Human rights and the city: Including marginalized communities in urban development and smart cities

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Institute for Human Rights, University of Alabama at Birmingham

ABSTRACT

The idea that the city belongs to all individuals inhabiting the urban space is grounded in the Universal Declaration of Human Rights and the New Urban Agenda, and it is referred to as "right to the city" or "rights in the city." This article discusses how human rights relate to the city and its inhabitants, examines the meaning of the right to the city and human rights in the city in today's urban environment, and deliberates how to transform cities into spaces that reflect fundamental human rights principles. By looking at the situation of marginalized groups in cities, the article focuses on the questions of how to build inclusive, fair, and accessible cities and how to eliminate inequalities seen in urban communities. Because technology is often cited as one way to foster integration of marginalized communities, special attention will be given to the smart city and the opportunities and challenges presented by information and communication technologies (ICTs) for human rights, accessibility, and inclusion. Using the case of persons with disabilities as an illustration, the article argues that urban development needs to be fundamentally transformed to live up to human rights standards. Only a multi-stakeholder urban design process will produce truly inclusive urban spaces that fulfill the right to the city.

Introduction

As of 2016, an estimated 54.4 percent of the world's population lived in cities. By 2030, urban settlements are projected to be home to over 60 percent of the population, and one in every three people will live in a city with at least half a million inhabitants. Both the number of cities and size of cities have grown tremendously over the past decades, mostly in the Global South (United Nations Department of Economic and Social Affairs [UNDESA] 2016a). Cities are spaces in which "large numbers of people live in close proximity to, and association with, one another" (Stren and Polèse 2000: 8). Organizing this dynamic human space, enabling people from diverse backgrounds to live together, addressing the spatial and social challenges of urban life, and delivering services to inhabitants are enormous tasks cities face today. As cities continue to expand, so does their impact as actors on the regional, national, and international levels. Many have expressed hope that "cities [will] deliver where nation states have failed" (Oomen 2016: 2) and see cities as centers for human development, social justice, and policy innovation.

In an unprecedented manner, cities have become important hubs for human rights activity and serve as key actors shaping, implementing, and monitoring policies dealing with human rights and social justice. Human rights in this context produce a citywide framework for

CONTACT Tina Kempin Reuter ✉ tkreuter@uab.edu 🖳 Department of Political Science and Public Administration and Department of Anthropology, The University of Alabama at Birmingham, HHB 571, 1702 2nd Ave. S., Birmingham, AL 35294, USA.

"packaging and presenting ideas that generate shared beliefs, motivate collective action, and define appropriate strategies of action" (Merry 2006: 41). Policymakers, activists, and city governments alike have used human rights norms and concepts laid down in international documents such as the Universal Declaration of Human Rights as authority for local policy (De Feyter et al. 2011). Human rights serve as "the 'moral lingua franca' [to] address social injustices worldwide" (Oomen 2016: 2), which now increasingly applies to the city context. Nevertheless, the importance of the city as a place of human rights implementation has only been recently recognized and studied. Scholarly analyses have been presented mostly by sociologists, economists, and human geographers (Smith 1994; Evans 2002; Purcell 2002; Harvey 2003, 2008, 2009; Dikeç 2005; Wastl-Walter, Staehli, and Dowler 2005; Attoh 2011; Glaeser 2011; McFarlane 2011; Oomen 2016) and only sparingly by human rights experts (Gould 2004; De Feyter, Parmentier, Timmerman, and Ulrich 2011; Kalb 2017).

This article aims at contributing to the modern human rights discourse by evaluating the trend of localization in human rights as it applies to cities. It seeks answers to two interrelated questions: First, if we consider human rights to be the basis of how we approach urban development, how do we produce spaces that reflect fundamental human rights values such as nondiscrimination, equality, and access for all? Second, how can we ensure that all city inhabitants take part and are represented in the modern urban discourse? The New Urban Agenda and its vision to build inclusive cities that ensure "that all inhabitants, of present and future generations, without discrimination of any kind, are able to inhabit and produce just, safe, healthy, accessible, affordable, resilient, and sustainable cities" (Habitat III 2016b: 10) catapulted these questions to the forefront of the urban conversation. Using the case of persons with disabilities, one of the most marginalized communities across the globe, this article analyzes major challenges for cities relating to human rights implementation and identifies best ways to approach equality, accessibility, and inclusion in modern cities. Because technology is often cited as one way to promote inclusion of marginalized communities, special attention will be given to the smart city and the opportunities and challenges presented by information and communication technologies (ICTs) for human rights, accessibility, and inclusion.

The right to the city and rights in the city

The localization of human rights is a relatively new trend in international politics that took shape based on two distinct narratives promoted by different stakeholders. First, "rights in the city" focuses on human rights implementation in cities. Using international human rights documents such as the Universal Declaration of Human Rights, this approach focuses on translating international human rights to the level of the city. So-called human rights cities—namely, cities that commit to promoting, protecting, and implementing human rights, equity, and peace—engage the local community in a socio-political process in which human rights play a key role as fundamental values and guiding principles (Marks and Modrowski 2008; World Human Rights Cities Forum 2011; Smith 2017). The force behind this movement originally stems from the People's Movement for Human Rights Education (PDHRE) as well as European cities that took it upon themselves to advocate for the role of municipalities in the realization of human rights through local policy. Second, the "right to the city" calls for all inhabitants to be able to fully enjoy and contribute to city life with all of its services and advantages. In practical terms, the movement most strongly developed in the Global South, and especially in Latin America, where the fight for urban justice was transformed into a call to the right to the city (Oomen 2016).

Despite the fact that these two concepts evolved through different processes by different stakeholders, they are often used interchangeably in both literature and practice. Both narratives developed in the end as a response to the perception that cities have become disconnected from the people who inhabit them, that urban spaces have become abstract, and that city governments do

not adequately involve urban dwellers in their decision-making processes, urban planning, and service allocation. As Mitchell (2014: 18) wrote, "[m]ore and more spaces are produced *for* us rather than *by* us." The right to the city and rights in the city movements strive to realize a human-centered approach to urban development and embody the "collective right [of urban dwellers] to reshape the process of urbanization" (Mahmud 2010: 70).

