people into 'data assemblages', where instead of people speaking for themselves, the data are speaking for them (van der Graaf, 2020; cf. Livingstone, 2019). It is in this setting that citizen participation has, more recently, pushed to the top rank on the agenda of 'smart city'-making, indicative of a seeming 'human/e' turn (Almeida, Doneda, & da Costa, 2018; Oliveira & Campolargo, 2015). Far from being a new practice, the conceptualisation of the term participation is ambiguous, associated with diverse

approaches and evaluations across domains (cf. Carpentier, 2016). In the smart city context, participation tends to be seen, or to occur, within the confines of a small-scale, local project and, hence, tends to impact or contribute to democratic processes in this capacity. Notwithstanding the diffusion of interest in participation, the smart city literature centre-stages the role of citizens, their communities and social capital in general in its technological innovation trajectory, thereby highlighting mantras like 'citizen-focus' and 'citizen-centric' in support of this vision (cf. de Waal & Dignum, 2017). In this way, city-making involves a multi-stakeholder approach to enhance the cities' capacity to learn, innovate and transform.

Consulting the literature on participation – adjacent to the discourse on 'citizenship' – and the degree to which citizens participate in urban life has shown, however, that they seem largely excluded (Mosco, 2019), put aptly by Kitchin, Cardullo, and Feliciantonio (2018, p. 11):

> […] most often occupy non-participatory, consumer or tokenistic positions and are framed within political discourses of stewardship, technocracy, paternalism and the market, rather than being active, engaged participants where smart city initiatives are conceived in terms of rights, citizenship, the public good, and the urban commons. […]. If there is civic engagement it is in the form of a participant, tester or player who provides feedback or suggestions, rather than being a proposer, co-creator, decision-maker or leader.

Furthermore, in the literature – alongside the stream of thought concerned with the 'datafied city' – citizens tend to be labelled not only as citizen but are also referred to by terms including 'user', 'data point' and 'surveilled subject', downplaying the role citizens play, or rather, making it perhaps implicit. This resonates with the so-called 'participation society' premise where public-sector reforms (motivated by cost savings, efficiency, and so forth) place greater responsibility on citizens while, simultaneously, asking citizens to contribute to governance endeavours more diligently (Buijs et al., 2019) – a marketisation of sorts the dynamics of which have brought questions about the social (in)justice of city living (Mitchell, 2003) back into play. And with this, a 'right's turn' including debates around data protection, sparked by a renewed interest in people's agency. In this environment where interest in different, interlocking rights is being mobilised, citizens and government play a crucial role in ensuring that rights are acknowledged and realised.

The concept of 'rights' is itself fuzzy and ill-defined. One of the main questions concerning rights is *who* possesses them. By participating, citizens make a claim on their 'right to the city', and when they engage with and reshape

space, citizens exercise their right to appropriation (Lefebvre, Kofman, & Lebas, 1996; Purcell, 2002). Essentially, Lefebvre's notion of the Right to the City (Lefebvre, 1968) paints citizens as important actors who actively participate in decision-making processes that shape urban development (Kitchin et al., 2019; Purcell, 2002). Activity in the smart city centres as much on data as it does on citizens, who the new technologies and methods target for more intense participation in decision-making on urban development. Yet, as mentioned, this conceptualisation of citizenship rarely materialises in practice. The emphasis on rights, particularly in urban contexts, is reinvigorated by the increasing digitalisation of urban landscapes. More specifically, the debate around what constitutes the right to the city (Lefebvre, 1968) has been revitalised in light of the increasingly contested nature of information and personal data, how it is produced, used, owned, stored, and explained.

Thus, there is an overlap between the discourse on the rights to the city in an era where cities are trying to 'smarten' up and supranational mobilisation for the recognition of fundamental rights to privacy and data protection (Edwards, 2016; Loideain, 2019). These latter rights have become enshrined in the EU's General Data Protection Regulation (GDPR) of 2016. The right to be informed and to be forgotten are just two among the bundle of rights embodied by the GDPR. In this regard, Foth, Tomitsch, Satchell, and Hank Haeusler's (2015) articulation of the concepts of use, usage and usability provide a nuanced view on the relationship between citizens and technology, this view aligns with ideas and ideals that lie at the core of the continent's data protection policies like empowerment, self-determination, accountability and transparency (see also 'privacy impact assessment' in Breuer & Pierson, 2021). These ideas also align with the spirit embodied in the right to the city, which is also geared towards citizen empowerment albeit in a broader sphere.

