SPATIAL JUSTICE AND THE DIGITAL CITY: SPACE AS AN OPERATIONAL MEDIUM IN BRAZIL[1]

JUSTIÇA ESPACIAL E CIDADE DIGITAL: ESPAÇO COMO MEIO OPERACIONAL NO BRASIL

JUSTICIA ESPACIAL Y CIUDAD DIGITAL: ESPACIO COMO MEDIO OPERACIONAL EN BRASIL

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Abstract

The intention is to present a comparative picture of the insertion of information and communication technologies in the national territory, on different scales (macro-regional, provincial and intra-urban), thinking of space as an operational medium and taking the notions of spatial justice and accessibility as the guiding principles of the proposed reflection. The discussion is also based on the assumption that places are "platforms" for the construction of actions and speeches of an eminently space matrix that goes through varied scales and cuttings.
Keywords: Spatial justice, digital city, Space, operational medium, place.

Resumo

Busca-se, com o presente artigo, construir uma abordagem comparativa da inserção de tecnologias de informação e comunicação no território nacional, em diferentes escalas (macrorregional, estadual e intra-urbana), pensando o espaço como "meio operacional" e tomando as noções de justiça espacial e acessibilidade como princípios norteadores da reflexão proposta. A discussão está também baseada na assertiva de que os lugares são "plataformas" para a construção de ações e discursos de cunho eminentemente espacial que atravessam variados recortes e escalas.
Palavras-chave: Justiça espacial, cidade digital, espaço, meio operacional.

Resumen

Con el presente artículo se busca construir un enfoque comparativo de la inserción de tecnologías de información y comunicación en el territorio nacional, en diferentes escalas (macrorregional, estatal e intraurbana), pensando el espacio como "medio operacional" y tomando nociones de justicia espacial y accesibilidad como principios norteadores de la reflexión propuesta. La discusión también se basa en la asertiva de que los lugares son "plataformas" para la construcción de acciones y discursos de carácter eminentemente espacial que atraviesan diversos recortes y escalas.
Palabras clave: Justicia espacial, ciudad digital, espacio, medio operacional.

Introduction - Places as "operational mediums"

The heterogeneity of the diffusion of techniques and technical objects results from the unequal way in which they are inserted in time and space - in history and in territory. For Milton Santos (1996), techniques

and technical objects must always be analyzed in conjunction with their surroundings, since the preexisting space will incorporate them in a particular way into their respective places of occurrence.

Thus, from a geographical perspective, techniques and technical objects would be redefined by space, which would include them in a "coherent set" through spatial contiguity, also requiring joint and collective actions for its operation. A geographical focus of techniques will therefore presuppose a reflection on how technical objects are contextualized in a given place and how human actions are performed in this substrate (Santos, 1996).

In the context of the current process of globalization Milton Santos emphasizes that the desired homogenization of space by large organizations and proceeding from "blindly used" technology reveals itself as an impossibility, due to the reality and the spatial constraints present in the different territories (and places).

Techniques influence how we perceive space and time, not only by their physical existence, but also by the way they affect our sensations and our imaginary. On the other hand, places will relate in a differentiated manner to techniques and technical objects, according to the conditions they offer as an "operational medium", to make production, circulation, communication, leisure, etc. feasible.

However, if space is open to an objective evaluation, as an "operational medium", whilst a "perceived medium" (and here we might add, as a "conceived medium") this will require a subjective evaluation: "in reality, there are reciprocal invasions between the operational and the perceived. Both have technique as their origin and through this our evaluation ends up being a synthesis of the objective and the subjective" (Santos, 1996, 45).

Santos' proposal can be deployed to understand techniques as producers of articulation / contacts / encounter and / or isolation / segregation, something especially stimulating in the analysis of the means of communication and their social-spatial appropriation in different places in the world, as well as to explain the inequalities in the different spatial cuttings regarding the insertion and access of/to information and communication technologies.

The media differs from the more "traditional" means of communication by its greater capacity to memorize information, as well as

Artigo

how it is processed and the support needed to establish the communication process. What we call the media revolution results, above all, from the development of new techniques and new technical objects (Claval, 2003).

However, this revolution in the means of communication occurs in coexistence (peaceful or otherwise) with the more traditional means and modes. What has changed is the speed with which information is exchanged, shortening distances between places in the contemporary world and enabling the exchange of a much larger number of images, sounds and texts than in the relatively recent past.

