Reclaiming the Smart City: Toward a New Right to the City

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Abstract

This chapter explicates that the smart city is defined by a techno-utopian discourse, which presents smart technology as a value-neutral and rational tool in solving all kinds of urban problems. After analyzing several ethical issues relating to the smart city concept, Lefebvre's notion of the "right to the city" from the 1960s is examined. While the Lefebvrian "right to the city" is a utopian project, it offers an opportunity to reflect upon what an emancipatory and fair smart city should be like. We examine the current debate on the smart city by looking at three contemporary perspectives on the "right to the city." The chapter concludes by describing three trajectories that could lead to a more open, flexible, diverse, and participatory smart city, particularly in relation to issues of (a) participation, (b) communing, and (c) citizenship. These trajectories are illustrated by providing examples of different smart initiatives in the city of Barcelona.

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Introduction

Many cities around the world are seeking to become smart cities, as an increasing number of mayors believe that the only path forward for cities is making their infrastructure smarter through the use of novel technologies. The term "smart technologies" is an umbrella term used to denote technologies which are supposed to be intelligent, in the sense that they learn from the data provided, as well as take decisions on the basis of algorithms. Investing in smart technology is seen as the best way to avoid all kinds of economic, natural, and societal problems, ranging from high levels of air pollution to an increase in violent crimes and from democratic fallacies to rising traffic congestion. To make cities crisis and disaster-resilient, smart technologies are used to rationalize both the planning and governance of cities. As such, they provide the hardware and software to implement the features and functionalities of smartness. These technologies include city operating systems, centralized control rooms ("urban dashboards"), intelligent transport systems, smart energy grids, smart meters, connected sound sensors, video surveillance, Wi-Fi tracking, dynamic lighting, smell technology, and an array of smartphone apps and sharing economy platforms to collect and analyze data. As a result, the smart city is supposed to be the best strategy to face the challenges that the growth of urban population constitutes, in which 2.5 billion additional people could live in urban areas by 2050, guaranteeing more sustainability, prosperity, democratic participation, and public safety.

The rollout and use of smart technologies to control infrastructures and manage city services fits in a techno-utopian narrative in which technology is presented as the only way to adequately solve complex issues, what Morozov termed "solutionism" – a way of thinking that "presumes rather than investigates the problems that it is trying to solve, reaching for the answer before the questions have been fully asked" (2013, p. 6). Stated otherwise, within this techno-utopian narrative, technology is presented as a value-neutral, objectivist, rational, and evidence-based tool. This means that the use of smart technologies to improve local decision-making can be approached from a "nonideological" perspective (Kitchin and Dodge 2011; Sadowski and Pasquale 2015; Pali and Schuilenburg 2019; Schuilenburg and Pali 2021). Nevertheless, the use of smart technologies raises several ethical issues. These include, among others, large-scale surveillance of citizens, the erosion of privacy, lack of transparency and accountability, limited consultation of citizens into how smart technology is designed and implemented, control creep, privatization of public services, and issues around the ownership of data (e.g., Vanolo 2014; Keymolen and Voorwinden 2019; Kitchin 2019b; Sadowski and Bendor 2019). While smart technologies have the potential to deliver significant gains, these technologies are able to create new or exacerbate existing imbalances of power in our cities. As a consequence, there seems to be an emerging consensus that there is a need to rethink how smart cities influence the relation between power, space, and inhabitants of cities. The question that arises is how these ethical issues can be overcome or minimized. In this chapter, an answer to this question is sought through employing the "right to the smart city" discourse, following Henri Lefebvre and

many after him who have appropriated the idea of a "right to the city" as an alternative framework to rethink cities and urbanization.

The structure of this chapter is as follows. In the following paragraph, we discern three ethical concerns relating to the management of cities by smart technologies. Next, we offer a brief sociological introduction to Lefebvre's notion of the "right to the city" from the 1960s. This is followed by three current perspectives on the "right to the city." The chapter then describes three trajectories that could lead to a more open, flexible, diverse, and participatory smart city, particularly in relation to issues as (a) participation, (b) communing, and (c) citizenship. Finally, we illustrate these trajectories by providing examples of different smart initiatives in the Spanish city of Barcelona.

Ethical Issues of Smart Cities for Citizens

The rise of new forms of data analysis and the spread of urbanization are arguably two major global trends at play across the world today. In more functionalistic or practice-oriented literature on smart cities, there is a general acceptance that data analysis can lead to a better response to urban crises. As a consequence, data analysis has become a key component for formulating urban policies in smart cities, which form the nexus of data and urban governance. This is a triumph for proponents of the better use of extensive sources of data to better manage cities and persons' behavior in everyday life. Nevertheless, it is important to emphasize the growing concern that under the surface of the glossy prospectus of the smart city new problems can arise. These problems are related particularly to ethical concerns about the consequences of data-driven urbanism underpinned by an instrumental rationality. Against the background of the growing debate on the smart city, we discern three ethical concerns relating the management of cities by smart technologies.

