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# TERRITORIALITY AND URBAN ECOTONES: LIMITS UNDER TENSION

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## ABSTRACT

The originality of this work consists in the search for an understanding of the concerns of urban relations that characterize the “urban ecotones”, based on a bibliographic review of the territorial expression that marks and distinguishes ecosystems. The expression “ecotone” is discussed and recontextualized from an urban perspective, through a transdisciplinary approach. In the sequence, particular situations are presented, associated with propositions of classifications related to the term, within the scope of cities. The same Greek prefix *oikos* (eco) present in “ecology”, meaning intimate environment, - the home -, arises in ecotone, added by the Greek suffix *tonos* (or Latin *tonus*), indicating tensioning. Therefore ecotone, originally a colloquial expression found in biology, refers to the transition zones between biocenoses. It is the region where neighboring biomes, with different structures and characteristics, converge and interact. In an urban environment, the definition deserves a more specific approach, which stimulates a reflection on the notably anthropic presence. That implies recognizing a coexistence that often leads to social raids and clashes of political, cultural, affective and economic nature. The multidisciplinary and transdisciplinary associated with the topic requires, to a certain extent, some transit between the natural sciences and the social sciences, in their different manifestations and approaches.

## KEYWORDS

Ecotone. Territorialization. De-territorialization. Re-territorialization. Tensioning.



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## TERRITORIALIDADE E ECÓTONOS URBANOS: LIMITES EM TENSIONAMENTO

### RESUMO

A originalidade deste trabalho consiste na busca pela compreensão das inquietudes das relações urbanas que caracterizam os “ecótonos urbanos”, a partir de revisão bibliográfica da expressão territorial que marca e distingue os ecossistemas. A expressão “ecótono” é discutida e recontextualizada sob o prisma urbano, por meio de um enfoque transdisciplinar. Na sequência, são apresentadas situações particulares, associadas a proposições de classificações atinentes ao termo, no âmbito das cidades. O mesmo radical grego “oîkos” (eco), presente em “ecologia” e que denota o ambiente íntimo - a casa -, surge em ecótono, acrescido do grego *tonos* (ou do latim *tonus*), que indica tensionamento. Assim, ecótono, originariamente uma expressão coloquialmente encontrada na biologia, referencia-se às zonas de transição entre biocenoses. É a região onde biomas fronteiros, com estruturas e características diferentes, encontram-se e tensionam-se. Em ambiente urbano, a definição merece uma aproximação mais específica que convida à reflexão da presença marcadamente antrópica. Implica em reconhecer convivências que, muitas vezes, levam a rugas e embates sociais de cunho político, cultural, afetivo, econômico etc. A multidisciplinaridade e a transdisciplinaridade associadas ao tema demandam certo trânsito entre as ciências naturais e as ciências sociais, em suas diversas manifestações e aproximações.

### PALAVRAS-CHAVE

Ecótono. Territorialização. Desterritorialização. Reterritorialização. Tensionamento.

## INTRODUCTION

The city, the “practical-sensitive” expression (LEFEBVRE, 2006) of urbanism, in its territorial and anthropic essence, is the place of socializations, converging or antagonistic, which marks the plural character of the interests of each segment in the social, political, economic, cultural field, etc.:

*The [city] is situated at an interface, half-way between what is called the near order (relations of individuals in groups of variable size, more or less organized and structured and the relations of these groups among themselves), and the far order, that of society, regulated by large and powerful institutions (Church and State), by a legal code formalized or not, by a ‘culture’ and significant sets (LEFEBVRE, 2006, p.46).*

It is in the city, the main field of affirmations, weaknesses, identities, connections, conflicts and rites, that socio-cultural singularities are most strongly delineated. Multidimensional interactions in cities are reaffirmed as expressions of power and conform, over time, as territorial units. The objective of this work is to deal with this territorial issue and, consequently, with the possible threshold conflicts between “ecosystems” that come in different forms.

Originally, in the universe of biology, the interface or membrane that unites (or separates) ecosystems or biomes is called an ecotone. It is a stress zone. In the field of urbanism, the urban ecotone is characterized by emerging tensions, generally of an anthropic aspect, due to social, economic and cultural connotations: “A boundary is not that at which something stops but, as the Greek recognized, the boundary is that from which something begins its presencing. (essence)” (HEIDEGGER, 1971).