Between 1500 and 1900, the evolution of the communication universe seemed stable and simple; with the progress of printing techniques, the success of the print press and the generalization of compulsory schooling for children, the role of written communication became increasingly important. With the advent of the gramophone, radio, photography, film, television and the computer, images and the spoken word gained strength once again (Claval, 2003). At the same time, the existence of planetary communication networks and the simultaneity of exchanges have made the old structures and hierarchies that seemed natural in the past disappear.

However, this revolution is experienced diversely in different places of the contemporary world, providing a geographical analysis of the dissemination of communication and information techniques from the processes of social-spatial appropriation of technical objects in their local / regional / national dimension.

A multiscale analysis of the tactics of appropriation of information and communication techniques, considering places as platforms for the elaboration of actions and the discourses of different groups and initiatives in the alternative and popular scenes in Salvador and Berlin, is presented in the book *Lugar e Mídia*, published by Editora Contexto in 2011. It is intended to resume herein some of the discussions presented in the book, trying to update it and seeking to reflect on the notions of spatial justice and accessto information and communication technologies on different scales and spatial cuts in the national, regional and local context.

Place and media –The enunciation of places from historical facts in working class neighborhoods of Salvador

In the book *Lugar e Mídia*, we sought to understand how places are enunciated in the daily life of the two cities analyzed, highlighting the role of communication in the elaboration of multiscale spatial representations that open these groups and initiatives to the world. For these groups and initiatives, it is a matter of enabling a mediation space, a renewed urban public sphere governed by a new ethic capable of guiding both action and discourse simultaneously and produce/ enunciate a "place."

This (new) ethic is based on tactical principles and often subverts the strategies of hegemonic groups through use and action, as emphasized by Michel de Certeau (1994), in the processes of production of space. In the absence of a place, of "one's own", these groups and initiatives enunciate the "place" through calculated - tactical actions.

The relationship between place and media presupposes articulation and meeting in processes led by groups and initiatives in the contemporary city, in specific moments and spaces. Spaces-time of representation and communication that will mediate processes of social-spatial appropriation of technique and its "translation" into technology.

We start from the assumption that techniques influence how we perceive space and time, not only by their physical existence, but also by the way they affect our sensations and our imaginary. On the other hand, as mentioned in the introduction, places will relate in a differentiated manner to techniques and technical objects, according to the conditions they offer as "operational mediums", to make production, circulation, communication, leisure, etc. feasible. (Compare: Santos, 1996).

These are relationships of immediate proximity, actions that are solidarity and "community" based, "grassroots" and / or "alternative", depending on the context. These relationships are conditioned by differentiated communication and representation tactics and, at the same time, they condition the performance of groups and initiatives in different urban places, revealing the latter as bases for the installation / consolidation of an "operational means" for action and speech.

The analyzes presented in the aforementioned book (Serpa, 2011) also show that the relationships between place and the media will be determined in some way by the density of this operational environment in each specific place, as well as by the accessibility to this medium by groups

Artigo

and initiatives that tactically appropriate these "resources". With quite different levels in terms of density and accessibility, Salvador and Berlin both show themselves as metropolitan agglomerations capable of offering spatial gaps or "places of the possible", according to Lefebvre (1991), for the creative use of technique and its transmutation into "appropriate" technology, given new meaning by "popular" and / or "alternative" use.

One can affirm that by appropriating the means of communication, enunciating "places", in the terms of Michel de Certeau (1994), these groups and initiatives exercise, at the same time, the arts of doing and speaking, giving new meaning to the places where they act and make effective, in the daily life of these areas, tactics of use and appropriation, which reveal themselves through specific social-spatial practices. It is observed that places are enunciated from historical-social elements present in the areas of activity, from a "creative realization of the linguistic system", recounting the history of the cities from a different perspective.

Groups that produce content for public utility sites in the neighborhoods of Salvador will appropriate, according to determined tactics and interests, the history of the places of performance, producing content for the Internet which, to a certain extent, reveals a certain congruence with the city's history of urban development. The contrast between the Cidade Baixa and the Cidade Alta, for example, refers to the beginnings of urban occupation in the capital of Bahia.