First, although smart cities are not a prescriptive, top-down, corporate movement, its organizational structure clearly indicates a very much top-down management approach. In many cases, local governments have outsourced the planning and implementation of the smart city to private technology companies. In this approach, technological instruments are understood as purely instrumental (i.e., driven by a means-ends rationality) in order to improve, transform, and strengthen the governance of the urban system in fundamental ways. One of the consequences of this technocratic perspective, which is based on market-values, is a lack of participation by citizens in smart initiatives. Although many smart cities call themselves "citizen-centric," Cardullo and Kitchin (2019a) point out that inclusive and empowering citizen involvement in key decision-making is difficult to achieve in practice. This means that citizens are still passive rather than active actors in smart city initiatives. In response to the common claims to be putting "the people" or "citizens" at the heart of the resulting activities, Cowley et al. (2018, p. 72) conclude that "the smart city does not yet evince a convincingly rounded sense of the 'public city.'" In fact, possibilities for smart city technology to enable or engender more political participation appear to have remained largely unexplored in practical terms.

Second, despite all of the advantages that smart cities provide us with, another growing concern is that citizens have little say over how their (potentially) personal data is collected and used (Galič and Gellert 2020). While data has the potential to deliver significant gains, it also leads to ethical and normative questions, such as: "Who decides what data is collected, who it is shared with, and how to ensure that its generation and use does not result in the erosion of privacy for citizens?" Moreover, while smart cities highlight the importance of the social aspect and quality of life, many of them do so by excluding a part of the population with limited access to technology and by stripping off the particularities of the existing urban fabric (Galič 2019; Toli and Murtagh 2020). Citizens who are involved in smart initiatives come from "well educated, technology savvy groups, something that is reflected in the fact that most urban hackathons, boot camps or urban living labs are often targeted at students, IT professionals, activists or civil servants" (Engelbert et al. 2019, p. 348). Another aspect of the digital exclusion of certain groups is the knowledge necessary to participate. According to various authors, bridging the digital divide is something to take into account for a full implementation of the smart city.

Third, public safety and security are often key drivers for implementing smart technologies (Lacinák and Ristvej 2017; Schuilenburg and Peeters 2018; Pali and Schuilenburg 2019). The importance of securitization in smart cities is shown by the strong focus on elimination of disorder and conflict. Advocates of the use of smart technologies claim that these technologies enable better protection against the dangers of criminality and disorder from tracking, searching, and detecting suspects to proactive crime prevention by identifying crime hot spots and the use of predictive policing. Coupled with the trend of datafication, in smart cities "people are now subject to much greater levels of intensified scrutiny and modes of surveillance and dataveillance than ever before, with smart city technologies providing deeply personal pictures of individual lives" (Kitchin 2016, p. 31). Several critics have emphasized the risks of smart technologies for privacy, discrimination, and marginalization of certain groups along income and racial lines, due to the fact that crime data reflect longstanding institutional biases (e.g., Harcourt 2007; Monahan 2017; Smith et al. 2017; Peeters and Schuilenburg 2018; Keymolen and Voorwinden 2019; Pali and Schuilenburg 2019).

As cities become "smarter," scholars have pointed out that the use and role of technologies in smart cities need to be addressed further. Concrete practices may differ, but there is a need to respond to the ethical concerns described above. This is illustrated more recently through calls for a "right to the city" in response to the increasing use of the smart city concept. Yet, what exactly does a "right to the city" mean? The work of the French philosopher Henri Lefebvre can serve as a starting point here.

Lefebvre's Right to the City

While the "right to the city" is both an immediately understandable and intuitively compelling slogan, it is also a theoretically complex and provocative concept. Lefebvre's original articulation of the right to the city from the 1960s is a very open concept, describing an arena of struggle rather than a precise political program (Purcell 2002). Lefebvre developed the notion of the right to the city in a particular urban and political context. Since the late 1960s, he devoted himself to the analysis and criticism of the state and the capitalist production mode particularly through Marxist methods and concepts. What is particularly notable and new about this is that he criticized them in and through space, highlighting the political aspect of urban space as both a political product and a possible instrument of change (Busquet 2019, p. 2). The late 1960s were a time of a technocratic French central government, which had built huge public housing complexes at the outskirts of large cities and then deported the working classes and migrants to these newly built suburbs (*banlieus*). Lefebvre argued that struggles for the city – that is: struggles for the right to the city – are vital to any emancipatory politics of space. In this particular context, the central qualities of the city that frame Lefebvre's conceptualization of the right to the city come to reveal themselves.

