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Urban Landscapes and Dystopian Scenarios: Smart Cities for Whom? Tales of Inclusionary and Exclusionary Practices[1]

Lucas Costa dos Anjos and Maria Clara Oliveira Santos***

Abstract
This paper aims to analyse the relationship between smart cities and both its inclusionary and exclusionary practices with regard to landscape transformation and citizen participation in the urbanization process. Although currently proposed models of smart cities allow for the individualization of technological intermediations, the landscape paradigm may very well serve as a tool against processes of spatial marginalization, thus valuing urban plurality. Smart cities usually reflect a deepening of social hierarchies in the midst of high technology and it seems closer to the cultural portrait of dystopian narratives centered on the loss of human control over nature, society and technology. While in fiction these tales relate scarcity, marginalization and insecurity aspects that stem from the allegorical optimization of human actions in favor of one group, the increasing incorporation of new technologies into the daily lives of cities nowadays shows these same elements presented in the form of innovations (Internet of Things, autonomous cars, face recognition, Amazon's Alexa, etc.). Faced with the rising global phenomenon of cyberculture, we must question the arrival of the future in order to prevent life from imitating art, assuring that cities keep their hegemonic function consistent with the heterogeneity of its interests and groups. In this confluence of factors, law, governments, media and technologies can interact in a variety of subjective ways. From different perspectives, the landscapes of smart cities reveal more than a horizon of technological modernization: they represent and resignify actual social disputes in the urban environment. But to whom are they destined?

Keywords: *smart city; landscape; privacy; technology; inclusion; marginalization.*

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Introduction

Shot in 1982, *Blade Runner* is a film set in the futuristic Los Angeles of 2019, full of flying cars, skyscrapers and ubiquitous advertising screens composing its plot scenery. Although the merit of the story goes well beyond its special effects and elaborate aesthetics, one can not help but recognize the imaginary importance of the future dystopia that permeated Ridley Scott's mind in the 1980s. Basically, various technological elements were suggested to compose a model of *vigilante* city, where the past (human) and the future (android) dispute spaces in search of recognition, survival and even love.

In this context, a kind of delirium involves spectators through visual and narrative resources, among them the ubiquity of forms of control: the *Voigt-Kampff*, an interrogation polygraph to check if someone is really human; the *Spinner*, a flying car used for police surveillance; and domestic artificial intelligence that perceives mood swings, performs facial recognition, and suggests profiled behavioral practices.

The architecture of the cinematographic city also reflects a deepening of the social hierarchies, of urban conformations in which the rich ones live in elevated, ample, clean and silent environments, whereas lower classes dispute space in dirty and crowded streets, live in minute apartments and are constantly subjected to thousands of lights and sounds of advertisements that hijack their attention.

Giving life to cyberpunk fiction, alongside the boundless confluence of high technology in the midst of a few (and remaining) biological elements, dystopias are often narratives centered on the loss of human control over the development of society and technology, or natural resources needed for survival. This type of stories gather scarcity, marginalization and insecurity with the allegorical optimization of human actions in favor of one group and, usually, to the detriment of others. As David Cosgrove refers, 'every utopia is as much an environmental as a social vision' and its study tells us much about the links between human society and environment' (Cosgrove 1989, 132).

Although cities are yet to be taken by flying cars, the future envisioned for 2019 is not as far away as one might think. With the increasing incorporation of new technologies into the daily lives of cities, we see some of these *Blade Runner* elements presented in the form of innovations (autonomous cars, face recognition on social networks, Amazon's Alexa, etc.), which qualitatively shape sociability standards and the production of urban space.

Faced with the global phenomenon of cyberculture, this essay aims to question the arrival of the future in order to prevent life from imitating art, assuring cities their hegemonic function, but also in consistency with the

heterogeneity of interests and of groups that compose it. In this confluence of factors, law, governments, media and technologies interact in a variety of ways. From different perspectives, objectively and subjectively, the landscapes of intelligent cities reveal more than a horizon of technological modernization: they represent and resignify the very social disputes in the urban environment. In that sense, we draw attention to the challenge that arises from the pressing personal costs on the urgency of balance between citizen´s rights and public interest, while asking to whom are smart cities in fact destined?

1. Methodological Approach

This paper offers a brief and overall view on the prospects of the uprising technology usage in cities and public spaces by selecting examples that have the potential to demonstrate how space production can be captured by pervasive technologies and vigilantism and how that can be even more complex in a developing country scenario.

Being part of an ongoing research that focuses on technology use to foster people participation on the co-creation of urban spaces, this study only shed light on the fact that the smart vision of a city can also lead to problems of privacy and increase geographical marginalization by creating vulnerability and directly affecting communities' right to the city. For that, the selected cases are read by the lenses of Brazilian authors Celso Furtado (2008) and Milton Santos (2014) in order to make a clearer statement on economic and spatial issues showing a concern that differ with respect to a namely global-south challenge.

Analyzing the state of the art of literature on this topic involves key areas such as protection of algorithms as trade secrets in business models, users' fundamental rights online, data protection regulation and emerging regulatory propositions to enable privacy by design, non-discrimination by design, artificial intelligence regulation, etc.

The main purpose of the paper is to develop a framework of combining instruments of inclusion in a more broader perspective by establishing the importance of the six dimensions of urban intelligence (Giffinger 2015) and the convergence of plural perspectives by adopting the landscape paradigm to prevent technology from being of use of just a few. This is also a work still in process, and this paper derives some first thoughts about discrepancies on the way technology can be applied to create models of exploitation and reproduction of physical and virtual space, being a threat to privacy rights and public freedom.