If, in the sixteenth century, Salvador was still a group of low and modest houses, "even though [at that time it already] flaunted the title of city", in the eighteenth century it effectively became an "imposing, seigniorial city", as described by Antonio Risério in *Uma história da cidade da Bahia*" (2004). Seen from afar, from the ships docking in the mercantile city, the two-tiered urban arrangement caused ecstasy in foreign visitors, but this was replaced "by disappointing shock," as soon as they landed in the Cidade Baixa, where they collided with the "scum of the Beach road" "a scene that"disgusted"and"horrified"newcomers, as described by Risério (2004: 295-296).

It is evident from Riserio's work that there is a marked and extreme contrast between the high and low cities in nineteenth century Salvador. This contrast is evidenced by the clear stratification of the two cities, the Cidade Baixa as a place of small and large commerce, an unhealthy and foul-smelling city, a black city and a slave city, with warehouses, harbor

and emporium, and the Cidade Alta as a quiet and well-decorated place, a bright and ample, postcard-town, white and seignorial (Augel Apud Risério, 2004).

This contrast, disguised in the following centuries in a kind of "spatial stigma", is one of the arguments for the creation of the siteCityBaixa.com, which has the slogan" The Cidade Baixa connected with the world". At the time of our research, the sitealso intended to make the Cidade Baixa better known in the rest of the city, extolling its history and its tourist attractions. It was not for naught that they had the support of Bahiatursa, the state agency for tourism promotion. At the link"History", the siteenunciated the place using elements found in official historical sources.

It was observed, however, that there was no mention of the stratification of Salvador into two cities, in the terms previously put by Risério, clearly denoting the intention to circumvent the spatial stigma, omitting anything from the history told on the site that could compromise the tactics of enunciation of a place with great tourist potential, supposedly unknown to the rest of the city. In previous searches by the group Grupo Espaço Livre de Pesquisa-Ação run by the author at UFBA, carried out in the Ribeira neighborhood, located in the Itapagipe peninsula, in the Cidade Baixa, it was found that some older residents extended their boundaries to the Largo de Roma, practically including the whole Itapagipe peninsula in the Ribeira neighborhood. Among those who participated in neighborhood associations, there was a tendency not to recognize the Ribeira's boundaries immediately, affirming the district of Itapagipe as a "neighborhood". There is a strategy to add value to tourism encompassing the monuments and attractions of neighboring districts such as Bonfim and Monte Serrat (Serpa, 2007).

It is true that in other districts of the city, where we analyzed the tactics of social-spatial appropriation of the means of communication by working class groups, the distinction between neighborhood and administrative region was not always clear. In Salvador, older neighborhoods such as Liberdade and Boca do Rio differentiated themselves over time, giving rise to new neighborhoods such as Curuzu (in the first case), and Stiep and Costa Azul (in the latter). Today, they are the names of administrative regions (which coincide with the original neighborhoods), but the boundaries of the region no longer coincide with the boundaries of the current neighborhood.

Artigo

On the other hand, this does not constitute a rule for all the neighborhoods analyzed. In Piraja, a popular centennial neighborhood in the state capital, it was not the administrative region as a set of neighborhoods that supported the action and discourse of the content producers for the Portal Piraja (portalpiraja.org). In this case it was the neighborhood's history that counted, because it was the scene of the struggles for Bahia's independence, something underlined both in the texts made available on the siteand in the interview with its organizer. That is, at the time of our research, on the public utility sitesanalyzed, the spaces of representation oscillated between neighborhood and district, sometimes emphasizing one, sometimes emphasizing the other, which says much about the procedural character of urban places, enunciated and represented from differentiated communication tactics.

Technology and Place - the context at the end of the first decade of the twenty-first century in Brazil and Germany

Universal access to low cost Internet still seems to be a faraway dream in Brazil, where the proportion of households with computers did not surpass the mark of 36% in 2009 (ICT Household[2]). In the Northeast, this percentage was even lower, not exceeding 18% (compared to the Southeast region, with 45%, and the Southern region, with 43%, data from 2009). If we considered only those computers with Internet access, these numbers fell, respectively, to 27 (Brazil) and 13% (Northeast), respectively (2009 data).

At the end of the first decade of the 2000s, the Internet access point indicated that LAN centers (LA houses) surpassed households in the lowest income brackets: 72% up to one MS; 60% between 1 and 2 MS; 44% between 2 and 3 MS versus 38% between 3 and 5 MS; 27% between 5 and 10 MS and 16% with 10 MS or more (ICT Households, data from 2009). Regardless of income range, 30% of Brazilians accessed the Internet at home and 54% in LANhouses.