The first such quality is "centrality" of the city. By centrality, Lefebvre refers to the role of the historical center as a place of festivity, entertainment, and meeting, as well as simultaneous social practices based around its monuments, squares, and streets. These types of activities enable the city to become "an oeuvre," a collective creation of society, which – in turn – caters to citizens' needs in terms of meeting, getting together, and recreation (Lefebvre 1968). This centrality must facilitate surprise, the unexpected, meeting, and difference; a wealth of "social capital," as Jacobs (2011) put it. In other words, the central public space of the city is important because it provides an opportunity – also in terms of physical space – for interpersonal communication and social encounters between strangers and near-strangers that make a community possible.

This is closely connected to the "right to difference," a right, which Lefebvre added to the right to the city in 1970 (Lefebvre 1970). A right to difference is a right to create a different city, composed of differences, in terms of lifestyles and ways of living. It creates an inclusive space, where "differences encounter, acknowledge, and explore one another, and affirm or cancel out one another" (Lefebvre 1996). This right stands in opposition to the forces of abstraction and homogenization of space (including everyone that inhabits it) produced by a bureaucratic capitalist system. The city as an oeuvre, an open space of sociability, is thus an environment that encourages mingling and encounters between people of different classes, races, ages, religions, ideologies, and cultures, where the function is to make diversity agreeable or at least manageable. While codes and conventions that informally regulate behavior in public space can function in a repressive manner – stifling social difference rather than enabling it – the openness of access and flexibility of use of public spaces (e.g., parks, neighborhoods, libraries) allows for a fluidity of

negotiations among persons and groups. In this way, the right to the city becomes a bulwark against standardization and uniformization of space and everyday life.

In practice, the right to difference results in a level of insecurity and disorder (Mitchell 2009). This is echoed in Sennett's writing on disorder (1992), according to which a level of disorder and difference in the city is needed, because it forces us to engage with "otherness," to go beyond one's own defined boundaries of self. In this sense, public spaces are also key sites of politics, through which potential hostilities can be defused by providing the possibility for antagonism to be transformed into "agonism" (Mouffe 2005). According to Mouffe (2005, p. 125), overemphasizing consensus, coupled with an aversion to confrontation "engenders apathy and disaffection with political participation." A well-functioning democracy therefore calls for a confrontation of democratic political positions.

Third, Lefebvre's right to the city signifies an entitlement of inhabitants to appropriate their day-to-day lives as city dwellers and a basic human right in society. Appropriation refers to the production of urban space as a creative and fulfilling aesthetic experience, which encompasses the "full and complete usage" of space by its inhabitants in their daily routines, work practices, and forms of play (Iveson and Fincher 2012, p. 408). Citizens thus not only have the right to physically occupy and use space but also a right that space should be shaped according to its inhabitants' needs. Accordingly, realizing this right in practice depends on the right of inhabitants and other city dwellers to participate in urbanism projects and political decisions. Participation requires that city dwellers manage the production of urban space themselves – what Lefebvre called "autogestion" (sometimes translated as self-management). Lefebvre's notion of autogestion is a form of political practice, which presupposes processes of direct democracy (including commons and other grassroots initiatives) and the "relentless undermining of centralized bureaucratic decision-making" (Butler 2012, p. 143). It is an active political process that is not satisfied by either abstract models of transparency and public interest, or a retreat to pure dialogue between profoundly unequal parties. Already in the 1960s, Lefebvre lamented that participation is often invoked in city politics but rarely practiced seriously (Busquet 2019).

In short, we can recognize three themes or qualities of the city as an oeuvre: it is open and flexible (in terms of access and use), different (in terms of a level of disorder and conflict), and participatory (in relation to self-management of production of urban space). In this sense, the right to the city is also not a single right but a multitude of rights, which includes a right to the center, a right to participation, and a right to difference. In fact, we need to speak of a *totality of rights*, "a complexity, in which each of these parts is part of a single whole" (Marcuse 2009, p. 193). This means that winning one does not yet mean having the right to the city. For example, a homeless woman in Rotterdam has not won the right to the city when she is allowed to sleep on a park bench in the center. Rather, the core promise of the right to the city is that all inhabitants and other city dwellers have a right to full participation in urban life as equals (Iveson and Fincher 2012, p. 408).

