

Chapter 9

Smart city imaginaries

Looking beyond the techno-utopian vision

Marc Schuilenburg and Brunilda Pali

Introduction

*Maybe smart cities, these vast open-air labs,
point the way to a new global civilization.*

Thierry Happe, Founder CEO Netexplo

Many urban imaginaries circulate, but few are as popular as the smart city. Packaged primarily with a visual language of spectacular techno-futurism, the smart city has become an urban utopia for policymakers and urban planners promising to rationalize both the planning and governance of cities with technology that can monitor, manage and regulate various urban processes (Kitchin, 2015; Joss et al., 2019). In this techno-utopian vision, technological devices are deployed in large numbers in the public space and are integrated with mobile computing devices used by citizens, such as mobile phones, laptops and smart glasses. In order to better depict, model and predict urban processes, they are connected in a centralized network, so that large sets of collected data can be constantly analysed ('the urban dashboard') through algorithms and turned into clear predictable, intelligible and governable patterns. Central to this minute-to-minute governance is the idea that the urban environment needs to be as flexible as possible to accommodate the constantly shifting needs, demands and requirements of urban life (Zandbergen, 2018).

In less than two decades, the smart city has become a global narrative that promises to improve city-wide efficiency, decision-making, and safety (Townsend, 2013; Datta, 2015; Ersoy, 2017). Tech corporations like IBM¹ and Cisco, in particular, have been decisive in this process. Through "corporate storytelling" (Söderström, Paasche & Klauser, 2014: 307) and sheer "propaganda" (Schürer, 2020), they popularized a smart city global imaginary (Greenfield, 2013; Townsend, 2013). This imaginary is configured as a solution to all kinds of catastrophic events that cities face now and will face in the future, such as natural disasters due to climate change, high rates of criminality, and democratic fallacies, presented in scenarios (Tyszczyk, 2020). To make cities crisis- and disaster-resilient, smart technologies are used purporting to involve people, improve city services, and enhance urban systems. Singapore's smart traffic cameras, for example, restrict traffic depending on volume and ease the commute of thousands of passengers every day. In Eindhoven, one of

the biggest Dutch municipalities, tension and aggression in the public space are reduced through adjusting lighting; sound analysis algorithms that can detect things like breaking glass, and release specific odours, such as the smell of oranges. In Santander, Spain, residents can turn their smartphones into the 20,000 sensors the city has installed, by downloading the 'Pulse of the City' app. City officials analyse the data in real time to adjust energy use, the number of trash pickups needed in a given week, and even how much water to sprinkle on the lawns of city parks. In each of these examples, the key belief and promise is that the advances and integration of smart technologies, data, and algorithms into urban life will bring about economic, democratic and safety benefits.

Although there is no such thing as *the* smart city, the power of the concept captures the minds of corporations, policymakers and citizens – making it an important tool through which cities are being reconfigured and reconstructed in the 21st century. An important reason why the smart city has become such a popular brand is the fact that it is presented as a value-neutral, objective, rational, and evidence-based concept. A claim of objectivity is often used by developers and policymakers in order to guarantee that societal decisions are based on what appear to be rational findings, based exclusively on data and algorithms with no human interference (Gillespie, 2014; Kitchin, 2014). This means that these decisions can be approached from a completely 'non-ideological' perspective. However, as Jathan Sadowski and Frank Pasquale (2015) argued, there is nothing more ideologized than the deployment of the term 'non-ideology', as it enables the concealing of the assumptions that drive those supposedly neutral, objective and common-sense solutions (see also Thrift & French, 2002; Kitchin & Dodge, 2011). In fact, all urban planning initiatives, including smart cities, which are motivated by political and commercial interests, are 'inherently ideological, because they constitute a dominant agent's vision for what urban changes or perceived improvements to public space should be implemented' (Scott, 2016: 7). As a consequence, the smart city demands deconstruction, critique, and social and cultural theory interpretations (Vanolo, 2014; Sadowski & Pasquale, 2015; Schuilenburg & Peeters, 2018; Sadowski & Bendor, 2019).