In Bahia, Internet access rose from 2003 to 2009, according to the National Survey of Households Sample (PNAD), released in September 2009 by the IBGE: 17.1% of households in the State owned computers with an internet connection. In 2003, this rate was four times lower, only 4.67%. In Salvador, 33.4% of the properties had access to the worldwide web in 2009; in 2003 the percentage was 11.7%.

In Germany, access to information and communication technologies is more universalized and the discussion takes place on other bases. Such as in Berlin, where 73.3% of households had a computer with Internet access in 2009; at the time the municipal administration wanted to open bidding to install a wireless network that would cover all public spaces in the city.

At the time of our research in the city, Berlin was experiencing an era of the universalization of the WLAN network(Wireless), something still unimaginable in the current Brazilian context. The idea was to install routers and antennas at traffic lights, lamp posts and on the roofs of public buildings, which was causing controversy, regarding the visual impact and the possibility of traffic problems, due to possible failures of synchronization of the traffic lights. But this was not the only cause of dissatisfaction in Berlin. Many would like the infrastructure to be public and not exploited by private enterprise.

In Berlin, a wireless network in the hands of users has been a reality in the city since 2002: the Freifunk (Free Radio) initiative, which brought together many supporters, mainly on the eastern side of the city, in districts such as Friedrichshain, Mitte and Prenzlauer Berg. Shortly after the fall of the Wall, the German communications company Telekom installed fiber optic cables in these districts, at the time the most modern technology for fast Internet access. With the advent of wireless Internet, these cables proved to be inappropriate, since installing a WLAN infrastructure required copper cables: this gave rise to the Freifunk network, a result of the organization of the inhabitants, who over the years have been able to install an (impressive) decentralized WLAN structure at a very low cost and without the need to connect to a central provider.

The Freifunk network deconstructs the idea that technology separates and isolates people in modern-day metropolitan areas because it demands organizational strategies from its users based on meeting and the co-presence between neighbors, strengthening social networks in the districts where it is inserted.

In order to connect to the Freifunk network, the new user only needed a reconfigured router, a computer, and someone in the vicinity who was already in the network. Users shared free programs made available on the Freifunk platform, as well as a neighborhood infrastructure such as antennas on the roofs of buildings. In 2009 there was a weekly meeting

for beginners in the city center, when experiences and doubts were shared with the network's "veterans".

The Freifunk network was not restricted to Internet access. The exchange of files was more intense among participants than in the commercial WLAN. This did not happen by chance, as explained to us by Jürgen Neumann, one of the network's many spokespersons:

> It's much faster to download a video on your computer from a website, than sending a video that you have produced to YouTube, because from the outset, the infrastructure providers wanted to turn users into consumers who do not produce content for the network.

In other words: ADSL technology (*Asymmetric Digital Subscriber Line*) that relies on commercial WLAN determines higher speeds to download files and lower speeds to send them. In addition, in the Freifunk network, everyone had a fixed IP address (as opposed to conventional wireless Internet), which facilitated a direct connection and sharing of content among participants.

If in the German context Freifunk means an autonomous and non-hierarchical communication network, in Brazil it could represent a real possibility of access to the world-wide computer network in a creative, participative and shared way for those who in fact need this technique and cannot take on the (still high) installation costs.

The Infovia Municipal de Salvador - SSA Digital project, which aimed to give full wireless Internet coverage in the city by the 2014 World Cup should be mentioned here. The intention was to install free wireless Internet in 40 public spaces in the capital of Bahia by the end of 2010, but only four points were actually implemented (Praça Municipal, Praça João Martins, Paripe, Praça do Imbuí and Praça Regina Guimarães, on Fazenda Grande), with a cost of two hundred thousand reais to the public coffers (Vasconcelos and Anjos, Jornal A Tarde, 07/08/2010, page A4).

However, in 2010, the service was virtually unknown to most potential users. The few who knew about the project asked who would be brave enough to open a laptop and be at the mercy of thieves in a public space. In addition, the service did not require the identification of users, which, according to experts, could favor so-called "virtual" crimes (Vasconcelos and Anjos, Jornal A Tarde, 08/07/2010, page A4).

The comparison between such different social-spatial contexts, however questionable, takes up the question posed in the introduction,

that research on the relationships between media and place, between technology and place, requires an evaluation of space as an operational medium and as a perceived / conceived means, in accordance with the ideas of Milton Santos (1996). It is from the results of an investigation that one can infer the role and importance of places in the appropriation of the technique and its transformation, through use and appropriation, into technology. For Geography, it is a question of emphasizing the spatial dimension of these processes, from the performance of groups and initiatives that enunciate "places" and produce space in specific space-time contexts.