The relevance of this research is based mainly on the original way of bringing the expression “urban ecotone” to real and diverse situations, based on the transposition of a term from the natural sciences and its application to the cultural space (of cities). As a methodological procedure, a bibliographic review will be carried out, in order to define the concept of territory. Subsequently, the term “urban ecotone” will be defined, which arises from frictions between contiguous territories, in the plural scope of the urban environment. Finally, classifications will be proposed, according to types identified as recurring, and representative (typical) situations will be exemplified: I) Ecotones due to anthropic actions with consequences in natural environments; II) Ecotones by zoning with consequences for urban segregation; III) Ecotones due to sudden urban transformations with socioeconomic consequences; IV) Ecotones due to de-territorializations with consequences on re-territorializations. Currently, tensioning situations have been exacerbated in different urban environments, as expressions of urban ecotones.

The recent COVID-19 pandemic highlighted social and economic inequalities, in Brazil and worldwide. Although the fact is underlying the purposes of this work,

a brief contextualization will be made in the final considerations in order to reinforce justifications, in the context of the vulnerability of certain social segments. As noted by Guattari, in a similar context, 30 years ago: "Chernobyl and AIDS have dramatically revealed to us the limits of humanity's techno-scientific power and the 'backlash' that 'nature' has in store for us." (GUATTARI, 1990, p.24).

## TERRITORY IN DEBATE

Lewis Mumford (2008 [1982], p.3) laid an important foundation for understanding the essence of cities. He emphasized that the physical elements, in the form of traces or clues, would be the most superficial aspects of evidence about the old forms of life and social interaction, as they are not efficient to clarify cultural passages, such as rituals or languages, as well as processes of socialization and, therefore, of territorialization:

*(...) we must follow the trail backwards, starting from the most complete structures and urban functions known, to their original components, however remote they may appear in time, space and culture, in relation to the first tells that have already been opened. Before the city there was the hamlet and the shrine and the village: before the village, the camp, the cache, the cave, the cairn; and before all these there was a disposition to social life that man plainly shares with many other animal species."*

Frederick Clements (1874-1945), at the beginning of the 20th century, in the context of natural sciences, developed the idea of biome: "The extent and character of the biome are exemplified in the great landscape types of vegetation with their accompanying animals, such as grassland or steppe, tundra, desert, coniferous forest, deciduous forest, and the like." (CLEMENTS, 1939, p.20). Clements early defined ecology as "predominantly the science of population communities" and observed its dynamic essence. The interest in biomes naturally brought scientific curiosity about "borders and boundaries" (KARK, 2013, p.149), in his biological range and diversity.

In the urban universe, the fundamentals that define the concept of territory must be clearly distinguished. According to Milton Santos (2011, p.11), "The territory is the place where all actions, all passions, all powers, all strengths, all weaknesses flow, that is, where man history is fully performed from the manifestations of existence". At the city scale, the territory refers to a geographical portion under the action, domain, influence or jurisdiction of a given community. In it, are materialize components modeled, historically and socially, by convergent and divergent factors, of a cultural, political and economic order that result in a certain unity (even if unstable). They are domains, in their own dynamic logics and codifications, which assume autonomies, permanences, centralities and articulations. From the rescue of Souza's work (2008, p.65), it is worth reinforcing the distinction between territory and the respective locational (material) portion in which the concept is effective:

*Now, if borders and boundaries can be "invisible (although we can take as reference, for this purpose, installed material landmarks, as well as rivers and other features visible in the landscape), a border may as well be a straight line*

*arbitrarily drawn on a map at an office so, intellectually, it is necessary to admit that the territory and the material substrate that serves as support and reference, and even as a conditioning factor, even though they cannot be concretely separated in a simple way (as if there could be territory without a substrate), they are not, only for that reason, synonyms.*