The right to the city has been debated since the 1960s, but has only gained prominence as a topic of discussion for social scientists within the last two decades (Amin and Thrift 2002; Harvey 2003; Horlitz and Vogelpohl 2009; Garcia Chueca 2016; Habitat III 2016a). The concept, originally developed by French sociologist and philosopher Henri Lefebvre, is based on the idea that inhabitants have the right not only to access the resources of the city but also to be part of the process of developing, transforming, and shaping the city (Lefebvre 1996; Purcell 2002; Harvey 2003; Attoh 2011). According to Lefebvre, the city is an *oeuvre*[1]—a dynamic space that is produced by the city's residents, reflecting "movement, complexity, conflicts and contradictions" (Lefebvre 1996: 53). The right to the city is thus a right "to urban life, to renewed centrality, to places of encounter and exchange, to life rhythms and time uses, enabling the full and complete usage of these moments and places" (Lefebvre 1996: 179). It "manifests itself as a superior form of rights: the right to freedom, to individualization in socialization, to habitat and to inhabit" (Lefebvre 1996: 174). The right to the city not only allows urban dwellers to access what already exists but includes a right to change it and adapt their own lives accordingly. As American sociologist Robert E. Park wrote, "if the city is the world which man created, it is the world in which he is henceforth condemned to live. Thus, indirectly, and without any clear sense of the nature of his task, in making the city man has remade himself" (1967: 3).

Human rights do not take into account the spatial dimension of urban problems, which explains why the discussion of rights, justice, and space has traditionally been dominated by human geographers (Bunge 1971; Harvey 1973, 2003; Smith 1994; McFarlane 2011), not human rights experts. The relationship between geography and justice has been a focus of analysis since the 1970s (Bunge 1971; Harvey 1973; Smith 1994; Mitchell 2014). Attention to the spatial dimension of justice fosters understanding of how structures of injustice become entrenched in cities. David Smith (1994: 153) wrote that to study justice and injustice in geographical spaces, one has to understand the "structures responsible for inequality," which usually concern questions of distribution and access to goods and services. However, although distributive justice is necessary, it is not sufficient to realize the right to the city. The right to the city involves access not only to goods and services but also to the opportunity and means to influence how these goods and services are distributed. The right to the city therefore strives to establish an institutional framework that allows urban inhabitants to establish social control, to fully and effectively participate in the decision-making processes, and to fight oppressive structures (Young 1990; Mitchell 2014). Scholarly discussions of the right to the city usually fall within two areas: (1) the right to participation, such as democratic urban politics (Purcell 2002; Harvey 2003; Gould 2004; Dikeç 2005; Wastl-Walter, Staehli, and Dowler 2005; Marcuse 2007a; Marcuse 2007b; Mitchell 2014), and (2) the right to appropriation, which includes both the current use of space, physical access, and occupation of the city and the creation of new urban spaces physically, socially, politically, and economically (Smith 1994; Purcell 2002; Sklair 2017).

The right to the city is grounded in the Universal Declaration of Human Rights (UDHR) and other international human rights documents. It "envisions the effective fulfilment of all internationally agreed human rights, sustainable development objectives as expressed through the Sustainable Development Goals, and the commitments of the Habitat Agenda" (United Nations General Assembly [UNGA] 2016: 3) and thus calls for rights in the city. The right to the city establishes the framework in which human rights in the city are specified and developed.

Multiple international documents today deal with human rights in the city. The most influential are the European Charter for the Safeguarding of Human Rights in the City (2000, signed by

more than 350 European cities), the World Charter on the Right to the City (2001), and Global Charter-Agenda for Human Rights in the City (2006). In addition, a number of local level instruments have been developed, for example, in Montreal (Charter of Rights and Responsibilities of Montreal 2006), Mexico City (Mexico City Charter for the Right to the City 2010), and Gwangju (Gwangju Human Rights Charter 2011). These charters include references to most rights in the human rights catalogue, including civil and political rights; economic, social, and cultural rights; women's rights; children's rights; the right to sustainable development; and the right to a healthy environment. They deal with issues such as land allocation, access to basic services and infrastructure, pollution, inclusive governance and participation, culture, security, and quality of life (UNGA 2016). At the core of these documents are the principles of human dignity, nondiscrimination, sustainability, democracy, and social justice (World Charter for the Right to the City 2001). The localization of human rights in the city has especially benefited the clarification and implementation of economic, social, and cultural rights. These rights are often seen as aspirational in the international realm but are crucial to address some of the deep-rooted social issues in cities, such as socio-economic inequality, poverty, and marginalization. With regard to civil and political rights, cities have functioned as catalysts for political participation and accountability and serve as a "first stage where citizens can learn the values and operation of democracy" (Garcia Chueca 2016: 108).

These deliberations demonstrate that the understanding of human rights in the city does not necessarily have to be legalistic in nature. As many scholars have pointed out, the issue with human rights is often that they are too vague, too aspirational, too abstract, too Western, too legalistic, too hard to enforce, and not adaptable to the cultural context (Donnelly 2003; Goodale 2009; Merry et al. 2010; Hopgood 2013; Oomen 2016). Others have questioned the usefulness of rights language itself (e.g., Tushnet 1984), especially when human rights are not codified, which is mostly the case for the right to the city and rights in the city. In other words, the right *to* and rights *in* the city must be understood less as legalistic rights or entitlements, and more as a political ideology and plan for action. Cities can help translate universal human rights into the local cultural context (Merry 2006; De Feyter et al. 2011; Oomen 2016) and use human rights to shape a common language and inspire activism and causes that unite the people in the city behind common interests (Oomen and Baumgärtel 2014). Cities tend to be more pragmatic in implementing policies and more successful at creating multi-stakeholder alliances between governments, civil society, and local, national, and international organizations than among higher level political actors (Evans 2002; Barber 2013). For example, a coalition of civil society organizations led by the American Friends Service Committee partnered with the city of Washington, D.C., public schools, businesses, and the international nonprofit People's Movement on Human Rights Education (PDHRE) to educate middle-school and high-school students about the UDHR (Dolan 2009). Cities also step in when the state or regional unit lacks formal authority (e.g., Taipei in Taiwan, Palestinian cities, or Barcelona in Catalonia) and organize themselves in transnational human rights networks (e.g., Cities for Life Against Death Penalty Network; Marchetti 2017).

