

Environmental Justice and Landscape: Urban Rivers in Question

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ABSTRACT: The overall objective that guides this paper is clarifying the strategic relevance of landscape integration for environmental management that takes into consideration the territorial justice as its ethical-political horizon. In this sense, we address the tension between limits and potentialities of renaturalisation of rivers in the urban context. To do so, we specify the environmental justice as the clipping theoretical and methodological framework guide of our approach. It is proposed the urgency of impact studies and landscape integration in its condition as a strategic resource for the management of the landscape. From this standpoint, the river basin shall constitute visual basins, as set of points each other visible, having in perspective the premise that the observer is part of the system of observation. Through the landscape integration strategy, tactically specified as (re)naturalization of rivers, we can identify focal points of observation - called doors - which work as landscaped connectors essential to public ownership of the river/visual basin. The empirical case analyzed is the Jacaré river basin, connected to the lagoon system of Piratininga, located in the city of Niterói, state of Rio de Janeiro. It is a basin extremely varied from the point of view of both the impact on the landscape, historically accumulated, how much of the impasses in the territorial justice/environmental. We are dealing with a critical urban neighborhood, using the criterion of impacts and the environment it presents. Thus, restore values of the culture of the landscape leading to complement the overall goal pointed out, from the analysis of the testimonies of local residents, based on river etnogeomorphology.

Keywords *Landscape management, environmental justice, renaturalisation of urban rivers, river etnogeomorphology*

PRESENTATION

"The landscape matrix has a decisive weight in the ecological functioning of the territory and the quality of the same. By definition, the matrix usually represents the largest part of the territory"

RODÁ, Ferran (2003:51)

In this paper, the overall objective is to discuss the environmental justice from the perspective of the urban landscape management. For this, we appeal to the landscape integration strategy as a theoretical and methodological mediator that allows us to evaluate the relevance of the tactic of renaturalisation of urban rivers. We consider this strategy as a resource key for systemic treatment of both the environmental justice and landscape management. In other words, we want to be kept in perspective of the operational strategy of renaturalisation of rivers, by re-enrolling for the marks of a complex thought which seeks to distinguish relevant aspects of reality without isolating each other. Thus, we refer us for a thought that light the following links of these aspects, making therefore the notion of system as main fulcrum.

The structure of this paper follows the sequence that triggered by this presentation, includes a first section which clarifies the relevant theoretical and conceptual dialogue between environmental justice and territorial justice. In the second section, we discuss the landscape management linking it to specification of social right that this type of management must promote and effect. In the third section, we discuss the renaturalisation of rivers as legitimate intervention in urban space, as well as the landscape integration strategy. Finally, the fourth section presents an analysis of vernacular geographies that follows the use of etnogeomorphological perception of residents and entered in an emancipative political matrix.

1. THEORETICAL LANDMARKS ON TERRITORIAL JUSTICE

In the subsequent paragraphs we will resume in expanded form our notes (Lima & Castro, 2013) that are still quite valid. The idea is to register all debate on environmental justice refers, without doubt, the most comprehensive notion of justice. It is because we consider the environmental dimension as one of the territory dimensions, to avoid a metonymical trap of taking the part by the whole, and the structuralist trap to distinguish elements or attributes by mere isolation from each other.

Among geographers, according to Jacques Lévy, the "association between justice and space is a recent idea. It assumes, on the other hand, that the space offers content to define what's fair, and on the other hand, the space action capabilities allow a fair negotiation approach "(2003:531). In fact, such weighting enters the domain of more comprehensive relationship that binds geography and ethics. Thus, expressions such as spatial justice, environmental justice and territorial justice clarify the role of values such as solidarity, respect and responsibility, for example, in the process of social production of space. For Lee (2000:342), territorial justice corresponds to the "application of the principles of social justice to territorial units. As such can be the application of the principle of territorial policies.

The uneven nature of the recovery and protection of the environment set off a series of articulated fights involving especially the discussion of social rights, which, in turn, formed the movement for environmental justice. In the 1980's, that kind of movement showed in the United States, engaging, according to Acserald (2004:25), the notion of geographical equity "on the space configuration and communities in a locational proximity to sources of

environmental contamination, hazardous installations, uses of locally undesirable soil like toxic waste dumps, incinerators, sewage treatment, refineries etc." The horizon of this fairness is, of course, the individual and collective desire of an environmentally sustainable and healthy social life. In this horizon, unfolds, for involvement, the broader notion of justice.