Raffestin developed references to territoriality, “the ensemble of relations that societies, and consequently the humans that belong to them, maintain, with the assistance of mediators, with the physical and human environment for the satisfaction of their needs towards the end of attaining the greatest possible autonomy allowed by the resources of the system. (RAFFESTIN, 2012, p.124) or “The concepts of territory and territoriality belong not only to the juridical sciences but also to animal ethology, which preceded human ethology” (Ibid.). Gregotti (1975, p.68), in “The Territory of Architecture”, attested that the “city represents the most remarkable effort, on the part of human civilization, of a complete transformation of the natural environment, the most radical transition from the nature state to the culture state”. In his concern to highlight the architect (and the urban planner) as a formalizer of “figurative objectives in spatial performance”, in the interweaving between the definitions of “location” and “formalization”, he stated:

*Naturally, we are aware that the territorial reality is formed by a series of very complex and interacting strata that constitute different spatial models (geographic, administrative, demographic, economic, etc.), as physical realities that must be organized among each other with a common objective that will materialize in a new “shape of the territory” (GREGOTTI, 1975, p.87).*

Saquet (2007, p.31) compiled several news about the concept. He started from the basic understanding that the territory is the “substrate/stage for the realization of human life”. He recognized it as a “place and means of social production, organized and managed by social, political and/or economic subjects” (SAQUET, 2007, p.71) and summarized: “The territory, as a concept, has material and psychological components, linked to the social life of separate and interdependent groups that organize space and are in movement, overcoming limits and borders” (SAQUET, 2007, p.69). Soon, the socio-spatial dynamics, with its specificities, gained importance as a process, in a moment of emergence of ecological awareness. Supported by Giuseppe Dematteis, Saquet (2007, p.74) presented the cultural and environmental importance (of the territory):

*Dematteis (...) affirms that, between the late 1970s and the early 1980s, the way of viewing the territory changes, that is, attention to public policies and interventions remains, but increases the attention to the differences and specificities of places. There is an intense theoretical-methodological and empirical-reflective work to understand inequalities present in the territory, mainly from the capital-labor relations, the use of space and movement, translated into the historical and transcultural scale (circulation and communication networks). The territorial problem of development is slowly gaining centrality. However, concerns and attentions with environmental conditions, for example, gained strength during the 1980s and, especially, from the 1990s.*

Souza also brought clarifications about his own academic production as a way of revising misinterpretations made by others, which mischaracterized his reasoning. He stressed, for example, that:

*(...) what "defines" territory is, in the first place, power (...). This does not mean, however, that culture (symbolism, webs of meanings, identities ...) and even economics (work, processes of production and circulation of goods) are not relevant or are not "contemplated" when dealing with the concept of territory" (SOUZA, 2008, p.59).*

Within the city, Souza (2008, p.61) distinguished "places" and "territories":

*A region or a neighborhood are, as such, spaces defined, basically, by shared identities and intersubjectivities; they are, therefore, "places", spaces lived and perceived. But a region and a neighborhood can also be clearly or intensely territories, due to regionalisms and neighborhoods, or even because they were "recognized" by the State apparatus as formal spatial units in the service of its administration or planning, or because of movements that began to exercise, strongly, an insurgent counterpower.*

In Souza's (2008, p.64) work, if on the one hand the city, in its semiological communication, manifests its formal configurations synthesized by the landscape expression, on the other hand, "as a spatial projection of power relations, the territory cannot be understood and investigated (its origin and the causes of its transformations) without the material aspect of social space being properly considered". It should also be understood that, in cities, the territory "as a source of resources" is not necessarily referenced "to the appropriation of nature" in the humanistic, cultural or symbolic sense, but, in general, in the most visceral material issue, that of financial speculation (real estate).

## WHEN TERRITORIES RESULT IN ECOTONES

So far, we have sought to anchor this research in the various meanings associated with the territory. Now, we deepen the debate in relation to the insurgencies associated with the territories that suggest shocks and polarizations in the urban scope. This methodological strategy should facilitate the understanding of the meaning of the urban ecotone (Figure 1), its processes and components.

Odum (1913-2002) had a special interest in ecotones, due to the biological richness, defined as areas of transition between adjacent ecological systems (ODUM; BARRETT, [1959] 2007), visible by the sudden change in the patterns and structures of communities, with regard to biophysical/climatic or anthropogenic aspects (MARFO et al., 2019). Ecotones are recognized as "transition areas that can serve as speciation centers" (KARK, 2013, p.149), with high genetic and morphological diversity, whether in aquatic (estuaries, bays, for example) or terrestrial systems (forests, woods etc). They can imply very different scales, as in the case of confronting biomes with continental dimensions or small transitions between habitats, that can vary from natural borders (transitions of latitude, altitude etc.) to interfaces of human origin (deforestation, urban occupations, etc.) (LOURENÇO, 2019).