Fashionable and unquestioned city visions, whether they are 'smart', 'creative', or 'green', need particular scrutiny and must be interrogated in relation to the social imaginaries which they feed and on which they are fed (Campbell, 1996; Peck, 2005; Hollands, 2008; Lindner & Meissner, 2018). Without such interrogation, the arguments used by smart city proponents will remain unchallenged in their claims to a kind of universal and depoliticized approach to the economic, natural and societal crises cities are facing. In interrogating their underpinning imaginaries and visions, we must apply a "hermeneutics of suspicion", as Sadowski and Pasquale (2015) call for, referring to, as the word 'suspects' suggests, a critical analysis of 'obvious or self-evident meanings in order to draw out less visible and less flattering truths' (Ricoeur, 1970: 356). Who sets, for instance, the priorities and who drives the agendas of these urban imaginaries? What are the implications for those who will live or work there? Which people are included in these visions and which are excluded? In short, by which social imaginaries are smart cities governed?

This chapter examines and unpacks the social imaginary of the smart city. Starting by tracing the link between social imaginaries and urban imaginaries, we turn our attention in the ensuing paragraphs to the specific social imaginaries of the smart city. We argue that while smart technologies have become the dominant driver in the making of smart cities, they are essentially a way of rethinking cities' economic, democratic and social ways of working. Therefore, we propose to look 'beyond' the dominant driver of smart cities – smart technologies – in order to understand which imaginaries are nourished that generate and justify the need for smart technologies. We discern three types of social imaginaries that are embedded in the smart city: an economic, a democratic, and a security imaginary. By analysing these three types, we show how an economization of fields and practices, which were previously understood and analysed in non-economic terms, is taking place in our urban environment.

On social imaginaries

Several scholars have argued that social imaginaries are central to the construction of social institutions, subjectivities, and practices. They have used the imaginary as a heuristic tool in the study of societies that challenges the primacy given to material structures over cultural and symbolic ones (see Anderson, 1983; Castoriadis, 1987; Appadurai, 1996; Taylor, 2004). Although these scholars deal with quite different aspects of the concept of the imaginary, they all recognize the non-material and symbolic dimensions in the constitution of the material, while focusing on ways in which imaginaries shape and reshape reality (Vandevordt, Clycq & Verschraegen, 2018). In other words, rather than adhering 'to a false dichotomy of reality and imaginary' (Armstrong, 2013: 142), there is a need to recognise the imaginary's place in the constitution of past, present and future realities. While it is outside the scope of this chapter to discuss in detail the concept of social imaginaries, following Sheila Jasanoff and Sang-Hyun Kim (2009: 120), we understand them to be 'collectively imagined forms of social life and social order which are reflected in the design and fulfilment' of scientific, technological, national, global and other social projects.

While the nation state (Anderson, 1983) is a paradigmatic case of social imaginary, other modern social imaginaries have at different times come to the foreground, such as public sphere, civil society, the globe, the market – and, as we will argue in this chapter, the smart city. As suggested by political theorist Benjamin Barber (2013), currently, it is cities, and no longer the nation state, that are becoming the playground for politics and the main referent of late modern social imaginaries. Parag Khanna (2011), writing for the McKinsey Global Institute, argues that 'in a world that increasingly appears ungovernable, cities – not states – are the islands of governance on which the future world order will be built'. Cities have been therefore gradually imagined and reclassified as crucial "engines" (Raco & Imrie, 2000) of social and economic development.

Different scholars have used the concept of the imaginary to understand cities in general and smart cities in particular (see Soja, 2000; Merricks White, 2016;

Vanolo, 2016; Wang, 2017; De Waal & Dignum, 2017; Lindner & Meissner, 2018; Sadowski & Bendor, 2019). Martijn De Waal and Marloes Dignum (2017: 264) define urban imaginaries as ‘a set of visions, hopes, and fears that may directly affect government policy decisions, urban design criteria, capitalist investment, people’s attitudes, etc.’ Situating the urban imaginary of the smart city in time and space, Frederico Cugurullo (2018) showed how the faith in technology and innovation, professed by the proponents of the smart city, dates back to the publication of Francis Bacon’s *New Atlantis* in 1627. An iteration of a modern impetus to imagine and shape the future of the city and of urban society, the smart city is presented as the most desirable model for the development of the cities of tomorrow and represents, according to Alberto Vanolo (2014), the latest phase in the “history of urban imaginaries”. Other related notions that bear ‘family resemblance’ with the smart city are ‘tech cities’, ‘digital cities’, ‘wired cities’, ‘cyber-cities’, ‘knowledge cities’, ‘innovation cities’, ‘eco-cities’, ‘intelligent cities’, ‘sim cities’, ‘data cities’, ‘City of Things’, ‘entrepreneurial cities’, ‘competitive cities’, ‘creative cities’, and ‘sustainable cities’ (Kitchin, 2014). However, none has been as successful to capture and maintain the imagination as the ‘smart city’ has.