The concept of environmental justice was born of inventive social movements of the United States, within the civil rights struggles of African-descendent populations, from the 1960, in face of the socially discriminated groups exposure to environmental hazards, as well as in the years 1970 to combat "environmental racism" (Gleeson & Low, 2003; Acserald et al., 2004). A process of epistemic, gains and losses for environmental justice, since the 1980, understand "the set of principles that ensure that no group of people, whether racial or ethnic groups, support a disproportionate portion of degradation of collective space" (Acserald et al., 2004:9-10).

Johnston et al. (2000:2) define environmental justice as "socio-political movement that seeks to articulate environmental issues from a perspective of social justice". We reiterate that the environmental justice, circumscribed within expanded territorial justice concept, requires theoretical and applied opportunity to fight for the right to fair landscape. This seems to be the case of Jacaré river, in the drainage basin of the same name.

2. FROM LANDSCAPE MANAGEMENT TO THE RIGHT TO LANDSCAPE: THE RECURSIVE RING

As we stated in a recent debate (Lima et al. 2016), the symbolic-expressive product of this relationship, inherited from generations of preterit use and we leave as a legacy to future generations, we call landscape, respecting that, with it, we build our identities and our individual and collective affiliations.

The landscape protection involves all the socio-political and cultural actions they are for the care, preservation and recovery of the significant social and environmental conditions of existence, considering its symbolic asset value, natural and social. Soon, promote and provide the landscape with strategic focal points of public access also means protecting it. For Acserald et al. (2009: 73) "[an] environmental inequality can manifest itself both in the form of unequal environmental protection as unequal access to environmental resources."

The landscape management is the coordinated set of ethical norms, public regulation and collective socio-political practices to promote changes in social, economic and environmental processes for landscape protection. Also, it can be defined as the process of formulation, coordination and implementation of a set of strategies directed to the appreciation of a particular landscape and improving quality of life, in the context of sustainable development (Busquets & Cortina, 2009). It's necessary to fight, therefore, social inequalities and environmental injustices. The recursive ring between landscape management and social right to landscape derives precisely from this fight, as a part of to get to the other and vice versa.

In turn, the landscape construction corresponds to a constituent movement involving *a fortiori* tangible and intangible elements. To Costa & Monteiro (2002:291), the values and meanings of an urban river for residents, is the direct interest of studies of "inter-relationships established between the system of culture and the system of nature, addressing a look at the urban water and its landscape interaction in cities", follow from this methodological procedure of scientific research on local social experiences to identify preferences, values and meanings attributed to the landscape. This systemic cast of preferences, values and meanings functions as mainstay than designated as river etnogeomorphology.

For Ribeiro (2012: 95), the etnogeomorphology is "a way of understanding guided by the etnocientifical matrix, which argues that the constituted knowledge, academic and official by recognized institutions in scientific and technological development cannot be considered as the only way of understanding reality". This is where knowing vernacular of ordinary people who experience a given space comes into play as co-protagonist. For this reason, the perception of Jacaré neighborhood residents becomes imperative in this research.

Depending Busquets & Cortina (2009: 693), the right to social landscape can be properly defined as:

Subjective right to enjoy the scenery right that public authorities should ensure citizens within a democratic and participatory framework for action in the framework of a legal concept that recognizes the landscape as a key factor in quality of life and well-being of all individuals and social groups, as an essential ingredient of their identity and their cultural, socio-economic and spiritual development.

This right is linked to the ethical attitude towards landscape. For Gómez Alzate & Londoño López (2011: 47), with which we agree entirely:

In addition to a simple aesthetic appreciation of a landscape, their sensory experience and their objective knowledge or simply utility, there is a sustained ethical reason in human interest, because the landscape doesn't exist without a human perspective; for that reason to have a sustainable vision of landscape, it is necessary to abide an ethical attitude to it and not just consider the human being as a mere spectator or passive beholder.

3. LANDSCAPE INTEGRATION AND URBAN RIVER RENATURALISATION

3.1 The integration as landscape management strategy

We depart from the reality principle that renaturalisation implies mobilizing and promoting actions that allow overcome the degradation stages of a water body situation, intervened to describe the complex dynamics of environmental conditions on plots of conflicting social and cultural practices from the perspective of integration landscape or landscaping. The landscape integration is a strategic concept that takes the (re) naturalization as search criteria by a natural image of space, increasing the presence of natural components, but not its uniqueness in the analysis and practical proposition of a territorial intervention.