Contemporary Lenses to the Smart City

The right to the city has recently been making a comeback in academia, especially by scholars such as David Harvey, Don Mitchell, Peter Marcuse, Edward Soja, and Mark Purcell. Addressing the openness or fuzziness (Merrifield 2017, p. 14) of the original articulation, these scholars have been appropriating Lefebvre's thought and rearranging it in their own way, with their own particular approach to the unfair and emancipatory dimensions of urban space. In particular, they have been trying to transform the right to the city into a more practical notion, in order to identify and address the injustices of contemporary capitalist urbanization. As such, these accounts can be particularly useful when thinking about a "right to the smart city" as a concrete project.

This section will explore the thought of three thinkers that have been particularly influential in putting Lefebvre's concept of the right to the city on the agenda for urban studies: David Harvey, Don Mitchell, and Mark Purcell.

(a) *Harvey's Right to the City*

Urban and political geographer David Harvey borrows Lefebvre's right to the city and adapts it to the contemporary capitalist, financialized, and neoliberal world. There is a lot of common ground between Harvey and Lefebvre. First of all, both are Marxist thinkers, who argue that capitalism leads to problematic models of urbanization that continue and exacerbate urban inequality. For instance, they lead to the displacement of the poor to the periphery, the creation of gated communities and central urban spaces meant exclusively for consumption (Harvey 2008, p. 32). Since the urbanization and production of space – how it is made and how it works – are necessary for the survival of capitalism, which strives for the production of surplus value, public space has become one of the foci of class struggle. Finally, both scholars argue that the right to the city is the solution to the problems of capitalist production of space, and that it is a matter of collectively reappropriating cities and their centers in a way that transforms everyday life. Nevertheless, there are considerable differences both in the understanding of the right to the city and in their political implications.

The key difference between the two lies in the status of the right to the city: whereas it is only one of the components of the socialist revolution for Lefebvre (and one that does not yet exist), it is an end in itself for Harvey. According to Harvey, the right to the city can be achieved within the framework of capitalism, in fact, it is already in existence. However, the right has been monopolized by "a small political and economic elite who are in position to shape cities more and more after their own desires" (Harvey 2008, p. 38). The right to the city then is the tool through which inequalities are reduced and more democracy is created. It is a right according to which the people who build and sustain a city should have a right to residency and to all the advantages they have spent their time building and sustaining. Moreover, "[i]t's not just a right to the existing city, but a right to actually transform the city so that we don't end up with consumer palaces for the rich and high-end condominiums in

the centre of the city" (Ahmed and Harvey 2012). For Harvey, the right to the city would thus be imposed by the most destitute populations of the city. As such, Harvey defines the right to the city largely in economic terms and condensed it into a singular "democratic right to control [the production and utilization of] the surplus" (Bela 2014, p. 161).

Finally, Harvey envisions the practical application of the right to the city on a global rather than a local scale. He asserts that the only effective opposition to global finance capital must be its equivalent in scale and unified purpose (Harvey 2008, p. 39). He seems to reject the recent proliferation of grassroots organizations, NGOs, social movements, undefined self-organizing groups, and DIY practices that populate the contemporary landscape of urban activism, as either ameliorative or self-defeating (Crawford 2011, p. 37). In his book *Rebel cities* (2012), he describes how the practice of commoning oftentimes plays out within the current capitalist framework. Using the High Line park in New York City as an example, Harvey observes that this development has had a "tremendous impact on nearby residential property values, thus denying access to affordable housing in the area for most of the citizens of New York City by virtue of rapidly rising rents" (2012, p. 75). Thus, paradoxically, "the creation of this kind of public space radically diminishes rather than enhances the potentiality of commoning for all but the very rich" (ibid.). Instead, Harvey seems to reserve his hopes for left-wing unions and parties, since their struggles have as their ultimate end the seizure of state power. However, their predetermined program and strategy can also reduce rather than expand the possibilities of a genuinely new politics of the urban.

(b) *Mitchell's Right to the City*

Urban geographer Don Mitchell appropriated Lefebvre's notion of the right to the city somewhat differently in his analysis of the links between the struggle for public space and demands for social and redistributive justice. In his effort to turn Lefebvre's "highly abstract and arcane" (Mitchell 2003, p. 17) thoughts into a more practical notion, he conceived the right to the city in a much narrower sense and as a set of legal rights.