This all leads to the question of why ‘smart’ has become such a powerful imaginary. According to different scholars, the mobilisation of large amounts of data by different types of technologies is both the driving force behind smart city initiatives as well as the means by which these initiatives are implemented (Shelton, Zook & Wiig, 2015; Sadowski & Bendor, 2019). In what follows, we unpack the social imaginary of the smart city by elaborating the techno-utopian vision the smart city builds on, while focusing on the implementation of digital technologies in particular.

A techno-utopian vision

At its very core, the concept of smart city is based on a techno-utopian vision that data, digital infrastructures and technologies can enable urban governments to establish total control over, find solutions to, and govern all the complex social, cultural, political, and economic aspects of life in the city in a smarter way (Morozov, 2013; Söderström, Paasche & Klauser, 2014; Willis & Aurigi, 2017). According to Mischa Dohler and others (2013): ‘It is through information and communications technologies that smart cities are truly turning “smart”’. An important element of this narrative of the smart city is that smart technologies are seen as inevitable and progressive, as a ‘technocratic *pensée unique*’ (Sadowski & Pasquale, 2015: 4). The driver of the integration of “techno-utopianism” (Wiig, 2015; Vanolo, 2016), “technocratic dreams” (Dunn & Cureton, 2020), or “techno-politics” (Mitchell, 2002) into urban life, is the neoliberal notion that global competitiveness among cities will automatically make them better places to live in (Harvey, 2005) and bring about ‘economic, environmental and social benefits in future-focused scenarios’ (Caprotti, 2019: 2467). According to Zeynep Bodur Okyay (2018), president and CEO of the Kale Group, ‘it is no longer countries that are in competition, but cities. Every city will have to gain a competitive edge to differentiate itself from the rest. (...) Cities will compete and collaborate globally as interdependent

entities and will drive the future.' Inside this technocratic dream, futures are imagined to be "frictionless" (Dunn & Cureton, 2020).

Smart city narratives emphasize primarily the possibility of collecting and processing digital data and the possibility of interconnecting different types of data, such as people's movement and their spatial behaviour, traffic mobility, public transportation, energy usage, water supply, and garbage collection. Matteo Pasquinelli (2015) used the concept of 'algorithmic governance' to point out that we are more than ever trying to create and manage relations and patterns between different types of data, and as a second step identify and manage deviations or abnormalities from those patterns. As Humberto Iglesia of the smart Medellín city-pilot states: 'For us a Smart City is a city that uses data and analyses this data. For us, a Smart City is a city that is totally interconnected' (cited in Cathelat, 2019: 112). Turning big data into usable information and knowledge that can be interpreted by machines for further urban governance processes is where smart data come in. Smart city policies presume that data-driven urbanisation allows for better decision-making, optimal mobilisation of resources, coordinated public service delivery, safe and better living conditions, and overall smart governance. A good example is the Intelligent Operations Center of IBM in Rio de Janeiro, which draws together data from more than 30 different types of agencies. This enables the scrupulous control, and management of different parts of the city. As the mayor of Rio de Janeiro stated, the system 'allows us to have people looking into every corner of the city, 24 hours a day, seven days a week' (cited in Malik, 2019).