These multi-stakeholder alliances often "transgress the classic divide between rights holders and duty bearers and move away from a legalistic approach to human rights" (Oomen 2016: 3). Rights in the city are therefore not to be distributed top down, "but rather, rights to be defined and redefined through political struggle and social relations" (Dikeç and Gilbert 2002: 71). In other words, "rights are not simply given or bestowed, but are actively 'made,' from the bottom up, from campaigns, activists, movements, [and] pragmatic negotiations" (Darling 2016: 137).

Attempts to transform the city through social action have led to the development of new areas of human rights in cities—for example, the right to mobility (public transportation), the right to a sustainable and healthy environment, the right to political participation on the local level, the right to health, and the right to social justice (Garcia Chueca 2016). The right to the city and human rights in the city include a collective element reflecting a right to social justice, "which includes but far exceeds the right to individual justice" (Marcuse 2012: 34). They focus on equity,

sustainability, inclusion, and access for all inhabitants. The right to the city and human rights in the city have the potential to change the dialogue and redefine the "existing social contract to the benefit of subaltern groups" (Garcia Chueca 2016: 108). It is through human rights that urban inhabitants reclaim their cities and by which cities are transformed into human-centered spaces that impact each and every life in the urban realm.

Marginalized communities in cities: Case study of persons with disabilities

One of the key questions relating to the right to the city is, "Whose right is the right to the city?" Many scholars have struggled with this issue (Harvey 2003, 2009; Dikeç 2005; Marcuse 2012). Although a human rights approach would dictate that the right to the city belongs to all urban inhabitants, the reality is that the impact of individuals on urban development and urban planning often depends on their income and educational level, where in the city they live, and their status in society. Marginalized communities—such as racial, religious, and ethnic minorities; women; migrants and refugees; persons with disabilities; the elderly; the LGBTQ community; and people living in poverty—are often excluded from the urban discourse and do not enjoy the right to the city (Harvey 1973; Silver 1996; Atkinson 2000; Maloutas 2009; Agnew 2010; Bernt and Colini 2013; Gotham and Greenberg 2014). These groups lack agency to become stakeholders in the urban design process because they are consistently and systemically disadvantaged due to social inequalities and structural violence. They usually live at the margins of society, and their existence is often neglected and their needs remain unheard. Peter Marcuse (2012: 31) wrote, "The demand [for the right to the city] comes from those directly in want, directly oppressed, those for whom even their most immediate needs are not fulfilled: the homeless, the hungry, the imprisoned, the persecuted on gender, religious, racial grounds." He acknowledged that the distribution of access, power, representation, rights, goods, and services in cities is distorted in favor of the elites and is not fairly disseminated across urban space and population groups in cities.

A human rights approach to urban development demands a fundamental rethinking of what cities are and who they are for. Cities that exclude marginalized communities cannot claim to realize the right to the city, be perceived as inclusive implementers of rights in the city, or consider themselves producers of true human-centered spaces—which, in the end, denies the very core of the city's purpose as a home of and for people. Inclusion and access for all must be the ultimate goal of cities. The urgency of this matter is amplified contemplating the scale and rapidity of urban expansion and the significance of cities in international and national politics, in economic development, and as hubs of social and cultural influence.

The efforts of persons with disabilities to be included in their societies as full members with equal standing exemplify these struggles. According to the World Health Organization (WHO) and the World Bank, about 15 percent of the world's population lives with some form of a disability (WHO and World Bank 2011). An aging work population and a higher prevalence of disability in older people makes it likely for this percentage to rise. Although persons with disabilities are men, women, young, old, of all different races, ethnicities, gender, and sexual orientations, it is minorities, women, children, refugees, migrants, homeless, and indigenous people with disabilities who are disproportionally affected by disparities, marginalization, and poverty because they face double or even triple discrimination (Christian Blind Mission 2015; UNDESA 2016a). Around 80 percent of persons with disabilities live in developing countries, which means they are among the poorest groups of the global population (CBM 2015).

More than 50 percent of all persons with disabilities live in cities (World Enabled 2016), which is why inclusion of persons with disabilities in urban development is of utmost importance and urgency. Estimates predict that by 2050, 6.25 billion people will live in urban centers, which means that nearly a billion people in cities will be persons with disabilities (UNDESA 2016a). People who have cognitive impairments or difficulties seeing, hearing, or moving around without assistance face

an unparalleled level of social and physical barriers in cities. For many of them, cities are sites "of many contradictions: comforts and constraints, opportunities and oppressions" (Prince 2008).

Inaccessible sidewalks, buildings, parks, and public transportation systems are only the most visible problems. Other urban infrastructure—such as information systems, websites, forms of official communications, early warning systems, and decision-making processes—often exclude access for persons with disabilities. Severe discrimination in housing, employment, education, and many other areas of everyday life are common occurrences for persons with disabilities. Stigma and prejudice prevent inclusion and participation. In addition, urbanization has fundamentally altered the nature of family relationships, social networks, and employment opportunities, which has affected persons with disabilities and their opportunities (Barnes, Mercer, and Shakespeare 1999; World Enabled 2016). Cities can therefore be "disabling"—creating environments that restrict, ignore, and exclude persons with disabilities from everyday economic, political, cultural, social, and recreational activities (Prince 2008).