The paradigm of urban landscape as a form of preventing institutionalized systems of labelling and branding cities, as such global, creative, sustainable and also smart, just to establish an economic approach to foster areas that will not have integrated responses to people's daily problems. These dimensions emerge not only from literature, but also from an informal observation that led us to a comparison with some art created scenarios. Thus, in order to achieve a main research goal, this investigation is, necessarily, multidisciplinary.

For the purposes of this research, physical and online databases were used as primary sources of investigation, available at Université libre de Bruxelles, the European Commission, Google Scholar, Scopus, Scielo, SSRN, Portal de Periódicos CAPES, Research Gate, among others. By means of keywords pertaining to the subject, titles and literature were collected in the form of journal articles, website articles, books, and official legal texts, in English, in Italian and in Portuguese.

This research is mainly comprised of qualitative analysis of the literature available regarding smart cities and data privacy. At this stage of our research, no quantitative analysis of data have set results, especially due to the fact that some of the objects of the study are yet to be addressed in public debates and in courts. Nonetheless, science has the chance to deal with the pressing matter of providing adequate solutions not only to problems already being tried in courts, policy making and markets, but also to those that are bound to rise. And can also challenge that by using comparison with other fields of human intellect, such as art.

2. Cities Produce and Transform Themselves

The twentieth-first century was marked by a series of transformations in human and social behavior. Among the many changes that have taken place throughout the period, we can highlight spatial and technological approaches for this particular analysis. Although also characteristic of the twentieth century development, the spatial approach does not refer to the conquest of outer space, nor to the technological and arms race of the Cold War. It happens here, on our own planet, much influenced by the technological advances and socio-political movements of the time (Westphal 2014, 20), subsidizing economic processes, political decisions and cultural factors that act as driving forces in the territory.

The space produced by each society is the stage of economic production, of social hierarchies, of powers, of knowledge and of rites. In this regard, the transformations of each era are inscribed at the social spaces translating the body of individuals, generating perceptions and representations, orders

of values and memories to be transmitted, rooting the experience of today and treasuring the hopes of tomorrow. The social physical space is, to some extent, the mold of convergence of individual perceptions and expectations (Settis 2012, 51-52).

Combined with a spatial approach, the technological perspective promotes the homogenization of human's space from a technical-scientific-informational medium (Santos 2014, 240), enabling processes prompted by globalization. The search for mercantile efficiency of places raises a series of races to leverage spatial and geographical productivity, reproducing the characteristics of the productive model in different fields.

> Places specialize in terms of their natural potentialities, their technical reality and their social advantages. This responds to the requirement of greater security and profitability for capitals forced to an ever increasing competitiveness, which leads to a marked heterogeneity between territorial units (Z. Milnar, 1990: 58), with a deeper division of labor and a more intense life of relationships (Santos 2014, 248).

A phenomenon that engages even more intensely in the twenty-first century, urbanization marks the passage from rural life to urban life by most inhabitants of the planet, with a current migratory flow of 10,000 people per day (MIT Technology Review Insights 2016). It is estimated that by 2050 about 68% of the world's population will live in cities, which will hold a population of more than 6 billion individuals, according to updated UN data (Organização das Nações Unidas 2018).

To deal with the myriad of consequences of the urbanization process, various models of organization and optimization of urban services have been proposed over the last decades. The most noteworthy and that still finds echoes in models of urban planning is the model of global city (Borja and Castells 1996, 152-166), a stage for major events and the center of public policies that, by implementing a project of urban transformation capable of overcoming the sensation of acute crisis generated by economic globalization, would promote negotiation among the various urban actors. As a result, economic, social and cultural developments stem from the joint action of public and private actors. Intensely publicized in the 1990s, adaptations to this proposal soon appeared and turned into several different classifications for cities that adopted it, stemming from a central propeller of the new urban dynamics.

The so-called *creative cities* also emerged by focusing on the development of a creative industry, in order to develop new economic actions and participation of society in urban cultural life. This model of city seeks to use the information revolution for a creative and democratic cultural purpose

(Australia 1994) and promoted the creation of Unesco's Creative Cities Network, in 2004. Currently, 180 cities in 72 countries concentrate their economic, social and urban development activities in one of the proposed thematic areas: crafts and folkloric arts, design, cinema, gastronomy, literature , media arts and music (Unesco 2018a; Unesco Brasil 2017) .

This model of city allowed significant modifications for different urban networks. Older cities have renovated their historic centers and offered new attractions, such as exhibitions and fairs, and have promoted the diversification of the target audience of their cultural facilities, such as museums and public libraries. In addition to that, they also have adopted an agenda of festivals and concerts in new and expanded spaces of leisure and cultural action, which have resulted in the conquest of a younger (and consequently more dynamic) facet for these urban areas.

In an attempt to rejuvenate, London resumed its vocation of the 1960s and 1970s - and its association with the world of design, pop art and music - to chart an economic strategy in the post-industrial setting that is capable of putting such activities at the service of the city and its citizens - not the opposite (Reis 2012, 143-150). The case of London nevertheless expresses common collateral problems for this type of headway strategy: the creation of a network of protectionism in terms of intellectual property[2] and insufficient inclusion of ethnic minorities in the economic movement generated (Reis 2012, 162).

As an example of this model in developing countries, Colombia has been investing heavily in the adoption of creative industries in several cities, with the support of the British Council and of multilateral institutions such as the OAS and UNESCO. Bogotá, its capital, translates the difficulties of urban planning in the peripheral regions of the globe. Economic and social issues such as drug trafficking, urban violence and income concentration that encourages internal migratory movements, give the urban fabric a constant permeability and volume that burdens any planning to the necessarily deal with the inexorable existence of contradictions that create extreme impacts on established policies.