Data-driven urbanisation is in part a consequence of increased opportunities to link technological innovation with the urban environment. Rather than the construction of new cities from scratch, smart technologies are built into existing forms of urban governance and the material infrastructure of cities, such as networked sensors and actuators that both allow the monitoring of the urban environment in real time as well as act on their own intelligently with little or even no human intervention, from street lighting to automated water and electricity meters. The success of these kind of initiatives relies, to a large extent, on the invisibility of smart technologies, and also on the lack of awareness of citizens of the fact that their data are being collected. Cities, or parts of them like streets, neighbourhoods, districts, or university campuses,² have become literally test areas and laboratories in real-life conditions, so-called Urban Living Labs, that do not follow the ethical requirements that usual lab research requires. Similar to what Silicon Valley libertarians call "permissionless innovation" (Thierer, 2016), according to which technological progress should not be stifled by public regulations, smart cities are claiming their absolute freedom to experiment, test and innovate. As a consequence, surveillance technologies, understood as data gathering for the purpose of governing, are becoming so ubiquitous and subtle as to become totally 'subsumed into the background of everyday life' (Sadowski & Pasquale, 2015: 9). As an illustration, we can recall the famous statement made in 1991 by chief technology officer at Xerox PARC, Mark Weiser, that '[t]he most profound technologies are those that disappear... [those that] weave themselves into the fabric of everyday life until they are indistinguishable from it' (1991). The heavily disputed smart city project

of Sidewalk Labs on the Toronto waterfront, for example, is one of the most highly evolved versions to date of surveillance with the prospect of collecting massive data. The information, when analysed, offers new insights to modify both the behaviour of citizens in public space and the urban space accordingly.

All that is required to understand, manage and fix the problems that a city faces, is a suitable technology, sufficient data and smart algorithms (Galič, 2019). While these features reveal a great deal about the attractiveness of the smart city, a deeper and more critical understanding of the smart city is necessary in order to understand how it serves as a principle for managing our urban environments. Against the background of the currently growing debate on smart cities, we need to ask a number of questions: Which specific values and ideas underpin the concept of the smart city? Which urban visions, policies and practices are promoted by smart cities? Which imaginaries are translated into practice and policy and what is their role in the future of our cities?

A tale of three imaginaries

With the aforementioned questions in mind, we look beyond the described techno-utopian vision to unearth specific social imaginaries that drive and shape the visions of the smart city. For this, we have collected available literature, policy papers and reports of smart cities around the world in order to investigate what we call the ‘social lives’ of smart technology. Drawing on several practices that purport to make cities smart, we discern three different, but interrelated social imaginaries: an (a) economic, (b) democratic, and (c) security imaginary.³ How were these imaginaries born, how have they developed, which are the shared features and differences between them?

Economic imaginary

The central discursive trope that captures the social imaginary of the smart city is, without a doubt, an economic one: smart technologies foster growth, prosperity, knowledge, education, and more. According to this argument, ‘smart’ adds value and capital in cities, makes them ‘hip and thriving’ hubs of growth, and improves the lives of the citizens and businesses that inhabit it. Through technological ways that make cities better for the people who inhabit them, smart cities will ‘force economic growth and societal progress’, as Ginni Rometty, President and Chief Executive Officer of IBM, proclaimed in a speech on how organizations and people can become more competitive in the “era of smart” (Rometty, 2013). The construction of a smart city is promoted as useful to attract investments, leading sector professional workers and tourists (Brand, 2007; Hollands, 2008; Kitchin, 2014). Driven by innovation and entrepreneurship, its central goals are attracting businesses and jobs while focusing on efficiency, savings and productivity (Caragliu, Del Bo & Nijkamp, 2011). As market proponents love to point out, cities are massive economic engines and therefore we need to “unleash the entrepreneurial power of them” (Hwang, 2014).

The limitations of municipalities in working in a problem-solving way form a central feature of the economical perspective on governing public issues in smart cities. Worldwide, municipalities are seen as failing to live up to the expectations of those whom they govern. Where they are unable to govern effectively, the restructuring of public services is not merely a question of developing good policies but more a managerial question of organizing close collaboration between government and private parties (Meijer & Bolivar, 2015). Governments are no longer called upon to govern, command, and control. In smart cities, modest government relies on ‘steering’, as opposed to ‘rowing’, to achieve public objectives (cf. Osborne & Gaebler, 1992). This leads to networked forms of governance based on public–private partnerships, new public management, market governance, and privatization of municipal services, supported by the belief that smart city suppliers, such as Cisco, Siemens, Microsoft and IBM, can deliver immense savings on the provision of similar or even better type of services. A good example is the French city Nice, winner of the Smart Innovation 2016, where the municipality collaborates with major industrial groups, local SMEs and start-ups, especially those linked to the French Tech network and the world of research and education, in order to optimize the management of the city and the creation of jobs.