Barriers to participation and inclusion of persons with disabilities—physical, technological, cultural, or institutional—affect the efficient allocation of resources, organization, production processes, and distribution of benefits. They actively limit governance, lead to fewer opportunities for education and employment, and impact decision-making processes. Exclusion of marginalized groups has not only severe political and social costs but also economic consequences. For example, cities with high rates of tourism face an opportunity loss of 15 percent to 20 percent of the global tourism market share because of inaccessible infrastructures and services (UNDESA 2016a). Similarly, it is estimated that the exclusion of such a large group as persons with disabilities from the labor force leads to a loss of up to 7 percent of the national GDP (International Labour Organization [ILO] 2012). Worldwide, persons with disabilities and older persons have a disposable income of about $8 trillion USD and therefore contribute significantly to city economies (Donovan 2016). Most importantly, lack of inclusion of and access for persons with disabilities is considered a human rights violation. The Convention on the Rights of Persons with Disabilities (CRPD), the first human rights treaty of the twenty-first century that has been ratified by most of the world's countries, stipulates in Article 9 that persons with disabilities have the right "to live independently and participate fully in all aspects of life" and obligate governments "to ensure to persons with disabilities access, on an equal basis with others, to the physical environment, to transportation, to information and communications, including information and communications technologies and systems, and to other facilities and services open or provided to the public."

The challenge today is to build cities that are inclusive of all groups and accessible to everyone. As the 2016 report by the Global Network on Disability Inclusive and Accessible Urban Development (DIAUD) shows, well-planned cities can dramatically improve the social, economic, and political situation of persons with disabilities, their families, and the communities in which they live and participate (World Enabled 2016). This challenge will affect all areas of urban development, including infrastructure management, online presence, city laws and policies, land use, public transportation and mobility, housing and community development, and social services. Human rights principles require that cities are inclusive, accessible, multifunctional, equitable, and sustainable. This is not just an aspirational goal for rich cities in the Global North but should be an achievable option for low-income countries. The right to the city, together with human rights in the city and human rights documents like the CRPD, should be used to guide urban development processes to reduce discrimination, build inclusiveness and equity, and express human needs in the language of human rights.

Technology and inclusion: Is the smart city the answer?

Research, innovation, and technology lie at the center of discussion of new ways to integrate persons with disabilities and other marginalized communities in the urban discourse and city design

process. Practitioners, activists, and scholars alike argue that technology, especially the use of ICTs and mobile technology, can alleviate some of the issues that marginalized populations face in today's cities (Unwin 2009; G3ict and World Enabled 2016a, 2016b; Cogburn, Trevisan, Spaniol, and Aguilar 2017). Estimates show that about 50 billion devices will be connected to the internet by 2020, an increase from 10 billion in 2013 and 200 million in 2000 (Bradley, Barbier, and Handler 2013), and more people will be able to use technology to connect to their communities. ICTs empower citizens and enhance the resilience of cities and communities (AT&T and Business for Social Responsibility 2017).

With regard to persons with disabilities, there is no doubt that ICTs have made a difference in their quality of life. The Synthesis Report of the ICT Consultation in Support of the UN High-Level Meeting on Disability and Development identified useful technologies for persons with disabilities, including video sign language interpretation, captioning, screen readers, telehealth, e-governance, and accessible emergency services (International Telecommunications Union [ITU] 2013). Artificial intelligence, augmented reality, and sensors have the potential to remove barriers for persons with disabilities (COSP 2018). These are seen as tools for persons with disabilities to escape isolation and enable them to communicate and collaborate, reach independence and self-determination, achieve better health outcomes, and participate in political and social discourse (Dobransky and Hargittai 2006; Trevisan 2017). The arrival of mobile technology has revolutionized access for persons with disabilities to a wide range of services (Gould, Leblois, Montenegro, and Cesa Bianchi 2017), enabled them to customize their work environments (Qualcomm Wireless Reach 2015), and allowed their participation in global, national, and local governance through collaborative virtual networks (Cogburn et al. 2017).

For example, APROCOR, Wireless Reach, and Vodafone Spain Foundation developed mobile applications for workers with intellectual and cognitive disabilities to help them interact with their work environment. These custom mobile apps use an augmented reality platform to overlay digital material onto physical environments. One of these apps, Easy Use, gives interactive instructions for persons with intellectual disabilities to operate equipment like printers, phones, and washing machines. Job coaches can personalize the apps to provide specific instructions tailored to a person's work place and job. Another app, called Who Is Who, provides a visual directory of employees with photos, names, and titles superimposed over the image of office space, which helps persons with disabilities identify people and locate colleagues. Location-based augmented reality platforms are also used to deliver step-by-step instructions to help people commute to work. Users report higher levels of confidence and other benefits of alternative, interactive learning (Qualcomm Wireless Reach 2015).

At the same time, ICTs can never be a simple counter to marginalization because, even when technology is made available to marginalized groups, "what usually happens is inclusion in the margins; they may be a little but more included, but they continue to the marginalized" (Demo 2007: 6). A variety of barriers continue to prevent persons with disabilities and other marginalized communities from being fully included.

First, social status, income, education, and labor-force participation are generally good predictors of access to ICTs (Dobransky and Hargittai 2006). ICTs can contribute to the digital divide (Kitchin 2014) and reinforce already-existing social divisions, patterns of structural violence, and power relations (Calzada and Cobo 2015; Cooper 2016; Rajagopal 2016). In fact, 23 percent of Americans with disabilities never go online, compared with 8 percent of the general US population. Adults with disabilities are 20 percent less likely to subscribe to home broadband or own a computer, tablet, or smartphone (AT&T and BSR 2017).

Second, access to ICTs strongly depends on the type of disability. People who are deaf and hard of hearing, blind and visually impaired, mobility impaired, or face cognitive and/or mental disabilities have different needs when using ICTs. Whereas no accommodations are necessary for persons with some types of disabilities, others require special modifications and assistive

technology to access ICTs. Assistive devices like screen readers for blind or visually impaired persons or aids for people who are hard of hearing can be expensive due to little competition among device makers and medical insurance/government grants inflation (Goral 2016). Although there are signs that technological solutions for persons with disabilities are becoming more mainstream and disability technology has been embraced by major tech leaders like Apple, Microsoft, and Google (Jack 2017), the tech industry has traditionally been slow to invest in assistive technology, which has led to stagnating innovation, a lack of cooperation and coordination in product development (e.g., some assistive technologies are only available for certain platforms), and a need for costly retrofitting (ITU 2018). ICT accessibility is still considered a small market by many technological companies, even though studies have shown that investments in accessibility also introduce benefits for wider groups of the population such as older persons (ITU 2013).