Bogotá's main course of action was to manage a series of cultural programs that clustered the educational system to address social conflicts and to encourage the appropriation of the city by the population, in a practical application of the right to the city's guidelines, with special emphasis on

[2] Despite the creative industries that reside in the city, as well as its large capacity for the production of intellectual property assets (patents, computer programs, copyrights of artistic, literary and phonographic activities, etc.), London is still considered a stronghold of restrictions on the access of intellectual property, even for educational purposes, personal use, libraries, among others.

public space and the value of diversity in cultural spaces, in order to widen the connections between social classes in public areas. To do so, the city bet on innovation diversity, promoted a broader way of connections and encouraged cultural activities based upon an urban transformation process which also involved the public transit policies and the creation of a new network of libraries.

On the other hand, the development of urban areas has also raised concerns about the indiscriminate use of the planet's natural resources, as well as changes resulting from the new spatial configuration. The risk of natural exhaustion, combined with the contamination of growing areas by waste and residues generated by the new human settlements, led to the elaboration of a series of environmental programs for the recovery and renovation of these urban centers that, adopting the paradigm of ecological balance and recovery, are proposing to become *sustainable cities*.

This other model of urban development program has been gaining ground in recent years driven by scientific analysis of rising global warming, its correlation with CO2 emissions, which occur mostly in urban areas, and the irreversible impact of climate change on the planet's biosphere, leading to the extinction of countless species (Freitas, 2012, 103). In order to guide the diffusion of this model, UN has created a Sustainable Development Goals platform that enlists 'making cities and human settlements inclusive, safe, resilient and sustainable' as the 11th of them (United Nations 2018), establishing a series of measures that ought to be adopted by 2030.

The environmental agenda is not exactly new and, while has gained considerable space in the debates of the second half of the twentieth century, it has provoked conflicts by proposing a program to preserve the natural environment based on a paradigm of disruption and interdiction of human activities that were endangering the environment's well-being. At the beginning of the last century, a model of urban planning that encouraged people to leave the metropolis and inhabit garden cities gained momentum[3]. Surrounded also by a bucolic perspective, which pointed the city as the greatest destroyer of nature; by condemning urbanization, 'despite its globalizing demands, the ecological paradigm has lost its most important meeting point: the one with the territory' (Gambino 2006, 208). The devastation wrought by the Great Wars and colonial disputes throughout the

[3] Movement initiated by Sir Howard in the beginning of the twentieth century upon the publication of the book *Garden Cities of To-morrow* in the United Kingdom, it has spread all over the world inspiring a new concept on urban life, more connected to a rural-natural idea of living for the work class. Even though the concept was applied mostly in a partial scale by planners, its principles have shaped a consistent way of design for townscape in the years to follow (Howard 1902, 2-7; Hall 1998; Correia 2014, 161-198).

century have further strengthened a doctrine of resistance of an untouched nature that saw human action only as destructive to the planet.

Nevertheless, the wave of urbanization prevailed and this model of space occupation is currently seen as a possible safeguard of nature. The main objective when it comes to equating the impacts of urban life is to create energy efficiency networks and reduce waste production. Looking at the ecological balance, cities are considered motors of prosperity (Kunzig 2011, 42-61), and the idea of sustainability gradually assures a new content to the concept of development. A city will be defined as sustainable 'if its conditions of production do not destroy, over time, the conditions of its reproduction' (Castells 2000, 118-122).

In the search for ecological solutions to the problems of urbanization, Europe has been electing annually, since 2010, a Green Capital (European Commission 2018). In addition to conventional green areas, such as parks, it is necessary to invest in an infrastructure where natural areas are designed to perform a number of functions, while continuing to meet the requirements of maintaining air quality, improvements in the transportation network and adoption of measures to deal with climate change. European sustainable models invest heavily in innovation for the creation of this green infrastructure.

Brazilian urbanization, on the other hand, with 80% of the population already residing in urban areas and covering 65% of the national GDP (Instituto Brasileiro de Geografia e Estatística 2017a), has also been accompanied by the inception of policies aligned with the United Nations Sustainable Development programs - notably the 2030 Agenda (2015) and the New Urban Agenda (2016) (Instituto Brasileiro de Geografia e Estatística 2015) - despite results that are not satisfactory. Only 8 of our 5,570 Municipalities integrate the worldwide list of creative cities[4], and none reached sustainable development goals (Instituto Brasileiro de Geografia e Estatística 2017b), with large cities concentrating areas with the best urban structures and, at the same time, the worst problems of density and housing quality, for example[5].

Some of the attempts to implement urban renewal policies in Brazilian cities suffer from a thorough disbelief in the potentialities of transformation. The major obstacle seems to be the association of these creative and

[4] These are: Belém, Brasília, Curitiba, Florianópolis, João Pessoa, Paraty, Salvador and Santos (Unesco 2018b).

[5] 'What we call the Atopic city is precisely the city that is the most incisive, violent and excessive manifestation of consumer society. Atopic is thus a city situation; a city that is obscene by the positive flow of capital and the excessive visibility that exposes everything as value and subsumes the negative tensions of everyday life' (Leite 2016, 262).

sustainable ideas with urban marketing brought up only to the extent of an artificial image construction, 'aimed at eliciting and constructing reckless and unnecessary consumer desires' (Reis 2012, 77), as well as to create services and goods privileges for specific groups, thus compromising the viability of programs that could allow the conscious and civic integration of all those who conceive the city.