Following Lefebvre, Mitchell (2003, p. 18) argues that the problem with the modern capitalist city is that it is a site of expropriation by a dominant class (and a set of economic interests) that is not interested in making the city a site for the cohabitation of differences. He argues that people have a right to more, that they have a right to "freedom, to individualization in socialization, to habitat and to inhabit" (Lefebvre 1996, p. 174). However, in an attempt to transform the right to the city a more practical notion, Mitchell focuses his analysis specifically on the latter two of these rights: the right to habitat and the right to inhabit. The right to "habitat" represents a right to a place and an ability to make a life for oneself. In turn, the right to "inhabit" implies a right to housing; that is, to make that place one's own (collectively, rather than in terms of private property), to dwell, and to have a right *to be* in place (Mitchell and Heynen 2009, p. 615). To put it simply, to have a right to sleep, a place to urinate and defecate without asking someone's permission, to relax,

a place from which to venture forth. According to Mitchell, these two rights are a necessary condition with respect to other rights of the city, that is, the right to freedom and to individuation in socialization. While guaranteeing these two rights is not sufficient to achieve the right to the city, it is a necessary step toward guaranteeing it (Mitchell 2003, p. 19). In this narrower conception, the right to the city thus becomes connected to very concrete struggles for rights to housing, food security, and other material things that make living possible.

This reflects Mitchell's focus on the question of "whose right to the city?." In his 2003 book, *The Right to the City*, he focuses on the right to the city of the most marginalized communities, especially the homeless. In fact, for the homeless, the right to the city is less about alienation (although it is also about that) and more about surviving in a "vengeful geography of immediacy" (Mitchell and Heynen 2009, p. 617). Through anti-homeless laws, stepped-up policing, the privatization of public space, increased surveillance, and the pressure to close or relocate services for the poor and hungry, the possibility of homeless and other poor people to *be* in (North American) cities is seriously delimited. As Mitchell and Heynen (2009, p. 617) write: "Ironically, perhaps no one *inhabits* the city as thoroughly as a homeless man or woman. But this inhabitation is the exact opposite of possessing a *right* to the city" (emphasis in original). In this context, the right to housing or to inhabit the city demands more than houses and apartments; "it demands a redevelopment of the city in a manner responsive to the needs, desires, and pleasures of its inhabitants, especially its oppressed inhabitants" (Mitchell 2003, p. 21). This right also requires visibility – and therewith representation – of the homeless and the hungry, so that public space can function as a space in which urban "others" can be seen and recognized (Mitchell 1995).

More recently, Mitchell confirmed that the right to the city is not just or mainly a right of the most marginalized groups in society. Following Peter Marcuse, he broadens the right's scope: it is a "demand" of the excluded for the material necessities of life and a "cry" of the alienated with an aspiration for a broader right to what is necessary beyond the material to lead a satisfying life (Mitchell 2018, p. 8; Marcuse 2009, pp. 190–191). Yet, like Marcuse, he argues that the struggle for the right to the city must necessarily be understood through a hierarchy of needs, demands, and cries. In this sense, the right to the city should first be seen as a fight for the deprivation of the excluded (e.g., the homeless and migrants) and the exploited (the working class). Therefore, the right to the city cannot (only) be a struggle against alienation but must first and foremost be a struggle for achieving a material right to the city for the deprived and oppressed (Mitchell 2018, p. 9).

(c) *Purcell's Right to the Global City*

Like Harvey and Mitchell before him, geographer Mark Purcell also reasserts the right to the city in terms of demands for more (direct or radical) democracy and opposition to neoliberal capitalism. He does so by interpreting Lefebvre's right to the city as a potential basis for the replacement of formal notions of political citizenship

with a broader concept of spatial citizenship – what he calls the "right to the global city."

Purcell argues that the "liberal-democratic/Westphalian" model of citizenship, which generally limits citizen participation to systems of electoral representation and sets up the sovereign nation-state as the supreme political community, is too limiting a structure through which to resist the increasing power of capital over material life (Purcell 2003, p. 564). According to Purcell, this traditional conception of citizenship has become destabilized due to the restructuring of the global political-economic context. Particularly after the 1970s, economic activity is increasingly organized at a range of scales both larger and smaller than the national scale – what scholars have referred to as the "glocalization" of economic activity (e.g., Swyngedouw 2004). In short, as production and finance expanded to an international scale, the national state lost its status as the dominant center of political authority and sovereignty. It has been replaced by transnational corporations, which have shifted economic coordination to the local and regional scale of the (global) city (Purcell 2003, pp. 568–569). As a consequence, a citizenship regime flowing from legal membership in a nation-state has lost a lot of its power to have a say in the production of urban space and everyday life. In order to resist this growing dominance of capital in the contemporary global economy, new notions of citizenship should therefore be developed.