Accessibility and inclusion are often an afterthought, if they enter the policymaking and product-planning process at all, and there is a general lack of knowledge about persons with disabilities and their needs both in the tech industry and among policymakers. Rehabilitation experts are scarce, and little awareness and training opportunities exist for engineers, product managers, software developers, and the ICT industry in general. A survey of experts conducted by G3ict and World Enabled (2016a), two leading organizations advocating for persons with disabilities and accessible technology, shows that only 20 percent of technology experts were aware of the international accessibility standards for ICTs developed by the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC). These standards provide guidelines for the accessibility of a variety of systems, services, and products, including accessible web content and ICTs (International Organization for Standardization and International Electrotechnical Commission 2014). Accessible government websites are only available in 40 percent of CRPD member states, and even in those states with higher rates of accessibility, not all websites are included. Similarly, only 18 percent of CPRD countries have their top ten media websites designed to be accessible for persons with disabilities, thereby excluding a large portion of the population from access to information and services and violating their rights (CRPD Article 21; AT&T and BSR 2017). Even if ICTs are accessible, they are only available in a fraction of languages spoken and signed across the world. According to one report, screen readers are available in majority languages in 60 percent of cases, but only 21 percent in minority languages (G3ict 2016).

Third, the absence of laws and policies that require companies to integrate accessible technologies and/or the unwillingness or inability to implement existing laws exacerbates these problems and further marginalizes the disability community. A global survey of fifty-five countries shows that in nearly half of surveyed states (47 percent), no legal enforcement or sanctions exist for the inaccessibility of government websites (Fembek, Butcher, Heindorf, and Wallner-Miki 2013). Similarly, a study assessing the CRPD dispositions on assistive technology and ICT accessibility finds that although most countries are aware of their basic obligation to implement ICT accessibility under the CRPD, only 66 percent of CRPD member states have laws, policies, or programs in place to address ICT and assistive technology compliance (Gould et al. 2014).

Finally, attitudinal barriers and the stigma attached to disability contribute to the continued marginalization of persons with disabilities (Anderson and Philips 2012). However, one should not forget that ICT accessibility is a basic human right (Article 9 CRPD) and in many cases, the precondition for the implementation of other human rights such as the right to equal participation (Article 29 CRPD), access to education (Article 24 CRPD), independent living (Article 26 CRPD), emergency preparedness and response (Article 11 CRPD), work and employment (Article 27 CRPD), and personal mobility (Article 27 CRPD), among others.

What does this mean within the context of the city? Cities are both human rights and technological leaders. Technology plays a more and more important role in all aspects of city life and governance. So-called "smart cities" use ICTs, the Internet of Things, cloud computing, and other

technological applications as vehicles to transform the benefit of their inhabitants and governments. Technology, information, and data are used to improve infrastructure and services and to inspire innovation, learning, and problem solving (Komninos 2013). Smart cities and ICTs have opened new avenues for citizens to participate in decision-making processes (e.g., through e-governance) or by fostering new ideas, entrepreneurship, and the flexibility of the labor market. Smart cities transform modern transportation and make the sustainable management of resources and a healthy environment top priorities for city governments (Giffinger 2007; Deakin and Al Waer 2011; Mohanty, Choppali, and Kougianos 2016). Smart cities are said to be more efficient, reduce costs, and decrease resource consumption (Neirotti, DeMarco, Cagliano, Mangano, and Scorrano 2014; Aoun 2013; Mosannenzadeh and Vettorato 2014). They have given city governments new opportunities to interact directly with the community and the city infrastructure. What is happening in the city, how the city is evolving, and urban planning and development can now be monitored in real time using sensors, devices, and citizen-collected data (Komninos 2013).

Yet, much of the current smart city agenda does not seem to acknowledge the fact that, in the end, the city is made up of humans. One key critique of smart cities is that, due to the technology-focused language and emphasis on the smart city rhetoric, advocates of smart cities fail to address the complexity and sociality of cities (Oliveira and Campolargo 2015). Smart cities are not, by definition, "human friendly" or empowering before the city's inhabitants. Technological solutions are often implemented top down and dictated by a small number of large corporations, running the risk that inhabitants become merely consumers or data gatherers rather than active participants in the urban discourse (Hollands 2008, 2015; Sassen 2011; Willis 2016). Competing large corporations—such as IBM, General Electric, Cisco, Siemens, Philips, among others—dominate the smart city agenda and offer technology to cities as solutions for any type of urban problem (Eurocities 2012; Hill 2013). They presume that everyone shares the same kind of smart city vision, which in itself is perceived as "nonideological," according to former IBM chairman and CEO Samuel Palmisano (2010). Citizens are often seen as obstacles in the competition to implement the smart city and in need of education on the benefits of ICTs (Greenfield 2012; Hollands 2015). Smart cities can amplify the perception that cities are productions of corporate–government–financial bureaucracies, not by the people who inhabit them. This is the critique at the very core of the right to the city movement—namely, that cities are disconnected from their residents and provide spaces in which urban dwellers are involved little or not at all.

A second but related problem is the fact that inhabitants must adapt to smart city living to take advantage of the benefits of the smart city (Vanolo 2014), which usually means access to broadband internet and high-end sensing devices (Gurstein 2014). This leaves little room for the technologically illiterate, the poor, the elderly, persons with disabilities, and generally those who are traditionally marginalized in the city discourse and decision-making processes. Serious urban problems like inequality, marginalization, and poverty are largely absent from the smart city discussion (Hollands 2015), contributing to the establishment of "functionally sophisticated enclaves" (Anttiroiko 2013: 503) in urban society and amplifying the social polarization in cities (Graham and Marvin 2001; Graham 2002). As discussed above, if ICTs are not implemented based on the principles of equity and inclusion, smart cities prioritize the needs of the wealthy and businesses over the vast majority of inhabitants (Wastl-Walter and Staeheli 2005). Although governments and the private sector have been making massive technology investments in cities, there has been little focus explicitly on technology products and services that prioritize the inclusion of all citizens and end users, including those with disabilities. If smart cities are not accessible, "they perpetuate the inequality, exclusion, and isolation of persons they are designed to help" (Pineda and Thurston 2016).