This "new technical medium" (composed of communication and information technology, by languages and equipment) plays a role that goes beyond the function of supporting human action, since it is, according to Ana Clara Torres Ribeiro, "intrinsically action":

> For this reason, its nature is strategic and virtually institutive. Along with information, this medium issues demands and orders. As a consequence, *the unraveling of other social uses of (and for) technique is one of the greatest challenges faced by those seeking projects to defend a better future* (Ribeiro, 2008, p.191, emphasis added).

Ribeiro emphasizes the need to recognize the political and social forces that will appropriate the inherited space and the potential of the technique. We also agree with her statement that there is no neutrality in technology and that "freedom does not emanate directly from technology" (*Op. Cit.*, P. 195), adding that it is in the places of action of groups and initiatives that appropriate the means of communication, that technique can allow the emergence of creative uses of an autonomous technology and, why not say, "free" in its imports and meanings.

The public utility sites in working class neighborhoods of Salvador - less access to the technique and more "local" content for the Internet

In Salvador, access to technique by producers / organizers of public utility sites operating in the working class neighborhoods of the city was much more restricted than in Berlin in 2009. Often, the discourse and action of these initiatives were clearly guided by the limits regarding the infrastructure available, as Fábio Ferreira of the Piraja Portal explained

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Artigo

419 | BGG

to us, since not everyone had a computer with Internet access in the house: "In this neighborhood, we have a room, like a LANhouse, where the site is updated. Rogério also does the updates in his house. He and I communicate a lot using MSN: I pass on the news and he does the updates. It's always an exchange of information."

Therefore, even those who updated the site might not have a computer with Internet access at home, as the example of the site Portal Pirajá shows. However, Ferreira showed some familiarity with technique, passing on various journalistic materials to his colleague Rogério: "I send stories to his e-mail. The site has an archive, which only we have access to, we send the news like this as well. From there, Rogério accesses this page and places it on the site". Ferreira also worried about the control of the number of accesses and explained the use of the tool that allowed him to infer the scope of his initiative:

> We have a page that allows us to know all the hits that the site has had and the times. We have daily control, an average of 17 people per day. This intensified after the publicizing (of the site). Since its launch, the site has averaged 1,500 hits.

The concern with the number of accesses also permeated the speech of Elton Serra, from the site CidadeBaixa.com, who, like Fábio Ferreira, showed familiarity with the system's operating tools: "We have a monthly average of seven to eight thousand hits. We get this information through the operational part of the site, which even allows us to know where the person is accessing from. The system itself reports the information." Unlike Portal Pirajá, Serra and another colleague owned a computer at home, updating the contents of CidadeBaixa.com from their residences, located in the neighborhoods of the region.

It was noticed that the groups that managed the sites in Salvador had a greater preoccupation with the production of content for the Internet, generally based on the information collected in the daily life of the districts and localities where these initiatives took place. They were also concerned with the characterization of the profile of the public to which this information and content were directed:

> The actual community that uses LAN houses or that has a computer at home accesses our website a lot. Today we are able to cover a large number of users, mainly people in the neighborhood who work with information technology. People linked to neighborhood associations

are also part of this profile. Today I am part of the union of these associations, so we allow them to publicize their events through the website (Fábio Ferreira, Portal Pirajá).

The tactics to produce content were mainly based on neighborhood activism and the work of site coordinators in their localities, also showing a duplication of roles in the daily life of the groups and initiatives analyzed in our research. In addition, the sites themselves provided mechanisms to survey content of interest to the localities ("Contact Us"), later debated and deepened in groups' periodic meetings:

> I look for content through the work I do with the associations. We do surveys using the participation in Contact Us. We have meetings here every Tuesday, because I am the leader of the 'Third Millennium', which is the union of all associations. Events and neighborhood problems regarding transport are discussed in the meetings of the associations and this becomes news, because they are important for the community (Fábio Ferreira, Portal Pirajá).

> Cajazeiras is a city on the go, when you go out on the street, it is easy to find material. Here at the Rótula da Feirinha, which is the heart of the neighborhood, we learn many things. We also have Contact Us, a section in which people contribute / send the information which turns into stories. We have meetings, in which we decide what will or will not go on the air. I think it is important to analyze the news before releasing it, to broadcast things that really interest the neighborhood (Roberto Oliveira, Cajazeiras.net).