Visibility is an important practical-sensitive expression toward a social systemic and environmental behavior. Therefore, in the wake of this research on renaturalisation of urban rivers, we equal river basins and visual basins. In other words, we analyze the Jacaré river basin as a visual basin. Visual basins are defined as surfaces which is visible from a point or set of visible points and vice versa. In these visual basins there are identified landscape perception areas, relating the immediate, deep and distant perspectives.

Based on the definitions proposed by Folch (2003), it remains to clarify what is the role of tactical visual connectance for landscape integration strategy. Connectance means the degree of continuity of the physical background of a landscape mosaic matrix, such that when the total connectance, the matrix appears as a single spot. Thus, more specifically, the ecological connectors and landscaped connectors play a key role in this degree connectance. For ecological connector, define the habitat or set of diverse geometry habitats and quite wide in all sections of its development which guarantees the territorial

continuity between two large ecosystem complexes. In turn, the landscape connector is defined as:

Transition framework between two scenic structures to ensure its territorial continuity. Unlike the ecological connector, it has a more perceptive functional character, although it may contain associated complex territorial functions to reduce the gap between the connected structures (Folch, 2003: 277).

The landscape cohesion visual basin depends, then, measures aimed at connectance. In this endeavor, the landscaped connectors require better definition now more operational nature, bringing out the door notion - defined as a strategic point of accessibility to the landscape, or as focal points of observation/public contemplation of the landscape. We oppose private ownership matrix by another public appropriation, restoring the intangible value of landscape.

3.2 Renaturalisation of urban rivers and landscape management tactics

The renaturalisation of urban rivers is a challenge and a multidisciplinary task that refers to the landscape. According to Zahed Filho et al. (2009), the growing awareness of the damage to nature, allows them to be considered new strategies aimed at renaturalisation of rivers and streams, that is, the return of the initial / natural conditions of water courses. Register adding that, according to Garcia & Borobio (2013: 121), "to advance the knowledge of intangible values of landscape it is, in fact, a trip to the interior of man, of his desires and emotions, his reference and difference, his identity."

In general, remember Busquets (2009: 458) "the notion of landscape integration is associated with harmony of ideas, order, respect and consistency. (...) The (re) naturalisation becomes the most obvious tactic conception of landscape integration, corresponding to the criteria "that want to recover the natural image of places" (Busquets, *idem*, *ibidem*).

4. JACARÉ RIVER BASIN CASE: AN ANALYSIS

4.1 Jacaré River Basin: a description

Located in the Oceanic Region of Niterói, state of Rio de Janeiro, the Jacaré river has its sources located within the Darcy Ribeiro Reserve area and its boundaries defined by Morros do Cantagalo, Serra do Malheiro and Serra Grande, particular geographical situation which provides a relative conservation of their sources in a still dense vegetation. The aforesaid basin is the largest contributor to the lagoon system Piratininga-Itaipu, distributing over a narrow valley about 6 km (upper section - 1542 m; intermediate section - 3588 m; lower section - 800 m), with a declination gradient of 5.9° in the upper stretch and 0.4° in the middle and lower stretches. The principal fluvial course of the basin is the Jacaré river, by this hierarchy, names the hydrographical set.

Still based on this description, we believe it is possible to divide the basin into sectors according to the related environmental conditions and the characteristics of the built space. Thus, the basin is divided into four distinct areas (Fig. 1). The most densely occupied sector is the area of the mouth, where slum and middle-class homes remain. Situated in this sector, a number of middle-class homes rather invisible the Jacaré river, suddenly taken, a mere underground channel in order to increase the buildable area. Here, the public landscape clashes: the visible and invisible river express the landscape privatization.

In the sector immediately upstream, we find out more sophisticated buildings, residential and commercial use, are presented to us as luxury condominiums, like the Jardim Ubá and

the shops belonging to commercial complexes. In the sector that is located in the intermediation of the two mentioned and the area of the nascent, is the greatest diversity of social uses, connoting private property distributed among social groups belonging from upper middle class to the most precarious.

Rounding sectors of the Jacaré basin, is the rearmost section upstream, corner of spring. It is an area of rural traits. The valley is strikingly marked by the omnipresent canopy of the rainforest hillside, with its primary traits - and others featuring an agroforestry. Even in this sector, worth highlighting the presence of two properties in particular: the old Equestrian and former Camping.