Scholarly discussions and empirical studies show that smart cities today are not inclusive and are failing persons with disabilities and other marginalized groups (Odendaal 2006; Hollands
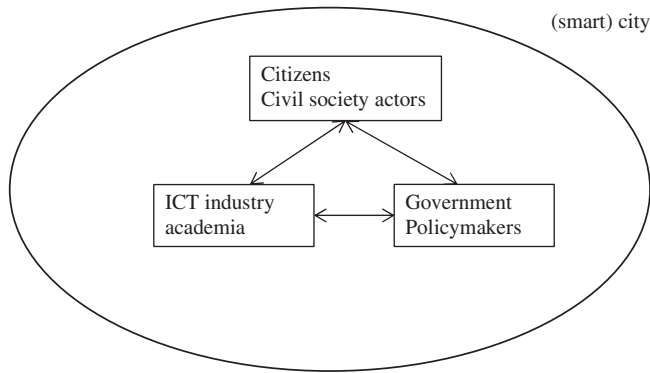
Figure 1. The multi-stakeholder urban design process.

2008; Datta 2014; Luque-Ayala and Marvin 2015; G3ict and World Enabled 2016a, 2016b). Most city planners, policymakers, urban designers, engineers, and ICT developers are unaware of accessibility standards and the needs of underrepresented groups. In addition, the absence of policies, laws, and financial resources dedicated to social inclusion positions accessibility and inclusiveness low on the priority list. Although smart city approaches seem to offer a promising starting point to fulfill the right to the city and rights in the city for marginalized communities, the city design and development process needs to be restructured and rethought in order to make smart cities fully inclusive. The smart city agenda is not neutral (Vanolo 2014), but fundamentally affects how people perceive the city, the way people interact with their environment, and how the urban landscape is shaped. The challenge is now to use technology, and especially ICTs, in a way that promotes and protects human rights and includes marginalized groups as key stakeholders in all parts of the urban design and development process.

Designing an inclusive urban development process

The same ICTs that tend to go over citizens' heads, erode citizens' connection to their urban environment, and risk exclusion of marginalized groups like persons with disabilities have the potential to foster inclusion if they involve a human-centered, bottom-up approach (My Neighbourhood Project 2016). Successful smart cities have to "start with people … rather than blindly believing that ICT itself can automatically transform and improve cities" (Hollands 2008: 315). There is a need to rethink technological approaches: "Smart city technology should be defined not just as a means to improve existing infrastructure but also as an unprecedented opportunity to improve the lives of all citizens" (AT&T and BSR 2017: 8). In fact, cities that invest in accessible technology are today's smart city leaders (AT&T and BSR 2017).

The first step to making inclusion a reality is to assess the "smartness" of a city based not only on how technologically advanced the urban environment is but also on social indicators. The goal is to create a framework to address social sustainability and inclusion in smart cities, especially with respect to underrepresented groups (Hoornweg 2011; Concilio and Rizzo 2016). Human rights in the city and the right to the city can provide this framework. The concepts and language of human rights are useful in reframing urban discourse and counteracting policies that are not inclusive.

What would such a human rights-based, inclusive city development and design framework in smart cities look like? The following model is based on the lessons of both the right to the city and human rights in the city, thereby introducing a human-centered approach in which urban citizens are the driving forces behind change and accepted as stakeholders in the smart city design process (see Figure 1).

Stakeholders

Citizens and civil society actors

Citizens and civil society actors are the driving force of change in the proposed multi-stakeholder model. Nongovernmental organizations (NGOs), community leaders, heads of neighborhood associations, and organizations representing specific marginalized groups can greatly impact the formulation and implementation of inclusive urban policy. Similarly, with regard to technological solutions, civil society actors play important roles in raising awareness of ICT accessibility barriers and of what ICTs can do to facilitate economic and social inclusion. Citizens, including marginalized communities, play key roles in the cocreation of solutions to collective social challenges with the goal of increasing the standard of living.

For example, the integration of disabled persons' organizations (DPOs) and persons with disabilities in the city design process has shown remarkable outcomes (Boucher, Vincent, Fougeyrollas, Geiser, Hazard, and Nouvellet 2015; G3ict and World Enabled 2016b; UNDESA 2016a, 2016b; World Enabled 2016). DPOs are instrumental in changing the way in which policymakers and city planners think about disability and cementing the shift away from the individualized medical model of dealing with persons with disabilities to a more rights-based and social inclusion-oriented approach. The medical model of disability perceives a person with a disability as an individual in need of rehabilitation and therapy, based on the understanding that a person with a disability is different from other people in society and requires support and care. The social model of disability shifts the focus of attention from the individual to the society and views disability as a social and political construct. The barriers persons with disabilities face in their everyday lives are the result not of their impairments but of physical, economic, and social obstacles that prevent full inclusion, access, and participation of persons with disabilities in their communities.

Based on the social model of disability, a human rights approach puts the individual at the center of attention, leading to greater understanding and empowerment of fundamental human rights concepts such as human dignity, the value of every human life, and equality of all human beings in the context of disability (Quinn, Degener, and Bruce 2002; Kayess and French 2008; Harpur 2012; Bartlett 2014; Reuter 2017a). This is consistent with the goals of the right to the city and human rights in the city to guarantee full participation of all urban dwellers, including marginalized communities, in the social, economic, cultural, and political life of the urban society. A citizen-driven human rights approach to the city thus appeals directly to city planners and urban policymakers to change the physical, economic, and social environment to be inclusive and accessible to everyone in the urban space.