In the literature on the smart city, many scholars have voiced the need for caution regarding the neoliberal political economy that prioritizes market-led and technological solutions to city governance (Hollands, 2008; Kitchin, 2014; Sadowski & Pasquale, 2015; Grossi & Pianezzi, 2017; Morozov & Bria, 2018). Especially problematic is the tendency to see the use of smart technology by tech companies such as Cisco and Siemens as a kind of universal and rational way of governing in the city. Here, the concept of smart cities is presented as fundamentally ‘post-political’ in nature, as it disregards the political character of decision-making (Burnham, 2001; Lahiji, 2014; Wilson & Swyngedouw, 2014). This means that matters of public concern are discussed and handled in ways that foreclose questions of ‘the political’ (Rancière, 1995; Mouffe, 2005). Due to this process of depoliticization, governance criteria are increasingly reframed as ‘objective’ management criteria with an emphasis on data-driven decision protocols, measurable outputs and performance indicators to improve efficiency and effectiveness. Evgeny Morozov and Francesca Bria (2018: 10) argue that smart cities need to ‘quantify the performance of their various constituent parts in order to render them more accountable, competitive, and manageable’. This is illustrated by the growing importance of rankings, competitive tables, and comparative scores of smart cities, which offer the means for cities to market their attributes and use such performance indices as a means to ‘outsmart’ one another (Giffinger et al., 2007).

Democratic imaginary

A second trope that captures the social imaginary of the smart city is that smart technologies enhance democratic processes. The democratic argument is rooted in the idea that smart technologies have the potential to leverage newer and richer forms of public decision-making and democratic participation. These technologies

are increasingly presented as being ‘citizen-based’ or ‘people-centred’ and as having the potential to provide information to citizens in an interactive manner so that they can co-create and participate in all sorts of public policy processes that lead to smart governance (Cowley, Joss & Davot, 2017; Kumar, 2017; Cardullo & Kitchin, 2019). In Vienna, almost 600 official assistance pages facilitate or replace the physical municipal authority. Surveys among the users show: “Who ‘goes online,’ saves about 2 h. Very smart!” Here, the concept ‘smart governance’ is used to capture these new technologically mediated governance arrangements and practices. Examples of smart governance take different forms and include, amongst others, hackathons, living labs, fablabs, smart urban labs, citizen dashboards, maker spaces, smart citizens’ labs, gamification concepts, and open datasets.

According to William Webster and Charles Leleux (2018: 101), the so-called participatory governance practices share four characteristics. They all have a focus on smart technology, whether it is reusing existing data or designing new applications to participate. Also, they all require the input and engagement of citizens. Next, they involve a physical as well as a virtual digital interaction. And, finally, each requires an initial stimulus from formal public agencies⁴ in order to create the space and provide opportunities for engagement. Many examples of public decision-making processes emphasize the transformative potential of the use of smart technology. Key terms of these citizen-first or people-centred approaches are ‘participation’, ‘mobilisation’, ‘trust’, and ‘inclusion’. As Mikko Rusama, Chief Digital Officer of the smart city Helsinki, puts it: ‘We are working to build a culture of trust. The trust is based on openness, transparency, and the sharing of data and how decisions are made’ (cited in Cathelat, 2019: 230).

The acclaimed social use of smart technology to enhance democratic processes deflects the attention away from the fact that it still remains unclear which examples of smart governance work best in which contexts. Also, and more importantly from the perspective of this chapter, it remains unclear how citizens are envisaged as democratic actors in smart cities.⁵ It is not surprising that the emphasis on the role of the technologically ‘empowered’ smart citizen comes at a time of increased critical scrutiny of smart cities (De Waal & Dignum, 2017). In 2017, Dhaka, Bangladesh, hosted the Smart City Week to ‘focus on building people-centred cities not only investing in technology and infrastructure alone but also engaging smart people who care.’ A driving force behind smart projects is corporate-driven awareness that we need enough social peace and enough equity to avoid discontent among the citizens of smart cities (Cathelat, 2019). In its 2018 Trends, Cisco expresses this concern as follows: ‘Ignoring the poor, the foreigners, could be a destabilising factor.’ The marketing push for smart cities comes with an obligatory nod to ‘bottom-up’ solutions and community involvement. This means that citizens, as ‘consumers’ and not as ‘political actors’, are required to express their opinions on the quality of public services. Critics have pointed out that this ‘undermines more collective imaginations of citizenship, solidarity and mutual responsibility, feeding into a neoliberal individualist ethos of consumership, where the market determines what is best for citizens’ (De Waal & Dignum, 2017: 267; Cardullo & Kitchin, 2019). At the same time, critics have shown how frequently the so-called