3. Urban Landscapes and Intelligence in Service of its Integration

The construction of models for the development and renewal of cities goes back to a long-lasting idea that there is an urban crisis to be overcome, and that it stems from the absence of mechanisms to enable economic growth and social well-being. The production of the city, which is due to human action par excellence, would also cause space swelling and human incomprehension over its totality (Bresciani 2004, 15). As a result of this sense of crisis, there is a loss of control over key areas of urban organization.

By establishing sector-specific renovation programs, creative and sustainable cities have their transformational capacity conditioned to a fragmented vision of the city. While fundamental to ensuring quality of life, culture and environmental balance, these programs are not in themselves capable of establishing a holistic view of the challenges facing urban centers. Cultural policies expose the risk of privileging disclosures from a particular social group, while environmental actions may exclude human potential by considering only the negative effects of its impact on nature.[6] To the most common criticism of the models presented above, we can also argue that only a limited latitude of sectors are affected by sustainability programs and index: mainly energy, water and transport.

Although these sectors are crucial for the redesign of the urban network, the quest for setorial efficiency precludes a comprehensive approach to urban phenomena. Cities need actions that have not only cultural or environmental targets, but also glimpse the composition of a safer, smarter, healthier and financially balanced environment. The use of information technology is already indispensable for overcoming the challenges created by urbanization, and city renewal and empowerment programs adopt platforms that prioritize cost and resource efficiency in establishing development policies,

[6] Alain Roger's critique of this type of vision questions the reason for the obsession with the environment, the reduction of territory and space to a purely biological value, excluding any cultural character. To this vision of the world, it confers the title of 'verdolatria', or 'green idolatry' (Roger 2013, 143-145).

but it is necessary that cities be, in addition to creative and sustainable, truly intelligent. For this, we must go beyond technology (Mora et al. 2019).

The different technologies employed in the creation of these cities should be based on a model of innovations that is, in addition to being efficient in terms of cost and resource efficient, intelligent, lean and integrated (Ahvenniemi 2017, 234). This should be the point of development of smart cities-to-be. Cities must operate platforms capable of harmonizing the various areas and elements that constitute them, in order to enable the perspectives of realization of the individual, whether public or private, to be connected in the established development and protection network.

Tellingly, the adoption of the paradigm of urban landscape can be an incremental factor to proposed dynamics of intelligence. If, on one hand, smart cities have similar goals to those of sustainable cities (Ahvenniemi 2017, 234), on the other hand, the reconciliation between economy and ecology propagated in them should serve not only to interconnect green spaces and built areas (so-called *green-gray integration*) but also to assure connectivity and multifunctionality to the spaces in a socially inclusive environment.

As the space of the city is also a *space of flows* with three layers of material support,[7] it will be up to circuits of electronic impulses to foster a space transformation strategy enabling the affirmation of cultural and identity references from and to that community. The objective is to bring together the cultural and environmental paradigms in the production of a platform inclined to review and update the processes that already occur in the city, without neglecting elements that were previously considered subsidiaries. The understanding of the urban space from its landscape results in an equation that allows to add the elements of the previous models and to compose a holistic vision of the questions to be faced. For these purposes, landscape is understood as the result of the interaction between culture as agent and nature as a medium (Sauer 1963, 315-350).

> Landscape is a connective term, a Zusammenhang [context]. Much of its appeal to ecologists, architects, planners and others concerned with society and environmental design lies in the landscape's ability to combine immeasurable or even dialectically opposed elements: process and form, nature and culture, territory and life (Cosgrove 2006, 52).

[7] Castells also explain that the first of these layers would be a circuit of electronic impulses; the second of them would be the nodes, or the centers of strategic and communication function; and the third is related to the spatiality of the dominant managerial elites, because the organization of the space of flows is also asymmetric around hegemonic interests (Matos and Braga 2005, 116).

The polysemy of the landscape concept carries the potential of laying the foundations of a system able to delimit an ensemble and its functionality, also in an operational perspective, since the landscape 'includes things on their on and also its own image, its representation, organized in types, motives, and models', (Dalmagioni 2008, 26) and serves as a characteristically modern form of representation and encounter with the external world, whether in its graphic and pictorial qualities or in the means of connecting the individual to the community, as well as in forms of graphic representation such as maps, urban furniture, paintings, photographs, videos and films (Cosgrove 2006, 51). 'Among digital interfaces, subject and landscape bring upon a symbiotic relationship and a form of continuous interaction', (Di Felice 2009, 227) capable of changing the sense of understanding places and ways of experiencing them.

An understanding of the urban landscape can prevail over the merely aesthetic character of forms of expression and, still associated with its pictorial component, begins to incorporate human and social values and feelings into a more visceral reference experience. In this sense, territory can also produce well-being sensations that are marketable and directed not only to collective social practices, but also to the production of capital value and convenience transferable to consumer relations.

In order to deal with the complexity that stems from the interactions between the symbolic, material and capital values that emanate from the dynamics of urban space, the educational system must target a technological approach that involves, more than a digitally-inspired agenda, an emancipatory one. The qualification of interested agents for a multilevel governance composition, capable of underlining the cultural and social diversity that compose the city (Van den Brande 2012, 355-356), must dialogue with a collective project of technical innovations to be implemented under an economic and environmental effectiveness criteria, with affordable costs that ensure their inclusive potential (Giffinger 2015, 21). Thus, adopting a learning-based approach can present itself as a strategic challenge to ensure the six dimensions of urban intelligence: *smart economy, smart mobility, smart environment, smart people, smart living,* and *smart governance*.