**Figure 1** – Urban ecotone in Rio de Janeiro, Botafogo  
**Source:** Author.

The theoretical arguments that will support the proposal for the classification of ecotones are presented below. Evidently, the approximation of each particular case will strongly assist the understanding of the different types (of ecotones).

As will be seen in **“Ecotones due to anthropic actions with consequences in natural environments”**, human interventions have had a strong predatory and inconsequential sense in the face of natural environments. The understanding of the meaning of the terms “biome” and “ecology”, introduced by Clements (1939, p.20), at the beginning of the 20th century, is important to understand how “population communities” invade (or are invaded), from “borders and boundaries”. Different biomes have suffered frequent degradation, due to industrialization and unplanned urbanization. Territorial expansion advances without precedent. Loss of biodiversity, pollution of rivers and seas, deforestation, etc. are the best-known faces of these attacks. In a sense, the COVID-19 pandemic that plagues the planet also represents the practical and symbolic advance of human beings over forests that were once untouched. It is believed that there are few regions on the planet that have not suffered consequences of human activities.

In the context of cities, the classification **“Ecotones by zoning with consequences for urban segregation”**, reveals that segregations are evidence of serious socioeconomic imbalances and the lack of interest of the public authorities in facing the issue. Poor and rich clusters live in tension at their limits, with unequal services and infrastructure. In this way, urban ecotones are configured, in essence. Even when there is planning, the territorial organization reaffirms its interest in social distance. Whether through urban planning instruments such as zoning, for example, or the creation of condominiums “properly” distanced from the outside world, by walls, fences and cameras.

These are structures of power that tend to perpetuate themselves. As seen, Milton Santos (2011, p.11) brings the view that, in the city, the territory refers to a portion under the domain of a given community. It also recalls Souza (2008, p.65) that reveals that “territory and the material substrate that serves as support and reference” cannot be separated concretely in a trivial way.

In another specific approach in **“Ecotones due to sudden urban transformations with socioeconomic consequences”**, it can be concluded that the territory “as a source of resources”, as seen above, is referenced to the most visceral material issue, that of financial speculation (real estate). Souza (2008, p.59) highlights that what defines the territory is power, but this does not mean that culture and the economy are not relevant. Often, the problem arises when the economy disguises as culture. Although, for example, the idea of city marketing, within the scope of competition between cities, is not exactly something new - considering the world exhibitions and fairs that, for almost two centuries, have propagated technical feats and modernities (not always real) associated with countries, corporations, etc. - the proportions and scope of their initiatives are superlative and omnipresent. In this sense, there are severe criticisms regarding certain “urban centralities” supposedly associated with urban requalifications, with cultural or historical varnish. In the view of some, it is only the intensification of “diffuse and discontinuous tactics that radicalize socioeconomic inequalities and reveal, in the course of its affirmation, its not so hidden purpose of promoting the global market for lifestyles, services and images” (BARBOSA, 2011, p.127).

Thus, these artificial centralities are territories of “exhibition” and “consumption”, to be enjoyed by elite segments of society, in cities defined as “hypermarkets of symbols of commodity fetishism” (BARBOSA, 2011, p.128), in out of step with the urgent and real needs of precarious social strata. Urban stretches with striking historical ambiances, port areas undergoing requalification as a “waterfront”, cities that host large sporting events, etc. are characteristic examples associated with city marketing. In these cases, the territorial conflicts that justify the expression “ecotone” come from private interests that, under the argument of urban revitalization or renovation, even carry out violent actions (removals, de-characterization of natural ecosystems, destruction of cultural heritage, etc.) that benefit only more affluent extracts (business and/or social).

Perhaps an even more particular view regarding the theme “territory”, which also manifests itself in urban ecotones, may be associated precisely with those who are de-territorialized: refugees. The loss of the sense of citizenship and social identity - often due to the omission, ineptitude or oppression of the State itself - can be very serious, as it implies the loss of the theme “right to have rights” (ARENDT).