‘citizen-participation’ projects are simply forms of tokenism, where citizens can have their say, but do not have any significant ‘political’ influence (Gordon & Mihailidis, 2016). It would be in fact utterly naïve to assume that each of the involved actors in such projects have equal or even comparable roles or power.

Security imaginary

The third trope of the social imaginary of the smart city is that smart technologies promise a safe and secure future for its citizens. When a city is considering investment in smart technologies, public safety and security are often key drivers for implementing a given initiative (Lacinák & Ristvej, 2017; Schuilenburg & Peeters, 2018; Pali & Schuilenburg, 2019). In Hangzhou, for instance, part of the corporate-driven project City Brain, a sub-project has been developed, called Community and Public Safety, where video analysis technology and video recognition algorithms are used to take preventive measures to ensure the safety and security of the public. The possibility of permanent surveillance of citizens by using smart technology that gathers and integrates big amounts of data is promoted as enhancing better protection against the dangers of criminality and disorder, but also against a varied and colourful range of natural or man-made disasters (such as floods, storms, traffic accidents, fire accidents, mass violence, terrorist attacks, water safety, network security, etc.).

The implementation of smart technologies emanates from the insight that crime levels are, and will probably remain, high in open and prosperous cities, and that local governments have only limited possibilities to deal with this situation. Tasks in this domain are increasingly being transferred to private tech companies that tackle them in their own particular way. On the one hand, commercial parties are increasingly being assigned ‘police-type’ duties, such as the monitoring of shopping malls, business estates, university campuses, airports, and gated communities (Shearing & Stenning, 1983; Wakefield, 2003; Schuilenburg, 2015). On the other hand, commercial parties employ the software for law enforcement agencies in order to protect citizens against crime, disorder, and other unwelcome behaviour. In this new framework, there is mention of collaboration with the local government to a greater or lesser extent. The formalization of the collaboration between municipalities and private tech companies occurs by means of contracts or similar agreements, such as protocols and covenants.

In the jumble of new smart technologies to create risk-free and safe cities, a rough distinction can be made between predictive and psycho-political technologies (Pali & Schuilenburg, 2019). Preventive technologies, such as predictive policing, facial recognition, automated license plate recognition system, biometrical control, and advanced video monitoring, have been implemented in a number of smart cities, including Amsterdam, Atlanta, Chicago, London, Stockholm, and Singapore. Singapore’s government, for example, has launched the Lamppost-as-a-Platform project to install 100,000 surveillance cameras throughout the city linked to facial recognition software. Proponents of these technologies highlight the low-cost relative to more traditional crime control. According to tech company IBM, one of the

first companies to employ the software for law enforcement, predictive policing, for example, is helping mayors and police departments to tackle crime on a reduced budget. It is a cost-effective way to 'do more with less' because it streamlines law enforcement operations in numerous ways, from tracking, searching and detecting suspects ('hot persons') to proactive crime prevention by identifying crime areas ('hot spots'). Several critics have emphasized the risks of these technologies for privacy, discrimination and marginalization of certain groups. John Cheney-Lippold (2011: 165), for example, highlights the problems associated with a "new algorithmic identity", an identity formation that applies mathematical algorithms to infer categories of identities based on group profiling.