In this respect, smart urban databases formation must capture the balance of natural characteristics, built area and the relations that are established between them. Additionally, it must consider as paradigmatic the viability of an urban landscape that translates not only the well-being related to these features, but also the values to be shared by individuals who travel and relate in the general spaces of the city, whether public or

private, with a direct impact on how public areas are used.[8] Cyberculture heads to a generalized telepresence civilization (Lévy 1999, 129), in which the physics of communication responds to a hybridize space, body and information tendency (Di Felice 2009, 224), establishing a shift to digital forms of interaction and creating a universal sense by means of contact, from a borderless continuum, where humanity dips in a pool of interactive communication amid other beings (Lévy 1999, 129).

4. Possible Accessibilities

Amongst the main benefits of using technology at smart cities, are the various forms of inclusion and accessibility. The vast availability of data and digital metrics, coupled with the Internet of Things (IoT),[9] provides unimaginable connection possibilities, even by science fiction directors: burglar alarm devices (public safety); traffic volume sensors for the automated timing of traffic lights (traffic management efficiency); geolocation of loads and passengers for the generation of metrics of processes and people (urban mobility); watering of plants and trees according to the climate and the daily solar incidence (rationing of water resources); and public and private lighting through motion sensors (energy efficiency).

These and other applications in the urban context corroborate profound changes in the landscape of cities, from the experience of mobility by the interactions between cars and pedestrians, to the aesthetic relations established between profiled advertising (see below) and its consumers. In constant transformation by interventions in the environment, the intelligent city can also expand its capacity of inclusion. According to some studies, the wide availability and accessibility of sensors and internet connections

[8] As an example of private spaces that interfere in the balance of the public areas, we can see the internal shopping windows of stores, that in many cases are not regulated by the public power. Often we find lights, signs and electronic panels placed inside commercial establishments, with their messages aimed at the public. Since they do not integrate the façade of the building, they are, in most Brazilian cities, in the margin of any regulation that municipalities may have on the format and size of the advertising media. They do not fail to interfere in the landscape of the places where they are positioned and in some cities they have become violations of the legislation (Alfaya 2018).

[9] 'There are strong divergences from the IoT concept, so there is no single concept that can be considered peaceful or unanimous. In general, it can be understood as an environment of physical objects interconnected with the Internet through small embedded sensors, creating a ubiquitous computing ecosystem, aimed at facilitating people's daily lives, introducing functional solutions in the processes of day by day. What all IoT definitions have in common is that they focus on how computers, sensors, and objects interact with one another and process information / data in a context of hyperconnectivity' (Magrani 2018, 20).

increasingly incorporate people and objects into the logic of data production and processing (MIT Technology Review Insights 2016).

For example, visually impaired people can benefit from the freedom provided by autonomous cars. Pedestrian presence sensors can increase the red traffic light time for vehicles, making it easier to cross the streets according to the needs of each person. Kiosks and interactive maps of information can help tourists navigate a city whose native language they do not master. Non-monetary means of payment, and even without the need for physical insertion of cards (contactless), can increase the security of transactions, corroborate the formal regularization of money circulation, avoid fraud and facilitate the automatic exchange of different currencies.

Another important example of intelligent advertising profiling was a Spanish campaign developed for children against child violence, which was seen only by viewers under 1.35 meters (due to the angle of view of the advertising totems). While the children observed an image that referred to forms of denunciation against the aggressors, their companions, because they were taller, saw other content (Chaves 2018). This was a clever way of directing different messages that one would like to convey, since often the children are accompanied by the aggressors themselves, but in a discreet way and in the same space, for different viewers.

5. Personalization and Advertisement Profiling in Supposingly Depersonalized Environments

Recent developments in the topic of privacy and data protection can be seen in the most different legislative domains (national and international), as well as through other strategies: *ex ante* regulation,[10] privacy by design[11] by tech companies, as well as an increase of awareness by organized civil society.[12] Just as the General Data Protection Regulation (GDPR)[13] came into force in

[10] It would be the prior setting of minimum standards of protection in the collection, processing and disposal of personal data, both by the public sector and by the private sector. It guides companies and governments as to the limits of data processing of users of the most diverse digital services.

[11] Having professionals specially designated to observe aspects related to users' privacy from the design of prototypical technological projects can avoid subsequent operational failures with violations of this fundamental right due to structural conformations of the final products (Maher 2018).

[12] Several recent initiatives can be cited in Brazil and Latin America: Chupadados; Lavits; Coalizão Direitos na Rede; etc.

[13] GDPR establishes rules regarding the processing of personal data by internet application providers, positive user rights with respect to their data, including the need for express prior consent for them to be subjected to third party processing, as well as the right to immediate deindexation as requested by the individual. It also determines fines for their noncompliance.

May 2018, in the European Union, Brazil also approved its data protection law ('Lei Geral de Proteção de Dados').[14] The concomitance of these two laws reveals the relevance of the subject in contemporary times, especially since the European Union has implemented a *de facto* minimum standard of protection required of companies that act not only in their territory, but also those dealing with data of European citizens, regardless of their location. That is, in order to maintain and deepen relations with one of the largest digital markets in the world (the European) several countries are adapting to these parameters.