At the same time, refugees are a strong expression of the binomial de-territorialization/re-territorialization represented by the classification **“Ecotones due to de-territorialization with consequences on re-territorialization”**. The



United Nations (UNHCR, 2019) estimates that, throughout 2018, 37,000 people were forced to leave their native areas daily. This data represents an official number of 13.8 million people in that year alone (2018).

Historically, records of refugees have existed for more than 2,500 years. However, the term “ghetto” has been used since the 16th century and has been associated with existing Jewish settlements in Italy, divorced from the hegemonically Christian society. In general, the expression refers to segregated spaces, confinements and marginalized populations. On the other hand, it should be noted that the expression “diaspora” refers to the displacement of a specific people, from an original (and traditional) centrality, in a spontaneous, encouraged or coercive way, towards new places. The understanding of these two words, one that represents isolation (“ghetto”) and another that denotes dispersion (“diaspora”), helps to understand how certain ethnic or cultural cloisters are formed. These enclaves are historical expressions of human migration in search of protection through collective affirmations (ghettos, colonies, ethnic neighborhoods, etc.). As seen, “a region or a neighborhood (...) are spaces defined by shared identities and intersubjectivities”. The loss of these capacities leads to the desperate search for new places: “spaces [to be] experienced and perceived”. The migrations of refugees start to represent an “insurgent counterpower” of hope, even if initially fragile and limping (SOUZA, 2008, p.61). However, a “predisposition for social life that man shares” (MUMFORD, 2008 [1982], p.3) or inherent to human ethology (RAFFESTIN, 2012, p.124).

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After all, what non-obvious manifestations are identified in the city that illustrate territorial confrontations and result in the emergence of urban ecotones?

The most significant objective of this work is to define the expression and propose typical classifications of “urban ecotones” associated/referring to exemplary and illustrative situations, that is, how the theory manifests itself in practice. The frictions that have as their starting point the contiguity of territories or ecosystems, as analyzed, have characteristics, extensions and complexities that differ in each situation. As they are urban ecosystems, therefore, open, unstable and dynamic, there will always be the possibility of genuine forms of ecotones.

Before the proposals for classifications are presented, a practically conclusive thought is advanced, through the thinking of Félix Guattari:

*The only true response to the ecological crisis is on a global scale, provided that it brings about an authentic political, social and cultural revolution, reshaping the objectives of the production of both material and immaterial assets. Therefore, this revolution must not be exclusively concerned with visible relations of force on a grand scale, but will also take into account molecular domains of sensibility, intelligence and desire. A finalization of social labour, regulated in a univocal way by a profit economy and by power relations, would only lead, at present, to dramatic dead-ends (...)* (GUATTARI, 1990, p. 9).

## I. ECOTONES DUE TO ANTHROPIC ACTIONS WITH CONSEQUENCES IN NATURAL ENVIRONMENTS

In 2000, Eugene Stoermer and Paul Crutzen coined the term Anthropocene to define the geological period or era currently experienced. The expression seeks to synthesize and symbolize the transformations carried out by human beings on the planet. Rapid population growth, in addition to new materials, equipment, technologies, procedures, behaviors, etc. altered biogeochemical cycles, released greenhouse gases in a dizzying way, contaminated effluents and produced waste, on a scale never seen before. Despite the fact that the areas recognized as urbanized in the world compose levels of the order of 3% (CIESIN, 2005), some consequences expose the distinction between “ecology of the city” and “ecology in the city”. The overlap of anthropogenic and natural ecosystems produces antagonisms, usually with greater damage (as they are irreversible) to the fringes of natural environments: forests, rivers, seas, etc. However, among the Sustainable Development Goals (SDGs), proposed by the United Nations in 2015, there are considerations for the planet’s environmental conditions, which are increasingly threatened:

*Climate change is one of the greatest challenges of our time and its adverse impacts undermine the ability of all countries to achieve sustainable development. Increases in global temperature, sea level rise, ocean acidification and other climate change impacts are seriously affecting coastal areas and low-lying coastal countries, including many least developed countries and small island developing States. The survival of many societies, and of the biological support systems of the planet, is at risk. (UNITED NATIONS, 2015).*

As an aggravating factor, according to the most recent report by the respected Intergovernmental Panel on Climate Change (2019), global warming reaching 1.5°C above the average temperature of the pre-industrial period could lead to serious and extensive problems. If this phenomenon occurs (possibly in this half of the century), it will mean that greenhouse gases will have risen to levels and concentrations that are too high with extreme climatic impacts. Coastal regions are expected to be flooded, with abrupt threats to cities, plantations and natural ecosystems. It must be stressed that thirteen of the twenty most populous cities in the world are located in coastal regions (HANSON, 2009).