It was observed that, among the initiatives analyzed in Salvador, there was a greater concern with the production of local contents for the public utility sites, although there were more difficulties of access to new information technologies than in Berlin. In the German capital, on the other hand, the example of the Freifunk network demonstrated a greater mastery and autonomy of the participants for the construction of a more universalized infrastructure of Internet access, with emphasis on decentralization and self-management.

This does not mean, however, that at the time of our research in Berlin there was not the production of content for the global computer network among the groups and initiatives analyzed. On the contrary, there was a much closer relationship between the different means of communication, providing a greater availability of content and a broader

Artigo

interface between the different languages - text and audiovisual - through the digital tools of the *Web 2.0*[3], as discussed in detail in the book *Lugar e Mídia* (Serpa, 2011).

Place and media, spatial justice and new perspectives

Nearly a decade after the research in Salvador and Berlin and six years since the publication of the book *Lugar e Mídia* (Serpa, 2011), new perspectives have opened to the analysis proposed here.

A useful path is precisely the notion of spatial justice, from the analysis of space not as a mere receptacle of new techniques and technologies, but as a central and fundamental instance to reveal the inequalities of access to new information and communication technologies, especially concerning the accessibility to this new technical-scientific-informational environment, under capitalist relations of production, now as never before guided by intelligence and information.

What is the digital citybeing outlined, especially in Brazil, in a glaring scenario of spatial injustice? In this context of social-spatial inequalities even more aggravated on all scales, how can it be observed in this second decade of the twenty-first century?

A simple and brief consultation of the results of the last ICT Households 2015 survey can help us in this endeavor. The diffusion of Information and Communication Technologies in the last decades in underdeveloped countries - including and with great force in Brazil - is today an unquestionable fact, which runs through different social classes. The latest ICTHousehold survey conducted in 2015 in Brazil shows, for example, some trends:

- The increase in the number of Internet users among Brazilians aged 10 years or more, as well as their frequency of use. The trend is for a progressive increase in the proportion of users accessing the Internet every day or almost every day, from 53% in 2008 to 82% in 2015.

- One of the highlights of the 2015 edition of the ICT Households survey concerns the devices used to access the Internet. While in 2014 computers (desktop, laptoporTablet) were the most used devices to access the network (80%), in 2015 the cellular telephone became the main equipment used for this activity (89%, compared to 76% in 2014).

- Internet access exclusively through cellular phones was also more frequent among users residing in the Northeast (43%), North (55%) and rural areas (56%), which reinforces the hypothesis that the cellular telephone network is an alternative to the use of the network in areas where the fixed Internet infrastructure is more precarious.

- In 2015, 35% of Internet users accessed the network only by cellular phone; in 2014 this proportion was 19%. The exclusive use of the cellular telephone occurs especially among the users from less favored social classes.

Obviously Internet access is still very unequal in Brazil, and these inequalities are manifest both in terms of the socioeconomic profile of the population and in regional / spatial terms. At this point, it should be emphasized, from the statements of Ana Fani Carlos (2011), that "geographical space reveals itself in its material dimensions – which refer to the physical dimension, time space of real life [...] concrete – [...] society producing and reproducing itself and becoming aware of its production [...] [and] abstract production – [...] the conceptual plane, in which knowledge and analysis discover new categories" (CARLOS, 2011, p. 66-67). The emphasis on material and concrete dimensions emphasizes the importance of everyday life for the understanding of the space produced and reproduced in contemporary times, while on the abstract plane, equally important, social and spatial representations are produced in a dialectical relationship to the concreteness and materiality of places, regions, territories and landscapes, mediating the relationships between society and space.

The Internet Steering Committee in Brazil, in the electronic book that disseminates the data of ICT Households 2015 (CGI.br, 2016), corroborates in the introduction of this publication, our concerns and the current nature of the discussion proposed herein:

> When it reaches its 11th year of data production on the access of information and communication technologies (ICT) in households and its use by Brazilians, the ITC Households 2015 research shows that the incorporation of mobile digital technologies for Internet access is increasing and more frequent in the daily life of Brazilians. On the one hand, this breakthrough is important and deserves to be celebrated. However, the enormous disparities between the country's regions and social classes in relation to the access and use of ICT remain in this new scenario. The greatest challenges for the country's public digital inclusion policiesare

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Artigo

423 | B G G

the universalizationof broadband access in the households of the economically disadvantaged classes and fostering the development of digital skills that enable a proficient use of the more complex functions and applications required by companies that already operate under a new logic of the digital economy. It is worth studying the barriers that prevent more Brazilians from taking advantage of the opportunities brought by new digital technologies, going beyond a purely instrumental use of ICTs (CGI.br, 2016, p. 25).