It is important to highlight that the concept of privacy must be contextualized according to its contrapositions. Rather than thinking of a static concept of the term, such as that imagined by Samuel Warren and Louis Brandeis in their seminal article *The Right to Privacy* (Warren and Brandeis 1890, 193-220), it is necessary to reflect on the appropriateness of a dynamic privacy in the face of pervasive technologies' innovations and the increasing vigilantism of the States. According to Daniel Solove:

> Since privacy is a pluralistic concept, its value should be understood pluralistically as well. Privacy does not have a uniform value. Its value varies across different contexts depending upon which form of privacy is involved and what range of activities are imperiled by a particular problem. [...] Privacy, in short, involves a cluster of protections against a group of different but related problems. These problems impede valuable activities that society wants to protect, and therefore society devises ways to address these problems. By creating these protections, society opens up a particular realm of freedom we call "privacy" (Solove 2008, 173-174).

In a model of smart cities, where technologies mediate people's relationship with the urban space, privacy and protection of personal data should also be a constant concern. Technology, which apparently depersonalize relationships, shapes behaviors, and diminishes social interactions, actually also has the potential of individualizing these intermediations, especially in a big data context:

> The vast amounts of data gathered this way are initially not very useful given their massive volume. This is referred to as big data. Algorithms are needed to transform mass data into informative data. Algorithms process piles of data and convert them into information. Based on the data that are continuously collected, past or present processes can be depicted, patterns identified, and future processes predicted. Patterns provide informative data, or smart data (Etezadzadeh 2016, 44).

[14] Brazilian Law n. 13.709, of August 2018.

With regard to the profiling of users for advertising purposes, for example, it is already possible to draw fairly accurate representations of individuals depending on the places they attend, the pages they access, the purchases they make and the social (digital) circles in which they are inserted. Through a policy of geolocation tracking and cookie collection, this data is aggregated during the time we spend online and underpin the ideal choice of target audience for commercials to which we are subject on platforms such as Facebook, Twitter, Instagram and Google. In addition, this data generates extremely accurate metrics regarding page stay time, bounce rates, browsing flow, and other information about the success or failure of certain initiatives:

> This will result in a parallelization of the real and virtual worlds, or a dynamic real-time image of the world. Self-optimizing and self-learning systems will integrate the data collected and start to identify patterns based on the large amount of data available, i.e., they will begin to understand their meaning. Humans as a source of error (e.g., in entering data) and analog process disruptions will progressively be eliminated. Systems will give recommendations for complex actions based on automatically optimized algorithms once developed by humans. They will process information in new forms, from new perspectives, and in new contexts, which means that future search engines will be able to answer highly complex questions autonomously, for example (Etezadzadeh 2016, 41).

Why would not this same technology be used for advertising in *offline* environments? In fact, it already is. In the subway of the city of São Paulo, for example, the use of interactive digital doors with facial recognition (Yuge 2018) is being studied and implemented at the Luz, Pinheiros and Paulista (Line 4 - Yellow) Stations. The idea is that presence and facial verification sensors identify number of people, visual contact with displayed ads, gender, type of reaction (joy, anger, neutrality, etc.), among others. That way, the same strategies of advertisement profiling previously restricted to the pages of the social networks and screens of the cellular phones, in a true materialization of the algorithmic intelligence in the streets (and subway stations) of the city are adopted.

The doubts about the use of this data immediately appear. How will they be stored and used? Will there be sharing of images with public security agencies, for example, that are looking for suspects? In the case of technologies used by companies participating in public-private partnerships, it will be possible to use these metrics between companies belonging to the same economic group, for example, also to check the routes of consumers' movement around the city (in order to verify residence and location and, consequently, to draw predictions of purchasing power)? What are the possibilities of integration

between the private initiative and the governmental administration of a profiling system?

All these issues, in addition to concerns about citizen privacy, also reveal profound transformations of their experience in the public arena. If the occurrence of experiencing the landscape is always mediated by the environment around it, the urban nature increasingly modified by technological mediations imposes on the subject aesthetic and sensorial experiences eminently directed, and increasingly individualized, by those who create them (or allow their implementation). Like the São Paulo subway example, if the technology of intervention in the city is delegated to commercial advertisements profiled by the most varied entities, the subjection of those who experience the city becomes, also, an individualized spectator-consumer. This experience potential to conform what is public in the urban space also happens to be modulated according to gender, race, age group, purchasing power, etc.

In this sense, precautions with minimum parameters of privacy and protection of individuality also serve to maintain essentially public experiences in the urban space. The advertising individuation envisioned by smart cities, whose embryos can also be located on billboards and ads strategically located in certain neighborhoods, magazines and newspapers, has the capacity to alter the ways of perception of the urban landscape and to condition the human experience in those places.

In turn, this technological advancement of advertising can serve not only to boost products but also individuals and groups to attend or not certain places. Profiling can be, to a certain extent, the creator of a social segmentation capable of encouraging or constraining certain groups of people to interact with the environment that surrounds them when they are not the target audience for advertising. From this idea, it would not be impracticable to think of whole regions where advertising is directed towards a group of people of a certain social class and presents itself positively while exposing a subtle (or subliminal) pattern message in order to create mental barriers to other social groups. It also represents a change in the forms of recognition of the person in society; from differentiation criteria - which in turn can generate discrimination processes - it directs towards an impersonal and biotechnical recognition of human beings, emptying the political force of existence and opposition in the collective space (Leite 2018, 266).

In an integrative perspective, it would be fundamental to create public regulation capable of preventing the incompatibility of public spaces from what should be its main characteristic: openness to all citizens. However, the reality of municipal administrations and their legislation aimed at the protection of the urban landscape is based, to a great extent, on limitations of

land and airspace use by advertising, in a model of regulation of marketing media, often by interdiction,[15] and that disregard the content of the messages or the target audience to be reached. These regulations should establish criteria for the use of public space by advertising, which may reflect not only private interest, but also be consistent with the maintenance of urban fabric´s complexity and heterogeneity.