As a specific example of anthropic action in natural environments, reference is made to the Atlantic Forest. A biome composed of several forests, species and reliefs that stretches across 17 states and comprises 7 of the 9 largest hydrographic basins in Brazil. Although the National Institute for Space Research (INPE – Instituto Nacional de Pesquisas Espaciais) and the SOS Mata Atlântica Foundation (2020) reported a recent drop in deforestation in the period 2018-2019, the Atlantic Forest has preserved only 12.4% of its original area. Its main threats are the predatory exploitation of natural resources, unsustainable farming practices, industrialization and urbanization without planning and excessive consumption, garbage and pollution (SOS MATA ATLÂNTICA FOUNDATION, 2018). All of these facts are directly related to

impacts on natural ecosystems and, in a systemic nature, loss of biodiversity, increase in global and local temperature, degradation of water sources, exposure to diseases, especially of the most neglected social strata, among other consequences.

## II. ECOTONES BY ZONING WITH CONSEQUENCES FOR URBAN SEGREGATION

The most rigorous planned forms of urban zoning are based on the functionalist precepts defended by the Athens Charter. This manifesto, initially written by Le Corbusier and approved at the IV CIAM in 1933, determined the separation of housing, work, leisure and circulation. The importance of zoning was remarkable in the 20th century and is still strongly present today, with strategic instruments for segregation of uses, but, above all, for social segregations: "The master plan was the "creative" and progressive focus of the city, as well how zoning was the primary instrument for its implementation" (GARLAND; MASSOUMI; RUBLE, 2007, p.214).

Furthermore, Meyer (1979, p.160) observed specifically in relation to Brasília, inaugurated in 1960 and conceived under the strictest precepts of Modern urbanism, that "the spatial organization of the city, based on sectorization, created an opposition between the spaces of the political power and public space". The segregation of activities damaged urban diversity and vitality and ended up increasing social distances. Meyer complements his reasoning, in reference to the Brasilia Master Plan: "The urban-commodity soil (...) is out of reach of the low-income population, or rather, of insufficient income to consume such "commodity". To live, it is necessary then to leave, which is a contrast between what is inside and outside the Pilot Plan" (MEYER, 1979, p.161).

The Pilot Plan (PP) concentrates the highest social strata and institutional power. In the "satellite cities", the poorest populations were allocated. The consequences of the restrictions resulting from urban sectorization are tacit, but they are striking. They are universes separated by sectorization, in this case, socioeconomic.

The city of Rio de Janeiro has also reproduced this model for nearly five decades. In 1969, the Barra da Tijuca Master Plan was implemented, prepared by urban planner Lucio Costa, the same author of the Brasília PP. Private activities were/are planned, expanded and encouraged within equipment sets, be it residential, corporate, commercial, etc. There was/is a great material distance, and, even more, a symbolic distance of public use. Walls, fences and security equipment have become the clear frontier that separates the universes of the city and the residential, corporate, commercial condominiums (shopping centers) etc.

Caldeira identified in the city of São Paulo - equally visible in many Brazilian cities - that segregations or enclosures are promoted through units equipped with cameras, fences and walls that distance social groups: "different social classes live closer to each other in some areas, but they are kept separated by

physical barriers and identification and control systems" (CALDEIRA, 2003, p.255). There is a "new" way of living that extends to working, buying, circulating and having fun:

*Closed condominiums are the residential version of a broader category of new urban developments that I call fortified enclaves. They are changing considerably the way people in the middle and upper classes live, consume, work and spend their leisure time. They are changing the panorama of the city, its pattern of spatial segregation and the character of public space and public interactions between classes. The fortified enclaves include sets of offices, shopping centers, and more and more other spaces that have been adapted to conform to this model, such as schools, hospitals, leisure centers and theme parks (CALDEIRA, 2003, p.258).*