Purcell argues that a type of spatial citizenship based on Lefebvre's right to the city offers a particularly promising type of citizenship that would pose a direct challenge to capital. Citizenship, which involves rights, duties, and membership in a political community of some kind, can come in different forms: formal (e.g., state-based or supranational, such as European Union citizenship) and informal (e.g., spatial citizenship). This citizenship – which he calls "the right to the global city" – would be based on inhabitance. That is, it would be gained through everyday inhabitance in the city, rather than on nationality. This alternative model of citizenship would recognize a right to spatial appropriation in order to ensure that the production of urban space meets the needs of its inhabitants and maximizes its use values, rather than its exchange value, as happens with the capitalist mode of production of space (Butler 2012, p. 150). In order to achieve this, such spatial citizenship would entail a significant expansion of participatory mechanisms, which are crucial in order to enhance collective involvement in decisions that produce urban space. In practice, this would involve giving inhabitants a say in all decisions that produce space in the (global) city, including those practices that are determined outside the boundaries of the formal state apparatus, particularly by transnational corporations. For instance, it would confer city inhabitants some control over investment decisions of large corporations, such as decisions to close and relocate factories, which profoundly impact the employment geography of the city. These broad participatory powers would enable urban inhabitants to gain opportunities to intervene in the making of state policies, corporate investment decisions, and directives of multilateral institutions (Butler 2012, p. 150). Unfortunately, Purcell does not offer any more concrete guidance as to how such spatial citizenship could be enacted in practice.

The Right to the Smart City

Previous sections have shown that the logic of smart cities in many ways directly opposes the idea(l)s of the right to the city. Smart cities are a recent representation and expression of a thoroughly neoliberal approach toward the production of urban space, which values space predominantly for its exchange value, and prioritizes private property rights over other claims. The city itself, its infrastructure and services, has become a market and a laboratory for social and technological experimentation. Smart cities generally seek to create neat, predictable, and standardized spaces and relations, where citizens are to be steered, nudged, and controlled. If there is a civic contribution, it is limited to the form of a participant, tester, or player who provides feedback or suggestions, rather than being a proposer, co-creator, decision-maker, or leader. Is it nevertheless possible to reframe the arena of decision-making in smart cities in line with a sort of "right to the smart city"?

Following a number of characteristics drawn from the right to the city, urban geography scholars have indicated several possible trajectories that could lead to a more open, flexible, diverse, and participatory smart city, particularly in relation to (a) participation, (b) communing, and (c) citizenship (e.g., Kitchin 2019b; Cardullo 2019; Morozov and Bria 2018; Shaw and Graham 2017).

(a) *Participation in and Reappropriation of Information Production*

On the most basic level, the smart city would need to be orientated toward reflecting and serving the interests and needs of citizens, rather than the interests of the market and the (neoliberal) state. In order to be able to identify these interests and needs and to do this in due time, a more inclusive and deliberative framing of citizen participation is needed, one that would go beyond the current tokenistic civic engagement. This could include more extensive public consultation, collaboration, and coproduction, where citizens would occupy roles such as creators, members, and leaders (Kitchin 2019b, p. 196). However, it remains somewhat unclear what exactly this means in the context of the smart city, where technology permeates the city both through physical embedding (e.g., placing sensors on posts) and abstract representations (e.g., online digital maps). The right to the smart city seems to first require the right to access to the data that is being captured and to information concerning types of data analytics performed on them, and for which purposes. But it also seems to go beyond this, including a right to *produce* information, as Lefebvre (2014 [1989], p. 205) himself indicated. Within existing smart cities, citizens are most often producers of data only in an indirect manner as their locations, habits, emotions, desires, etc. are captured from them, oftentimes in opaque ways and for purposes unknown to them. (This can be placed within the broader framework of production and use of data under advanced capitalism, referred to by Morozov and Bria (2018) as "data extractivism" and as "data colonialism" by Thatcher, O'Sullivan, and Mahmoudi (2016).) In the best-case scenario, citizens act as "sensor nodes" (Gabrys 2014), where the citizen is a collector or provider of information on behalf of city

governments with predetermined goals (e.g., people carrying small pollution sensors as they drive or cycle around the city in order to create pollution maps of the city).

The right to produce information, therefore, seems to imply a need for citizens to reappropriate and self-manage (in terms of autogestion) the information they produce, and to do this in a manner that is both enjoyable and sustainable (Shaw and Graham 2017). This is close to the notion of "technological sovereignty," which denotes citizens' capacity to have a say and to participate in how the technological infrastructure around them operates and what ends it serves (Morozov and Bria 2018, p. 22). Some have gone even further, suggesting that Lefebvre's right to the city demands a (gradual) reclaiming of urban technology from corporations to shared ownership by citizens, taking over the production and management of these technologies and thus incrementally working toward the withering away of technology monopolies (Anastasiu 2019, p. 245). This would enable a high level of transparency about the algorithms used and, in view of the increasing use of machine learning, about the kind of data used to train these new technologies. Although this does not in itself solve the "black box" type of functioning of machine learning, researchers are already working on explainable algorithms (see, e.g., Barredo Arrieta et al. 2020).