A look at the major regions of the country and the data published in ICT 2015 confirms that problems of network availability and connection speed still remain on the regional scale, evidenced when regional comparisons were made, with the states of the North and Northeast regions being in a disadvantageous position. In this context, the Central-West, South and Southeast regions presented, respectively, 40%, 28% and 22% of households with a connection speed greater than 8 Mbps, while the North and Northeast regions had 17% and 15%, respectively, of households in this condition, in the year 2014 (CGI.br, 2015 apud CGI.br, 2016. P. 56-7): "However, even in regions that are best served by Internet infrastructure and services there is inequality, both intra-regional and within the same urban area" (CGI.br)., 2016. P. 56-7).

Although in the course of the historical series of the ICT Households research the number of households with computers is increasing, that number reached 33.2 million households with access to the equipment in 2015, and even though the proportion of households with computers has doubled since 2008, jumping from 25% that year to 50% in 2015, the survey points to some stability from 2013:

> The penetration of computers in households is still unevenly distributed, especially with respect to the relative distances observed between regions and different social classes. The highest proportions of home computers are still observed in the Southeast (59%) and in the South (54%),while in the Midwest, Northeast and North regions these proportions are 44%, 38% and 30%, respectively.

> The same pattern of persistence of inequalities manifests itself between the urban and rural areas of the country. Although, since 2008, there has been a significant increase in the proportion of rural households with access to the computer, the difference in relation to urban areas still persists. By 2015, 54% of households in the urban area had at least some type of computer, more than twice the percentage relative to the rural area (25%).

Finally, with regard to socioeconomic inequalities, it is possible to note ... that the percentages of access to this equipment in classes C and DE were significantly lower than those of classes A and B: we can observe the universalization of the presence of this type of device in class A, while in the DE classes, just over 1 in 10 households had a computer.

It is also important to note that in the Southeast region - which had the highest proportion of households with computers in the country - there were a total of 11.9 million households without such devices. In the Northeast this contingent was 10.8 million households. If, on the one hand, the data reinforce the importance of public policies that minimize the country's structural inequalities, on the other, it is necessary to take into account the fact that actions located in specific segments or regions will not necessarily be effective. Complementary arrangements and policies should be adopted to overcome the dynamics of inequalities (CGI.br, 2016, p. 128).

Taking into account home access to the Internet, regional inequalities, which still persist, are also evident: among the country's regions, the North had the lowest percentage of households with Internet access (38%), unlike the Southeast, where there was the highest percentage of households connected among the Brazilian regions (60%). In 2015, the Northeast had 40% of households with access to the global computer network, while the South had a 53% share and the Center-West had 48% (CGI.br, 2016, p. 133). At the national level, in 2015, 41% of all households had access to the Internet and the computer, another 9% were connected to the network without computers. Another 8% of households had computers, but they were disconnected and another 41% had neither a computer nor Internet access (27.3 million households) (CGI.br, 2016, p. 132).

Compared with the first decade of 2000, the prospect is a decline in the use of LAN houses[4] and a change in the public user for access to the global computer network in the current decade:

Free public access centers, such as tele-centers, libraries and community organizations (14%), and paid access, such as LAN houses and Cybercafés (12%), continue to be mentioned less as places of use by Internet users. However, there was an increase in the use of free access centers from 2014 (8%) to 2015 (14%). This movement does not necessarily mean an increase in the use of the network in tele-centers. In addition to the public policies of the various spheres of government providing free Internet access in public places such

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Artigo

425 | BGG

as squares and other location, it is possible that this increase is also due to a greater availability of free WiFi connection points provided by other types of place, such as shops, in response to the growing demand for the Internet use via mobile phones (CGI.br, 2016, p. 147).

According to Junqueira (2012, s / p), since 2010, domestic access has surpassed the LANhouses. In that year, 28% of Brazilians used these establishments as one of their ways of accessing the Internet, compared to the other 67% who did so at home (ICT Households and Users 2011). This made the LAN houses' target audience change decisively in Brazil: "If formerly the centers were popular among middle-class youths, they are now a means of promoting digital inclusion in Brazil" (Junqueira, 2012, S / p).