There are also, however, important deviations between Europe's data regime and ideas encapsulated by 'the right to the city'. For instance, the GDPR places the individual at the centre with its focus on the right to privacy and the right to self-determination (Cohen, 2019). This stands in contrast to the emphasis on community empowerment within the discourse on the 'right to the city'. Neglecting community leads to the design and deployment of projects that reduces the citizen to a passive actor; the citizen-as-user is a subject of technical experiment and not an equal stakeholder of the value being co-created. Projects that leverage this view tend to emphasise corporate interests in, for example, trying to reckon with the introduction of GDPR and developing technologies while foregoing direct consultation with citizens as data-subjects (Breuer & Pierson, 2021). Thus, the smart city rhetoric can be

critiqued for disguising inequality and to act as a 'boosting mechanism' in promoting the 'smart city' as a business model instead of benefitting social justice and is said to be deeply embedded in the neo-liberal ethos (Hatuka et al., 2018). Furthermore, the growing control of (local) governments over their citizens is called into question, such as in terms of data/surveillance and also the increasingly complex ('black box') public–private platform-based ecosystem (De Lange & De Waal, 2019).

In sum, the contradictions between collective benefits and rights, on the one hand, and the individualisation of responsibility and benefit, on the other, are increasingly becoming apparent (van der Graaf, 2020). These contradictions persist despite attempts to employ a range of participatory mechanisms (e.g., Living Labs, citizen science), because in the end, the mechanisms seem to work in favour of the projects themselves and less so the participants (Cardullo, Kitchin, & Di Feliciantonio, 2017). A citizen-centric view which neglects the networked nature of citizens, that is that their citizenship is primarily informed by their sense of belonging to a community, emphasises procedures and technologies and tries to find regulatory solutions to deep-seated societal problems like bias, fairness, accountability, and transparency (Kitchin, 2021; Townsend, 2013), possibly further stiffening those issues by supporting the social and institutional infrastructures that give rise to them (Cardullo et al., 2019). In light of the tendency to treat citizens as users rather than as equal stakeholders, the research community is increasingly interested in how different technologies, for example, platforms, shape the relationships that make up the socio-technical systems that we call 'smart cities'. This highlights the need for a shift in mindset whereby instead of seeing 'smartening' technologies as the main pathway to a better city, they are seen as a means of supporting a future city which emphasises values like fairness, tolerance, and wellbeing (Peña Gangadharan & Niklas, 2019). In this way, smart city technologies are reframed as part of a wider structure to address wicked problems like racism and inequality (cf. 'decentring smart cities' in Kitchin, 2021). Therefore, rather than an end goal, smartening up exists to reinforce social, economic, and environmental interventions in a context which while employing other means and methods also work towards equity, justice, and openness in the city (Morozov & Bria, 2018). Another strategy would be to more clearly delimit what we mean by public value in order to improve efforts to generate it (cf. O'Flynn, 2021). The premise of this book is that co-creation can be the point of departure that lies exactly at the intersection of relational and public value perspectives, which can be leveraged to achieve sustainable solutions that will be more just for all, benefitting our present and future communities, cities and society, at large.

1.2. OVERVIEW OF THE BOOK

The remainder of this book is divided into five chapters, which can be read consecutively from cover to cover, or each chapter can be read as a self-contained piece.

Chapter 2 – Co-creation has the potential to transform how we address deep-seated environmental, economic, and social problems, thereby allowing us to attain our aspirations for our cities and the communities housed within. In order to be meaningful, however, co-creation must consider mutual dependencies between all stakeholders, especially citizens. Chapter 2 does just that, by first reflecting on the concept of co-creation and considering it with respect to its relationship to similar concepts like co-production, co-design and user-driven innovation, recognising the different conceptual views in different disciplines. This discussion is then opened up with an interrogation into the possibilities for co-creation given the evolving relationship between citizens and the range of Public Service Organisations (PSOs) that make up city government. The chapter then launches into an exploration of the central challenges experienced by PSOs when embarking on a co-creation project and ends with a reflection on the approach's potentialities.

Chapter 3 – Design principles are necessary for overcoming the risks and challenges associated with co-creation. Here, *six guiding principles* ('6C Framework') *for concretely and effectively enacting co-creation with citizens* is presented. This framework can be used for assessing the current situation and reflecting on the aspirations of co-creators. Essentially, these guiding principles support the identification of a set of methods and tools (presented in more detail in Chapter 4) that cities can use to tailor their co-creation projects to the contexts in which they are embedded. The framework builds on insights offered by Service Design, Living Labs and Design-Driven Innovation. The 6C Framework distills and expands on the core principles of these three approaches, and is a useful guide for co-creators operating at different levels of governance. It offers a shared language and understanding of the foundational mechanisms for producing public value that can be internalised by stakeholders from all walks of life.

Chapter 4 – Numerous tools are available for co-creation, and their availability is both helpful and confusing. Cities need guidance on what tools to use, in which context, and at what phase of the co-creation project. This chapter does just that. Here, a concise and clear roadmap for implementing co-creation in cities is presented. The roadmap follows a series of specific phases, spanning from exploration to dissemination, and sub-activities within which several potential tools to be applied are mentioned. In this roadmap,