Participation that requires a higher level of digital literacy, which is needed in order to reappropriate and self-manage information one produces in the smart city, will likely be easier for people with higher levels of education and technological skills. Smart cities should thus also be involved in and offer programs promoting digital literacy, particularly among marginalized communities. However, in order for smart cities to really function in a widely inclusive manner (also for those that cannot or will not learn digital skills), they need to include and preserve possibilities to produce (and self-manage) information through nondigital means, thereby also preserving the possibility to identify and address "non-technological" types of urban issues and solutions.

(b) *Grassroots Initiatives and Communing*

Lefebvre (2014 [1989], p. 205) pointed out that the city needs to fully embrace – in fact, set as a "key priority" – commons and other grassroots urban initiatives, allowing the appropriation of space for various (nonintended) uses. Grassroots initiatives are those initiatives in which the goals and the means through which these are to be achieved are developed by the citizens themselves in an open manner; that is, bottom-up. Related to this, urban commons refers to common resources managed and sustained by collective agencies (McLaren and Agyeman 2015, p. 13). The smart city as a commons would thus be a shared environment with shared resources. In fact, several scholars put an emphasis on "commoning," a set of practices which "actively seek to integrate resources from the state and capital into commons circuits" (Birkinbine 2018), highlighting the long-term project of the commons, as well as the active social relations between people as they become enmeshed with the social and physical environment they dwell in. Commoning then makes the community operative (thus enabling passive consumers to become active citizens), an endeavor rooted in trust, as it connects at least two things: a place where

people actually live and projects that are engaging because they are deemed useful for and by the inhabitants themselves (Cardullo 2019, p. 93). As such, commoning and other grassroots initiatives can lead to the identification of a wider variety of citizens' actual needs and interests, enabling all types of projects, both those that are (digital) technology-focused and those that are not.

Commoning can include, community gardening, housing and retail cooperatives, flash mobbing and other shock tactics, social economies and bartering schemes, "empty spaces" movements to occupy abandoned buildings for a range of purposes, subcultural practices like graffiti/street art, skateboarding, creating local internet provision, and so on. As Iveson (2013, p. 942) put it, enacting the right to the city is a matter of building "cities within the city," by both declaring new forms of authority based on a presupposition of equality of urban inhabitants, and finding new ways to stage a disagreement between these competitive forms of authority. Moreover, the idea here is not to fully institutionalize such grassroots initiatives; rather, the idea is to enable and promote their informal existence, as only informal activities allow urban life to flourish. Such informal bottom-up initiatives are already flourishing in many parts of the world, addressing small and local needs that the market economy and state power are unable or unwilling to meet (see, e.g., Bollier and Helfrich 2019; McLaren and Agyeman 2015).

(c) *Broader Notions of Citizenship and (Re)municipalization of Essential Public Services*

Finally, taking the right to the smart city seriously requires taking a step back from citizenship grounded primarily in market principles (even if formally grounded in nationality) toward broader – formal and informal – frameworks of citizenship underpinned by a set of spatial, social, political, symbolic, and digital rights and entitlements (Kitchin 2019b, p. 196). Purcell's idea of spatial citizenship, where rights and obligations stem from inhabitance rather than nationality, is a good starting point. Essentially, this requires that citizens (that is, all inhabitants of a particular city no matter of nationality) should have a central place in the decision-making that affects the production of their space. Considering the complex nature of global cities and finance, especially when such rights are not backed up by hard law, putting these ideas into practice is no simple task. However, one concrete possibility that could be of use here would be to turn essential public assets into a type of commons.

According to this idea, key public assets, such as core urban infrastructure and public services, should form a type of commons, so that they might be protected against the interests of capital and thus leveraged for the common good. This would include the digital infrastructure (and the data) that are central to the smart city, thus enabling citizens to actually reappropriate information production and to meaningfully participate in the decision-making (as discussed sub-section (a) above). However, such technically and infrastructurally complex provisioning cannot be done solely by citizens (that is, all inhabitants of a particular city) themselves. This is also so, because the struggle and implementation of the right to the smart city cannot fall

solely on the shoulders of the citizens, leading in practice to a very demanding second job – a tall and undesirable order to fulfill.