One of the key problems for underrepresented communities is to make their voices heard in public discourse. Most marginalized groups lack agency and the ability, knowledge, and negotiation techniques to participate in political processes. What is needed to make this inclusive citizen-driven urban design and development process a reality is therefore a focus on advocacy and capacity building. As Boucher and colleagues (2015) argued, true participation in the urban design process "requires three elements: to be present, to belong, and to take part." In the context of the city, this means first and foremost that the inclusion of marginalized voices needs to become a matter of course, not an afterthought, as it is so often the case. Direct involvement of marginalized groups in the planning, development, and implementation process of urban policy is crucial to realize effective participation and inclusion. For example, the slogan "nothing about us without us" is used by the disability community to raise awareness for their struggles and their goal to achieve full integration and access. Capacity building for marginalized groups therefore needs to include a focused understanding of the local political and economic environment, inner-city power relations, and decision-making processes. Effective participation in governance processes requires substantive knowledge, organizational infrastructure, and a diverse and varied skill-set, including the ability to understand the motivation, goals, and inner workings of other

stakeholders; to evaluate both top-down and bottom-approaches to urban politics; and to translate somewhat abstract ideas into meaningful, on-the-ground results. Depending on how the process is structured, this might also mean understanding of the effective use of ICTs. There is need for data, especially cross-sectoral and cross sectional, and a careful needs assessment in underserved neighborhoods and across the city as a whole. Additionally, the development of collaborative approaches is crucial for the successful participation of citizens and civil society actors in the multi-stakeholder model.

Although many NGOs have experience with advocacy and capacity building, they have traditionally worked against political establishments and governments, as opposed to alongside them. For persons with disabilities, this means collaboration not only with governments, academia, and industry but also across different sectors and types of disability organizations. Although cross-disability advocacy groups exist and different disability groups have worked together to bring about major milestone documents such as the CRPD or the Americans with Disabilities Act (ADA), these coalitions are often short lived and less influential (Cogburn, Trevisan, Spaniol, and Aguilar 2017).

High diversity in cultural approaches, in disability itself, stigma, and perceptions about disability in society combined with different approaches by authorities on how authorities handle data gathering has made cross-disability needs assessments difficult, leading to further marginalization. Collective and collaborative participation is not common practice for DPOs and requires new ways of thinking and strategizing. Working in a multi-stake holder environment thus requires political maturity; this is why capacity building and advocacy are so important for persons with disabilities and other marginalized groups. Citizens and NGOs will learn to move in this multistakeholder environment by developing both horizontal (peer-to-peer) and vertical (with governments and other actors) relationships, creating the basis for reciprocal trust, collaboration, innovation, and community engagement.

Government and policymakers

Local governments and policymakers play an important role in facilitating the citizen-driven urban design process. They provide the governance framework and the circumstances in which the dialogue happens. The will of local authorities to recognize marginalized community members as citizens with equal rights and as stakeholders in the urban design process is the foundation for a successful implementation of the multi-stakeholder model suggested. Inclusion requires rethinking both political culture and the nature of local leadership, which can be challenging for authorities and policymakers.

Policymakers are not always eager to engage in power sharing, which is why discussing the benefits of a collaborative approach within the human rights framework of the city is an important first step. Genuine implementation of the right to the city and an inclusive participatory process require an honest and open dialogue over needs, resources, and potential concessions on all sides. Unwillingness by local governments to share power and high demands by civil society can severely limit the opportunity to coconstruct solutions.

Creating avenues for citizens, including marginalized communities, to voice their concerns is of utmost importance. This can be achieved through public forums, town halls, information campaigns, and community engagement. In smart cities, online avenues for citizens to provide feedback, crowd sourcing, and social media initiatives have proven to be effective tools to reach urban citizens (G3ict and World Enabled 2016). However, the key here is again to embrace inclusive approaches and address some of the issues discussed above. Using technological solutions to create collaborative spaces means establishing comprehensive policies, being aware of the potential implications of corporate agendas, and training underrepresented groups to use the government-provided services, ICTs, and other technological solutions. City governments should play

leading roles in realizing ICT accessibility, especially in formulating policy implementation and legislation relating to ICT accessibility and in supporting the participation of NGOs in smart city development and implementation (Bates 2017). Local authorities should also allocate financial resources, require compliance with international accessibility standards, and implement policies and laws to promote accessibility for all, including ICT and smart city solutions. City governments should aim to develop model policies and a set of indicators to guide implementation. One successful tool to transform accessibility in smart cities is through inclusive ICT procurement policies (AT&T and BSR 2017).

With regard to persons with disabilities, disability access to urban spaces is often low on the priority list of local governments. Even if accessibility is a concern for urban policymaking, these concerns mainly enter discussion only in terms of compliance with relevant laws (e.g., the ADA) and seldom include true needs assessments and voices from the community. In addition, accessibility is viewed first and foremost as a physical issue—namely, access to buildings and structures such as sidewalks—while little consideration is given to how these changes actually affect the lives of persons with disabilities.

However, research shows the importance of context when applying accessibility standards (Boucher, Vincent, Fougeyrollas, Geiser, Hazard, and Nouvellet 2015; UNDESA 2016a; World Enabled 2016) and thinking beyond physical structures. Accessibility not only includes physical access but access to public services, as well. This means, for example, wheelchair-accessible public transportation, websites that can interact with assistive technologies such as screen readers, information material that is designed for persons with cognitive disabilities, and phone services that are compatible with TTY devices for the deaf.

The right to the city and human rights in the city demand full participation of all citizens, including marginalized groups, in all areas of urban life. This means training for government officials, public service providers, and policymakers in inclusive local development approaches, the meaning of accessibility, and human rights models that represent the underlying ideal of inclusive cities. The multi-stakeholder model proposed in this article has the potential to fulfill each of these demands. By incorporating the citizen-driven urban design process in urban decision-making processes, concepts like equality, sustainability, and social justice, which lie at the heart of the human rights approach to urban planning, are bound to enter urban policy.

ICT industry and academia

The last set of actors in the multi-stakeholder model includes members of the ICT industry and academia. These actors provide the technologies, tools, and scientific methodologies to make an inclusive urban design process a reality. They are responsible for research on inclusive urban policy and development of smart city solutions, training of professionals, and developing accessible ICT standards. A good example is the AT&T and New York University Connect Ability Challenge, which specifically focused on the development of mobile and wireless technologies to improve the lives of persons with disabilities. Some winning projects included a mobile app that transcribes speech into text, a mouse that allows a person to use a PC completely handsfree by using facial movements and expressions, wearable devices to communicate for persons with difficulties speaking, Bluetooth-enabled indoor navigation for the blind, and telehealth apps for personalized medicine (Connect Ability Challenge n.d.). The outcome of this project demonstrated that ICT accessibility features designed for persons with disabilities not only increase inclusion but can be used by the nondisabled part of population (e.g., using text-to-speech or voice recognition functionality to access city services when driving).