6. Intelligent Marginalization: Gentrification and Geolocalized Concentration of Digital Benefits

What we understand by intelligence in urban organization can also mean, depending on how it is implemented and the interests of who it serves, efficiency in the development of processes of gentrification and concentration of the benefits that initially justify it. If 'smartization' of things implies using the latest technology to provide services in the urban context, it is also possible that this application of resources, directly and indirectly, is skewed, as are so many others today.[16]

In his studies on Brazilian and Latin American economic formation, Celso Furtado emphasizes the processes of unequal accumulation of wealth that gave rise to what he determines as 'underdevelopment', thus providing explanations about the origins of asymmetric structures that seek to eliminate through induction to the development. According to the author, it would be incongruous for underdeveloped countries and regions to seek to develop through productive techniques that are inadequate to their cultural and geographical realities. This import of productive techniques and methods, to the detriment of the valorization of nature, creativity and local ingenuity, would have the power to perpetuate relations of dependence with countries that produce technology, in addition to increasing the development gap between these regions (Cunha and Britto 2012, 11).

[15] 'Most probably, the Clean City Law, n, 14,223/2006 of the municipality of SP, is the municipal legislation best known in terms of reach and limitation of the use of public spaces by means of publicity and propaganda in Brazil. It prohibits billboard advertising and regulates the size of signs and signs of commercial establishments. It proposes to order the landscape of São Paulo but is very limited in its scope. The current administration of the São Paulo City Hall invited the author of the law to elaborate what may become the landscape plan, and which, it seems, will also focus on the economic counterparts of use of space by advertising' (Ferraz 2017).

[16] Due to that and other reasons, some authors argue that: 'The main issues impeding this transformation are a focus on technology instead of on service provision, a short term and unclear vision of the future, a lack of political leadership and coordination, the absence of social and economic diversity among stakeholders engaged in creating the urban social change, and the lack of a clear plan' (Letaifa 2015, 4).

The same process can be observed in recent phenomena of technological assumption by developing countries and regions. In general, they are phenomena that involve the importation of technologies, require the licensing of software and demand the technical training of specialized personnel. In addition, the application of new technologies, or technological infrastructure, either as a public policy or as a commercial strategy of the private sector, is not immediately disseminated. They are punctual incorporations, in strategic places and markets. This would be a reproduction of international asymmetries of development also in the internal sphere, between the coast and the hinterland, between Southeast and Northeast, between capital and countryside, between center and suburbs, and so on (Furtado 2008, 109-110).

According to Furtado, a 'cultural creativity' would be necessary to overcome the social, political and economic imposition of capitalism in the contemporary world. This is one of the means to innovate, be it in the scope of intellectual property, productive structures and even social activities. Without taking cultural aspects into account and the heterogeneity of peoples, society conforms to the old reproductive structures of an 'urban marginality' and an 'economic authoritarianism' capable of 'blocking the social processes in which this creativity is nourished, frustrating true development' (Furtado 2008, 109-110). In this impositive context, power relations between agents are asymmetric, competition is not perfect, and classical economic theories would be insufficient to explain the setbacks to the development of non-industrialized regions, or that have low rates of industrialization. Given that economic progress and the commercial integration of peoples are not homogeneous, regional development requires different implementation strategies, depending on these local characteristics.

Just as economic and technological dissemination does not take place in a homogeneous way by society (international or national), smart cities also have the potential to aggravate marginalization and focus some of the benefits of this *offline* space digitalization. Even China experiences this parallel today: one of the highest levels of income inequality in the world,[17] yet easy access to cutting-edge technologies as one of the major exporters (and creators) in the industry (Bloomberg Businessweek 2018). While half of the country is still rural, poor and disconnected from the networks, the other half concentrates national and foreign investments, produces technological

[17] Despite having more than 730 million inhabitants connected, almost half the country (53%) still lives in a 'digital shadow'. In addition, the Gini index, which measures the levels of inequality, is 0.46 (Millward 2017).

innovation in the most varied sectors,[18] is hyperconnected[19] and establishes some of the main international trends in the *tech* market. According to a Thomson Reuters report (Yee 2011), China became the world's biggest patent filer in 2011, surpassing the traditional US and Japanese markets.[20]

This unequal distribution of informational capital, especially through heterogeneous technological dissemination, also has its effects online. Named a 'digital divide', this consequent heterogeneity results from a double principle of development: the lack of productive and technological capital alone requires less training and the use of informational intelligence in its daily life. In addition to that, today's disconnection also leads to preterity in the market choices of those seeking to invest (income, educational, racial, gender, among others).[21]

In these contexts of disconnection, in the absence of strategically directed technological development policies, the reasons for which the disconnection itself exists are reproduced and deepened, thus corroborating the formation of new pockets of marginalization.

> The concept of a digital divide has helped focus public attention on a critical social issue: the extent to which the diffusion of ICT fosters stratification and marginalization or development and equality. With

[18] 'From creativity to innovation, you have to climb several steps, some of which are too high for many countries. Lack of access to new technologies, technological illiteracy and illiteracy tout court, lack of respect for contracts, lack of a concerted governance between public, private and civil society, lack of a system of protection of intellectual property rights in a revised way, impermeability of a policy and restrictions on the free flow of information, ideas and expressions are some of the obstacles to the full realization of the creative economy' (Reis 2012, 219).