In practice, the process of transforming key public assets into commons might include public commons partnerships between city and urban cooperatives and movements, remunicipalization of services, where these have been privatized (e.g., public transport), and municipalization of other critical infrastructures, such as internet provision (Cardullo 2019). As such, the role of the municipality here is crucial, if uncertain, especially considering its general complicity in the neoliberal program so far. The city thus needs to fully participate in the right to the smart city by drawing and implementing policies that would support the inclusion of communities, devolving the power to citizens, and enacting forms of open and democratic governance. A good example of such a city policy can be found in the example of Barcelona, which is discussed in the concluding section.

Conclusion and Reflection

We have described the smart city as a project strongly defined by a techno-utopian discourse, which presents smart technology as a value-neutral and rational tool in solving all kinds of urban catastrophes. Smart technologies generate enormous amounts of data and by making use of Artificial Intelligence (AI) and Machine Learning (ML) smart cities could revolutionize the way everything is managed, from traffic jams to healthcare services and from waste collection to crime and disorder. After analyzing several ethical issues relating to the smart city concept, Lefebvre's notion of "right to the city" from the 1960s was examined. The Lefebvrian right to the city is a moral claim, an ideal and a revolutionary strategy, rather than an institutional right. Lefebvre specifically resisted framing the right to the city as a legal entitlement because he envisioned it as a means for contesting both state power and legal individualism through the transformation of urban space and the institutions that govern it. While the Lefebvrian "right to the city" is a utopian project, it should be seen as a "concrete utopia" – representing "the anticipatory striving towards possibilities that are latent within the present" (Butler 2012, p. 133). This means that with the growth of smart cities both in numbers and in size, we have an opportunity to reflect upon what a modern city should be like. Therefore, we have examined the current debate on the modern city by looking at three contemporary perspectives on the "right to the city" in order to identify and address the injustices of contemporary smart urbanization. Finally, we have described three trajectories that could lead to a more open, flexible, diverse, and participatory smart city, particularly in relation to issues as (a) participation, (b) communing, and (c) citizenship.

The most ambitious program to a more open, flexible, diverse, and participatory smart city to date has sprung up in Barcelona, where the government and its inhabitants determine their own priorities in terms of the direction and use of technological innovations, with clear social benefits and public returns (e.g., Capdevila and Zarlenga 2015; Angelidou 2016; Cardullo and Kitchin 2019b). Barcelona's ambitious plans show that there is a strong commitment to reimagine

the smart city beyond a narrow instrumental focus by using open source technologies. The city council has also appointed a commissioner of Technology and Digital Innovation to lead the public project for the city's digital transformation. The key elements of the Barcelona smart city strategy include, among others, new services for citizens as well as open data and open innovation platforms. An important platform is Decidim ("We Decide," in Catalan), a digital infrastructure for participatory democracy that allows Barcelona's citizens to see and discuss proposals put forward by the city government and submit their own. Decidim is used to create Barcelona's government agenda, with over 70% of proposals coming directly from over 40,000 participating citizens (https://mobility.here.com/learn/smart-city-initiatives/barcelona-smart-city-people-people (Accessed 18 August 2020)). Following other cities in Europe, Barcelona has made public data publicly available through the Barcelona Open Data Portal, adopting the idea of "technological sovereignty" as a new form of citizenship. It engages strongly with an ethical data strategy, where privacy, transparency, and collective rights to data are key values. The city also encourages the adoption of citizen-driven innovation policies by engaging citizens throughout the decision-making process: defining the action plan, participating in its execution, and evaluating the project afterwards.

The need for greater ethical responsibility has grown more urgent with the reliance on smart technologies, which control infrastructures and manage city services. However, in the smart city context, ethics is a subject that has as yet not been fully addressed. This raises the question whether or not examples such as Barcelona are an empty signifier, designed to give the impression that they take ethical concerns about the smart city seriously. The efforts of municipalities to deal with ethical issues relating to the smart city can enact "ethics-washing" (Wagner 2018) in order to avoid more fundamental questions. According to Kitchin (2019a), "with ethics-washing, a performative ethics is being practiced designed to give the impression that an issue is being taken seriously and meaningful action is occurring, when the real ambition is to avoid formal regulation and legal mechanisms." As such, it is necessary to be critical of the construction of smart cities because they can significantly affect the rights of their inhabitants. There remains a strong need to evoke an ethical dimension relating to the use of smart technologies which may undermine the essential values of citizenship. The ethical perspective of smart technologies encompasses economic, social, cultural, and democratic dimensions, and is not limited to a technological context in which technology is seen as the only way to ameliorate cities problems. This fits in the politics of the "right to the smart city" agenda.

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