Psycho-political technologies are techniques used to actively modify the behaviour of the visitors of public or semi-public spaces in smart cities. Smart sensors and devices, for instance, allow streetlights to dim or brighten automatically based on the activity on the streets, to ensure both efficiency and safety. At the same time, these sensors and devices help people to travel the most effective routes, avoiding noise and areas that have a high crime intensity. For example, GPS navigation app Waze has included an 'Avoid Dangerous Neighbourhoods' functionality and designates 'dangerous neighbourhoods' around the world (Liberatore, 2016). As a consequence, smart technologies, including apps and bots, ultra-personalize our urban experience by providing real-time information to modify our behaviour. This is made possible by wearable technology like smart watches and smart glasses, wholly centred upon individual needs. A second form of psycho-political techniques is the moulding of the atmosphere of public space through odours, light and sound manipulation by analysing large amounts of data – including amount of social interactions, police presence, waste in the street, parking density, sound level, and weather information. The aim of these techniques is to reduce tension and aggression and to establish, what the Dutch smart city Eindhoven calls, "a happy city". The colour blue, for instance, is believed to have a cooling and stringent effect. When the right shade of blue is used, it can lower heart rates and reduce people's aggression (Schuilenburg & Peeters, 2018; Pali & Schuilenburg, 2019).

Neoliberal ethos

It is important to realize that the smart city is not just a technological narrative, but rather one which involves complex political and social ordering processes, populated by images, stories, dreams and so on. We should acknowledge the ideological nature and appealing visions of these imaginaries. This means that the smart city needs to be understood as a performative term, as it allows public and private parties to reshape and transform the city according to the shared imaginaries articulated in the notion of the smart city. Following sociologist Donna Haraway (2011: 4): 'It matters what stories make worlds, what worlds make stories.' Beyond a technological narrative, we have shown that the smart city is embedded within three other social imaginaries: an economic, a democratic, and a security imaginary.

As to the shared features and differences between these social imaginaries of the smart city, it is clear that they are embedded in a neoliberal ethos of market-led

and technocratic solutions to city governance and development. Neoliberalism, as scholars like Wendy Brown (2006, 2015), David Harvey (2005) and Quinn Slobodian (2018) argued, is not simply about laissez-faire, deregulation and privatization. It is also about intervention and regulation of social processes and security governance with the aim of injecting market principles of competition into these spheres of urban life. Smart infrastructure, for example, both controls and facilitates the freedom of citizens by actively regulating and managing both the atmosphere of public space and the behaviour of individuals. As a consequence, ‘control comes to be so subtle that it may well present itself in the form of “choice”’ (Savat, 2009: 57).

The neoliberal ethos means that economic rationality is not confined to the economic sphere of the smart city. Besides the economic sphere, both the political (democracy) and social sphere (security) of the smart city are increasingly dominated by market relations and organized according to an economic rationality. As a consequence, economic criteria are extended into urban spheres which are not economic. This means that the political and social sphere of the smart city becomes redefined as an economic domain. The model of the market is extended into the political and social arena of the smart city – even where money is not at stake – thereby collapsing the distinction between these spheres. As a consequence, the public sphere of the smart city is structured by specific forms of intervention, including new forms of decision-making processes and security provision. This is reflected in the governance criteria of democratic processes and security provision. These criteria assume that competition is the only legitimate organizing principle for the governance of both spheres. The consequence of this process of depoliticization is that governance criteria of both spheres are presented in apparently neutral terms, such as ‘customers’, ‘consumers’, ‘effectiveness’, ‘efficiency’, and ‘indicators’.

The extension of entrepreneurial forms within the political and social domain of the smart city shows that criminality, for example, is no longer seen outside the market model, but is considered a market in itself. IBM has spent ‘more than \$14 billion on developing predictive analytics software for both commerce and law enforcement sectors’ (Wang, 2018: 231). In Atlanta and Chicago, IBM provides judicial authorities with information that allows them to detect crime patterns based on big data analytics. According to the company, they are helping the police to work better because ‘law enforcement’s main problem is the fragmentation of information’ (Willis & Aurigi, 2017: 156). Coupled with insights from the field of behavioural economics, the implications of such developments are wide-ranging, especially considering that the normative consequences can hardly be underestimated. The economization of security is ‘sold’ by tech companies with the message that the governance of security is measurable and controllable and therefore can be managed. As a consequence, efficient solutions are confused with good solutions, whereas the crime issue really involves difficult and long-term processes without commercial motives or a profit-and-loss mentality being involved. Does one wish to tackle urban problems by offering inhabitants more job and housing opportunities, or is one merely seeking commercial success by deploying smart security

technologies to stimulate an efficient, safe and consumption-focused use of public space?