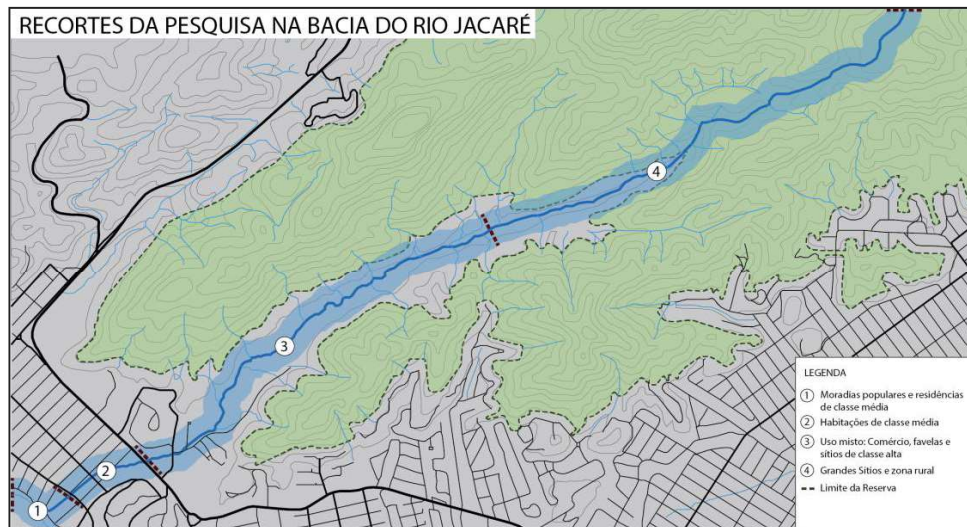


Figure 1. The cut of the basin and its significant social uses: housing, commerce, farming.

Source: Lima et al. (2016)

4.2 The Jacaré: vernacular geographies of a critical neighborhood

We evaluate the Jacaré as a critical neighborhood, mainly due to landscape and social fragmentation that it closed due to private ownership extremely perverse and unfair that annihilates the nature of the landscape, by stratagem, licit and illicit, ownership private space. The fragmentation of this duty would oppose one landscape cohesion project.

We advocate the implementation of doors and windows - focal points of public observation of the landscape - as tactical instruments of landscape integration. An urban river renaturalisation project must, therefore, contemplate the restoration of an intangible aspect: the public contemplation of the landscape. In this sense, the landscaped connectors stand in a mandatory instrument.

Here are some questions of the interviews and the return of some deponents.

Do you know the name of the river that goes through here? You know where it is born?

WR: Jacaré river? In the mountains behind the Equestrian that almost goes to Rio do Ouro.

ER: Jacaré, at the end of Jacaré road.

What do you know about Jacaré?

IQ: By the time the water was clear and had newborn alligators.

LA: I've lived here for over 40 years. The river was clean, you could bath and fish lobster. Gradually people were coming and everything was changing.

Has the river course different features? Why?

IQ: Some besiegers diverted the course, the Ubá condominium also, and buildings near the lagoon.

LB: Many places were covered so we did not see the dirt.

Which stretches of Jacaré river call your attention? Why?

IH: The river is in front of my house, is polluted with sewage that the community plays.

ZG: The sewage coming out of Ubá Condominium.

Do you often visit / walk / go to Jacaré river stretches beyond that where you live?

LH: No, lack of time and interest.

WR: I used to, but now has almost no attractive, you go fishing and come back stinking mud and sewage. I see the lagoon every day, as I told you, I live in front of it and sometimes we leave by boat to "tarrafeir", but gives no more than four or five kilos. Siri disappeared, shrimp disappeared.

What makes it difficult / easy access of people to the river?

WR: No more attractive, you go fishing and back reeking of dirty mud.

VC: There is no access.

What solutions would be possible to recover this natural and social environment?

LH: First solution would be to stop the dumping of sewage and garbage into the river. Occurring so, clean and recover margins.

IQ: A radical action: demolition of buildings that interfere with access and replanting of the river bed from the source.

Based on these interviews, we identified doors / windows, or focal points of public accessibility, the fundamental pragmatic conception of the Jacaré basin as a visual basin (Fig. 2).



Figure 2. Doors and windows of the visual basin: the landscaped connectors

CONCLUDING: A PROPOSITIONAL AGENDA

In this analysis, we treat subjects spaces, constructed territories and suitable for concrete subjects. The urban Jacaré neighborhood, in Piratininga, contains one of the cases subject to critical analysis in relation to exclusionary territorial dynamics and strong landscape impact that it is true. Follow, so the weights of Angelovski (2014: 173) when it analyzes the risks of encroachment, speculation land and environmental gentrification of some urban neighborhoods, which brings us to the defense of environmental justice projects to restore the sense of cohesion of distressed neighborhoods. If is fair that "the right to the

city is held by the people who inhabit the city, not by those who own it" (Anguelovski, 2014:177), the right to the landscape follows this same stream.