Cities should therefore invest in academic and corporate-driven research and development fostering universal design—namely, the design of products, environments, services and programs to be usable by all people—to the greatest extent possible, without the need for adaptation or

specialized design (Article 2 CRPD; Centre for Excellence in Universal Design 2014). The goal is to find technical solutions that can be used by any person, regardless of age, size, gender, language, ability, or disability. Universal design thus requires a comprehensive understanding of the challenges persons with disabilities face, which has to translate into project planning, designing and engineering infrastructure solutions, and implementation and operation (Agarwal and Steele 2016).

Evidence illustrates that making cities accessible bears no or neglectable additional costs when applying universal design principles to urban infrastructures, facilities, and services from the initial stages of planning to full implementation (World Bank 2008; ILO 2012). The inclusion of marginalized communities in the search for research-based and technological solutions for urban policy and city design is therefore crucial. Public–private partnerships, capacity building for ICT industry, and the development of an inventory of accessible (smart) city solutions—including a database of best practices of design, management, and implementation of technological approaches (G3ict and World Enabled 2016a, 2016b)—must be at the forefront of academic and research focused approaches.

Besides developing technological innovations and STEM research, academia plays an important role in guiding civil society actors, citizens, and marginalized groups to become effective participants in urban policy, advising policymakers on designing inclusive policies, and measuring the impact of technological and policy changes. Through human rights education (Flowers 2003; Suarez and Ramirez 2004; Mihr and Schmitz 2007; Bajaj 2011), social science research, and the facilitation of interactive democratic approaches (Gould 2004, 2014), academics can empower marginalized communities to develop more agency and confront asymmetric relationships of power and give policy recommendations on how to change these dynamics (Baxi 1997).

Human rights education generally involves three areas of education: education about the content of human rights; education through human rights, designed to generate changes in behavior, attitudes, and ultimately values; and education for human rights, namely, action-focused activities, such as speaking up and acting in the face of injustice (Freire 1970; Andreopoulos and Claude 1997; Bajaj 2011). Human rights education has been shown to be successful in creating a relationship between citizens, policymakers, and public servants; to reduce discrimination and human rights abuses; and to strengthen a group's cohesion and potential for social action (Bajaj 2011; Reuter 2017b). Cities provide ideal locations to implement human rights education, thereby fulfilling the right to the city and human rights in the city premise discussed in the first part of this article.

A structured, purposeful citizen-driven process such as the one suggested in this multi-stakeholder model serves as a way of integrating and uniting these different voices for the purpose of realizing the right to the city and the creation of inclusive and accessible urban environments. This process facilitates dialogue not just among different groups representing marginalized communities but also with other stakeholders, such as governments, academia, and the ICT industry. Some cities have started to embrace multi-stakeholder approaches. Examples like the Dallas Innovation Alliance, the City Tech Collaborative in Chicago, or Brickstarter in Helsinki—which are citizen-driven coalitions that include representatives of the city, ICT industry and corporations, academia, civil society organizations, and private citizens—show great promise for finding collaborative social and technological solutions to increase inclusion and quality of life for all urban dwellers. The application of the multi-stakeholder model has the potential to improve both the individual level of participation of representatives of marginalized groups and the collective participation of organizations representing them in the decisions that concern underrepresented communities. This process also leads to higher integration of all urban inhabitants; changes the accessibility of territory, services, and spaces; and results in a redefinition of social integration of marginalized groups. It establishes ownership and empowerment, giving citizens "the right to

shape the city using human initiative *and* technology for social purposes to make our cities better and more sustainable" (Hollands 2015: 72).

Conclusion

The concepts and language of human rights are necessary for reframing urban discourse and counteracting policies that are not inclusive. Cities substantially impact human rights implementation through human rights-centered initiatives and policies, especially with regard to political participation, education, health, and social welfare. Implementing human rights in the city and the right to the city means to expose, propose, and politicize (Marcuse 2009). It means exposing the roots of the problems and communicating findings. It entails working with those affected by marginalization to come up with proposals, programs, benchmarks, and strategies to fight injustice. Finally, it involves formulating political action plans and assessing the implications of what was exposed and proposed.

Today, technological solutions are often looked to as ways to address social, economic, and political issues of our time. Urban planners, city governments, and engineers have embraced this by creating the smart city. However, technology alone is not sufficient to solve our societal problems. Most of our serious urban difficulties are not technological but social in nature. Without consideration for all humans inhabiting cities, smart city and technological approaches have the potential to exacerbate socio-economic divisions and exclusion through corporate dominance and top-down implementation.

The first step in creating inclusive cities involves including stakeholders in all parts of the planning process, reaching out to marginalized communities, and seeking diverse participation. ICTs might facilitate this process by offering new avenues for policymakers to engage with the community. Smart cities and ICTs need to serve people first and must find their basis in the appreciation for various abilities and requirements of every person. To achieve a human-centered modern urban environment, cities need to involve marginalized communities (such as persons with disabilities) in urban planning, train the ICT industry and policymakers about the needs of marginalized communities, employ members of marginalized communities, and engage them actively in product development, design of solutions, and problem solving. Through these processes, cities will gain new knowledge and insights and become hubs of innovation, sites for new markets, and models for other cities in the world. Cities will become key actors in the promotion, protection, and implementation of human rights.

Note

1. A French term usually used for artistic productions, works, or works of art.

Acknowledgments

Notes on contributors

Tina Kempin Reuter is the director of the Institute for Human Rights and associate professor in the Departments of Political Science & Public Adminstration and Anthropology, specializing in human rights, peace studies, and international politics at the University of Alabama at Birmingham. Her research focuses on human rights, with a particular emphasis on the struggle of vulnerable and marginalized populations, especially persons with disabilities

and ethnic minorities. She holds a PhD in International Relations and International Law and an MA in Contemporary History, Economics, and International Law from the University of Zurich, Switzerland.

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