[19] 'The term hyperconnectivity was first coined to describe the state of availability of individuals to communicate at any time and has important developments. We can cite some: the state in which people are connected at all times (always-on); the possibility of being readily accessible; the wealth of information; interactivity; the uninterrupted storage of data (always recording). The term hyper-connectivity today is linked to communications between individuals (person-to-person, P2P), individuals and machine (to-machine, H2M) and between machines (machine-to-machine, M2M), of different means of communication. There is, in this context, a continuous flow of information and massive data production' (Magrani 2018, 21).

[20] According to the same report, there were 314,000 patent applications filed in 2010. Still, it is important to note that the number of patents granted to Chinese applicants is still lower than the figures for Japan and the United States. In addition, most of the applications relate to utility model patents, which generally denotes a less innovative degree of Chinese patents. YEE, L. C. China tops U.S, Japan to become top patent filer (Yee 2011).

[21] The digital divide is currently mainly income and education, not race or gender. This fits with the notion that the Internet has become an extension of everyday life and is useful according to one's interests and social location. The fact that there is a digital divide based on income rather than race does not mean that the problem does not have a racial component. Of course, there are large income inequalities between racial differences. Aspects of low-income cultures may deter people from adopting technology (Katz and Rice 2002, 323).

> the world's attention focused on this problem, it is now the time to put forward a more refined conceptual framework to the problem and a more informed policy and research agenda (Warschauer 2003, 210).

As described in the previous item, there are several benefits of accessibility, for example, arising from the use of technologies in the cities' landscape. However, an equally unequal application of these technologies has the potential to maintain or deepen the perceived inequalities we face in urban planning. While the intentionality of the production of places can give them values of inclusion, innovation, sustainability and progress, it is also possible that scarcity, segregation and marginalization are the focus of the 'smartization' of 21st century cities (Harvey 2014, 67-74; Arantes 2014, 120-132; Miles 2012, 09-30).

> The hardening of the city parallels the expansion of intentionality in the production of places, attributing specific and more precise values to the pre-established uses. These places, which convey value to the activities that are located there, give rise to a new modality of creation of scarcity, and to a new segregation. This is the end result of the combined exercise of science and technology and capital and power in the reproduction of the city (Santos 2014, 251).

Smart cities require enabling or transformative technologies for their institutionalization. However, this dimension must follow strategic and democratic plans with regard to intentional transformation choices of the city. Technology improves quality of life, but technology should not be a goal in itself. On the contrary, its use as a tool for progress and evolution of the concepts of the city needs to be weighed through social, economic-developmental and accessibility factors.

Conclusion

In one of the most beautiful scenes of *Blade Runner 2049*, perhaps in an exercise in futurology even greater compared to the first film, director Denis Villeneuve chooses to portray K, the android played by Ryan Gosling, in a moment of reflection. Alone, K walks on a rooftop in front of a neon billboard in a rainy Los Angeles when, after looking at it, the character portrayed in the ad comes close and says: *you seem lonely*. In the background, there is a sign that flashes the words: *everything you want to hear; everything you want to see*.

In this dystopian landscape, the dialogue between machines is symptomatic and a subterfuge of the technology-centered script to reflect the protagonist's feeling. It is the height of the subjective individualization

in which the android, having always lived in the certainty of its condition, begins to question its own existence, in the hope of being also human. His only possibility of redemption is alterity.

This should also be the central objective of any technological and informational system to be implemented in smart cities. In order for the space produced in the city to continue to converge on individual perceptions and expectations, it is necessary to trace the innovations model in the search for high efficiency in resource use and cost reduction in combination with the maximum intelligence, reliability and integrability of the programs. implemented.

A city that intends to overcome the adversities of urbanization in an smart way must not only ensure environmental quality with the rational use of natural resources. It is necessary to establish models of optimization of public services, but also a system of education for technology that presents digital and emancipatory inspiration. Therefore, platforms can combine into instruments of inclusion and accessibility, as well as protection of minority and vulnerable groups.

The model also needs to be *lean*, emphasizing the creation of governance programs that allow accountability and transparency, as well as invite the population to the discussion about the use and utility of collected data to ensure plural engagement of the adopted system and of services and spaces produced. The democratization of use presents itself as a way to overcome disbelief in the transformative potential of these programs, allowing even the overcoming of some territorial disparities. Simplicity and trustworthiness are imperative to overcome the difficulties and challenges of underdevelopment.

The *integration* of cultural and identity references in the urban landscape aims to overcome any fragmentation reminiscent of previously developed models by allowing a holistic understanding of the physical and social composition of the city. Although it allows the individualization of technological intermediations, the landscape paradigm contend with the processes of spatial marginalization by promoting the incorporation of multiple elements into a heterogeneous whole, thus valuing plurality.

The technology furtherance through a development plan that is not purposefully modeled to encourage cultural, environmental and social capacities will make cities, too, need to question their very existence. After all, meeting the most notorious requirements of forming an intelligent city - such as the development of a broadband network that enables digital applications as well as the enrichment of physical space and urban furniture with digital systems - will not be effective for the reproduction of urban life if it is not aimed at building a strategy that encompasses the achievement of all individuals.

It is in this sense that the integrative view of the urban landscape can provide subsidies for the constitution of an urban value system, serving as paradigmatic framework for the data to be assimilated in the production and reproduction of the development models adopted. Its integrative character allows the combination of several elements in a polysemic movement, capable of strengthening innovation in territorial and regional practices.

It is up to the intelligent cities of the future to answer whether they will also have the capacity to be all that we want to hear and see. Will individuals have the same opportunities to occupy and experience space without lacking a sense of humanity to ground their own existence?

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