The repair of dignity against the vulnerability and social and environmental discrimination, as well as the political position against environmental gentrification imposing, leads us inescapably to the proposition of the following strategic agenda points of urban rivers renaturalisation, like the case of Jacaré: a) recover the hydrological functioning of the river area - expression of the systemic link between fluvial dynamics/territorial matrix; b) enhance public diversity of habitats - expression of the systemic link between ecological connector/landscaped connector; c) integrate environmental recovery cultural heritage - an expression of the link between natural system/cultural system; d) order, systematize and regulate urban uses - expression of the systemic link between social practice/space practice; and e) promote accessibility and sociocultural frequency to the river - expression of public/private systemic link. Finally, we should always struggle for inclusive renaturalisation of urban river involving ethical principles.

In accordance to Michel Serres (2011:93), "who knows, realize the beauty of the world is, quite simply, to take in front the appropriation waste?" In this direction, we conclude, categorically: the renaturalisation of urban rivers corresponds to humanized desartificialization of themselves.

REFERENCES

- Acserald, H. et al. (Orgs.). 2004. *Justiça ambiental e cidadania*. Rio de Janeiro: Relume-Dumará.
- Acserald, H.; Mello, C.; Bezerra, G. 2009. *O que é justiça ambiental*. Rio de Janeiro: Garamond.
- Anguelovski, I. 2014. *Neighborhood as refuge*. Community reconstruction, place remaking, and environmental justice in the city. Massachusetts: MIT.
- Busquets, J. 2009. Los estudios de impacto e integración paisajística. In Busquets, J.; Cortina, A. (Comp.). *Gestión del paisaje*. Manual de protección, gestión y ordenación del paisaje. Barcelona: Ariel.
- Costa, L.; Monteiro, P. 2002. Rios urbanos e valores ambientais. In Del Rio, V. et al. (Org.). *Projeto de lugar*. Colaboração entre psicologia, arquitetura e urbanismo. Rio de Janeiro: PROARQ/Contracapa.
- Folch, R. (Coord.). 2003. *El territorio como sistema*. Barcelona: CUIMPB.
- García, M.; Borobio, M. 2013. Cartografies de l'intangible: fer visible l'invisible. In *Reptes en la cartografia del paisatge*. Dinàmiques territorials i valors intangibles. Girona: Observatori del Paisatge.
- Gleeson, B.; Low, N. Environmental justice. 2003. In Agnew, J. et al. (Ed.) *A companion to political geography*. Malden: Blackwell.
- Gómez Alzate, A.; Londoño López, F. 2011. *Paisajes y nuevos territorios (en red)*. Cartografías e interacciones en entornos visuales y virtuales. Barcelona: Anthropos.
- Lévy, J. Justice spatiale In Lévy, J. ; Lussault, M. (dir.) 2003. *Dictionnaire de la Géographie et de l'espace des sociétés*. Paris: Belin.
- Lima, I.; Castro, D. 2013. Justiça territorial e gestão ambiental complexa: a bacia hidrográfica em foco. In: *9º Congresso Brasileiro de Sistemas*, Palmas: Universidade Federal do Tocantins, Anais (...).
- Lima, I.; Barbosa, J.; Barcellos, D. A integralização da paisagem como estratégia de renaturalização da bacia do rio Jacaré. In *I Seminário sobre Práticas de Renaturalização Fluvial – estratégias e ações*. Niterói: Universidade Federal Fluminense/Vice-Prefeitura Municipal de Niterói, 07 –11 março de 2016. No prelo.
- Ribeiro, S. 2012. *Etnogeomorfologia sertaneja*: proposta metodológica para a classificação das paisagens da sub-bacia do rio Salgado/CE. Tese de Doutorado. Rio de Janeiro: PPGG/Universidade Federal do Rio de Janeiro.
- Serres, M. 2011. *O mal limpo*. Poluir para se apropriar? Rio de Janeiro: Bertrand Brasil.
- Rodá, F. 2003. La matriz del paisaje. In Folch, R. (Coord.). *El territorio como sistema*. Barcelona: CUIMP.
- Zahed Filho, K. et al. 2009. *Água em ambientes urbanos – renaturalização de rios em ambientes urbanos*. São Paulo: Escola Politécnica da Universidade de São Paulo.