Conclusion – Spatial justice: social rights, location and citizenship

In view of the data presented herein it can be concluded that regional and local inequalities persist in the national territory. It is also possible to affirm that access to Information and Communication Technologies has changed considerably in Brazil from 2009 to 2015, with a relative increase in accessibility provided by cellular devices. Several pieces of evidence point to these changes, such as the considerable decrease in the number of LANhouses, the main form of access of the working classes to the world-wide network of computers in the first decade of 2000.

Today, inequalities express themselves much more in the speed of access to the Internet, which can be acquired in the market using individual resources, which shows marked social and spatial inequalities with regard to ICTs. The difficulties of access on the intra-urban scale also persist, a fact still very present in the working class neighborhoods of the Brazilian metropolises. Of the three neighborhood sites analyzed in 2009 in our surveys in Salvador, for example, only one remains online and active, CidadeBaixa.com, while the Infovia Municipal de Salvador - SSA Digital project has not advanced to reach other public spaces in the city, which shows that "in the social daily life there are citizens who ... live in discrete parts of the national territories" (Castro, 2005, p.202) and that the relationship between location and citizenship must always be taken into account in analyses of spatial justice. The individual is more or less a citizen depending on where he/she is, as Milton Santos (1992) would say.

The analysis of recent trends and perspectives regarding the dissemination and access of Information and Communication Technologies in the national territory also opens the way to a better understanding of the notion of spatial justice and the role of space as a fundamental instance for the exercise of citizenship and civil, political and social rights, because, as Iná Elias de Castro reminds us,

> Being a moral issue of the organization of social life, affected by history and cut across by space, citizenship as a practice is in itself a possible mark and perspective to address the relationship between territory and society. The idea of practice necessarily refers to the set of institutions that organize, on a given territorial basis, the possibilities of exercisingcitizens' rights and duties vis-à-vis the community and vice versa (Castro, 2005: 202).

If we analyze access to this operational environment and its appropriation as a perceived / conceived social right, and considering, with Castro, that "the exercise of social rights requires an infrastructural base ... supported by public institutions", and that, in a country like Brazil, location can be a facilitator or a difficulty in the exercise of these rights"(Castro, 2005, p 204), then it is the "territorial insertion of institutions, embodied in organizations, which confers conditions of access to social rights "(Castro, 2005: 203). Geography should analyze how this operational medium is concretized and organized spatially, in a context of great social-spatial inequalities such as in Brazil, betting on a multiscale analysis of the problem and on the analytical deepening of the class dimensions involved in these processes, especially those that support the tactics of creative appropriation of the technique and its elaboration / transformation into technology.

Note

1 Opening Conference of the IGU Urban Geography Commission annual meeting, on August 7, 2017 in Salvador-Bahia (https://www.unil.ch/igu-urban/home/menuinst/urban-commission-meetings/2017-salvador-de-bahia.html).

2 Available at: <http://www.cetic.br/usuarios/tic/2009/tic-domicilios-2009.pdf>. Acessed on: 14 Dec. 2017.

3 "Web 2.0 is a term created in 2004 by the American company O'Reilly Media to designate a second generation of communities and services, having as a concept the 'Web as a platform', involving Wikis, applications based on Folksonomy, social networks

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Artigo

427 | BGG

and Information Technology. Although the term has a connotation of a new version of the Web, it does not refer to the update in its technical specifications, but to a change in the way it is perceived by users and developers, that is, the interaction environment that now encompasses numerous languages and motivations" (Source: Wikipedia).

4 It is difficult to measure the exact quantity of LAN-houses available in Brazil. Federal government figures estimate that there are between 18 and 20 thousand registered houses. However, some people speculate that up to 90% of them are in the informal sector. ICL Lan-Houses 2010 points out that two years ago there were more than 100 thousand establishments spread across Brazil, between formal and informal, with greater concentration especially in the North, Northeast and in low-income pockets. These establishments are small and have a family-based profile. In 2010, 97% of LAN houses had up to three employees and 70% up to ten computers (JUNQUEIRA, 2012). Available at: <https://olhardigital.uol.com.br/noticia/lan-houses-as-casas-de-jogos-se-tornaram-centros-de-inclusao-digital/28528>. Accessed on: 28 May 2017.

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