Conclusion

Nourished by a techno-utopian imaginary, which highlights decision-making algorithms based on data gathered in smart projects, the ‘brave smart city’ promises to solve all kinds of crises and disasters that cities will face now and, in the future, leading to smarter ways of being, living and governing. Viewed as utterly ‘desirable’, ‘inevitable’, ‘rational’, and ‘post-political’, ‘smart’ has colonized our urban futures. Mayors are racing to turn their cities into smart ones, and large tech corporations are selling cheap smart dreams at a high price. Against the background of the growing popularity of smart cities, it becomes important to discuss the alleged neutrality of smart technologies. While these technologies in themselves are neither good nor bad, they are also not neutral because they are hooked into a broader social imaginary of life in our cities. In other words, smart technologies are always a function of power relations – and so are their effects.

As we have shown in this chapter, taken-for-granted unquestioned smart city visions need particular scrutiny and must be interrogated in relation to the social imaginaries that govern them. Against the background of the growing debate on smart cities, we need to understand these visions, policies and practices promoted by smart cities, that are translated into practice as well as their role in the future of our cities. More specifically, we showed how smart ‘storytelling’ is built on a core idea that advances an integration of smart technologies into urban life that will bring about economic, democratic and security benefits. By critically interrogating the economic, democratic, and security imaginaries, we showed how a neoliberal ethos is increasingly pushing economic rationality into fields and practices which were previously understood and analysed in non-economic terms. This neoliberal ethos regulates political processes and security governance with the aim of regulating social life according to market principles and forms of competition. In other words, it favours corporate interests and is driven primarily by commercial gain, while preventing the production of alternative imaginaries of urban space.

Aiming at ‘repoliticizing’ the smart city debate (cf. March & Ribera-Fumaz, 2016), we claim that we need to unpack the smart city into different layers of promises, visions, and fictions that are invested in the concept and hold it together. Our core argument is that the described imaginaries are fundamental in structuring our experiences, shaping our realities, and making our futures, as much as they are crucial in disabling alternative experiences, realities, and futures. They are an intimate part of our lives as they profoundly colonize our existence. A critical understanding of the imaginaries that govern smart city projects is only the starting point. Once we understand and decode smart projects, we can find ways to disengage with them, to stop being seduced by them, and to engage ourselves with alternative imaginaries, which have nothing to do with the market and competition.

Notes

- 1 Debates over the meaning of smart city ‘started in 2007 with an IBM marketing campaign, it culminated in 2011 with the company registering the trademark “Smarter Cities”’ (Schürer, 2020: 49).
- 2 The University of Glasgow, for example, has been working with innovation centre Future Cities Catapult on a strategy to bring smart tech to the campus. According to Gemmy Ginty, one of the designers who worked on the strategy, universities are uniquely well placed to experiment: ‘Smart cities are kind of slow-moving. Cities are so big, and there are so many players and stakeholders, it can be difficult. But universities have control over their estates. They own all the buildings, they own all the networks and they have a captive audience in terms of the students, so they can become like a living lab’ (cited in Niemtus, 2019).
- 3 See also Hollands (2008), who presents the smart city agenda as covering four broad concerns: more efficient political and economic management through the use of networked infrastructure, business-led urban development, favorable conditions for investment in the technology and creative sectors, and social and ecological sustainability; and Rogan (2020), who deconstructs the ideology of smartness along three axioms: the economic, the political, and the spatial.
- 4 Barcelona is an interesting example of a pioneering smart city, which, after a technocratic turn, elected Ada Colau as a mayor on a mandate of democratizing the city and putting citizens centre stage, by opening digital platforms to greater citizen participation and oversight and promoting ‘technological sovereignty’. In 2018, the Smart City Expo in Barcelona, used Henry Lefebvre’s phrase ‘right to the city’ to demand a more inclusive and participatory city, calling for a ‘right to the (smart) city’.
- 5 See Cowley, Joss and Davot (2017) for a typology of smart city ‘public’ in six different cities in the United Kingdom.

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