Alexander, in the Architectural Forum magazine, in 1965, in the article "A city is not a tree", questioned the modernist rationalism regarding planned cities, in which abstract structures are found, opposed to the more "natural" forms - gradually constructed by the many interdisciplinary, multitemporal and multi-author layers. Bettencourt (2016, p.53), in reference to modernist urbanism, in a publication in honor of the 50th anniversary of this text by Alexander, commented with irony:

*I remember thinking about Alexander's arguments on a recent visit to Brasilia. I was in the "hotel sector" and had a commitment in the "banking sector". I was informed that pharmacies were found only in the "pharmacy sector" on the other side of the city, which in turn was distant from the "restaurant sector". Despite this, Brasilia since its conception "as a tree" has changed a lot. It is more "mixed", at least in terms of small businesses and services and this is a positive fact: it is being adapted to be a real city and to become less like a tree. I was happy to come across a new American-style shopping center near my hotel, which (in its own artificial way) contained most of the basic functions under one roof.*

There are also situations in which the materialization of situations of urban poverty (WRATTEN, 1995), as well as cultural, occurs through segregations such as ghettos, slums, etc. or, still, by the periphery of the settlements of the poorest sections of the population, from the precarious conditions of employment and transport or from the speculative valorization of urban land in central regions (HUGHES, 2004).

According to the World Cities Report (2016), in 1990, 689 million people lived in slums around the world. In 2000, there were 791 million and, in 2014, an estimated 881 million people are in this situation, which represents approximately 30% of the urban population in developing countries. This means that the marked socioeconomic differences are reflected in conformations that have different denominations, such as: *slums, tent cities, shanty towns, bidonvilles, baraccopoli, invasiones, colonias, barrios populares, barriadas, villas miseria, favelas* etc. They are unequal spaces in relation to the formal segments of the city, with a strong incompleteness of State policies and actions, especially with regard to infrastructure, building and normative standards, environmental vulnerability, the threat to human rights (SOUZA E SILVA et al., 2009). Social segregation, of course, creates tensions between formal parts and

marginalized stretches, subject to discrimination and socioeconomic conflict, in addition to favoring parallel power, social inertia and hopelessness.

### III. ECOTONES DUE TO SUDDEN URBAN TRANSFORMATIONS WITH SOCIOECONOMIC CONSEQUENCES

Possibly, still due to the inflexible modernist heritage, there is persistent difficulty in dealing with traces of the past, in dealing with architecture and urbanism. Doubtful social and environmental compatibility actions are carelessly established. Urban fabrics are frayed. Under nomenclatures such as “urban revitalization”, “urban restoration”, “urban regeneration”, among other showy expressions, in general, actions do not seem to reach their promises: “in the process of implementation, urban renewal often ignores its fundamental objectives and it even brings problems such as social exclusion, the weakening of social identity and the excessive search for profit” (YE, 2019).

Barbosa (2011, p.126-127), in severe criticism of the “global urban remodeling”, states:

*There are few surprises in the current resonance of the conceptions that define the city as a mosaic of fragments and its procession of selective urban interventions, oriented to the rescue - by the requalification of places - “of cultural memory”, of “ties of identity”, to “historical singularity”, in short, of “community life”, links considered indispensable to reconstitute civility, social peace, progress and, of course, to attract good business, technology and jobs. They are configured as diffuse and discontinuous tactics that radicalize socioeconomic inequalities and reveal, in their course of affirmation, their not so hidden purpose of promoting the global market for lifestyles, services and images.*

The so-called urban revitalizations, in the context of strategic planning, - in recurrent architectural and urban planning programs, - in port areas, old neighborhoods, spectacular cultural spaces, etc. remain, unmistakably, present in the last three or four decades, in the best style advocated by Baltimore or Boston. The fundamental issue, in the particular reference to urban ecotones, is that old, simple and popular settlements are often violently weakened by the proximity to business initiatives. In the boundaries between one universe and another, modalities of trade and service change, forms of transport are aligned with higher social or tourist extracts, urban parameters ignore pre-existence and cause exacerbated gentrification processes. Arantes (2000, p.14), ironically, questions:

Can identity-based (urban) policies be strategically planned? Something like calculating the spontaneous or deriving the integrity or authenticity from a rational choice - to speak like economists of methodological individualism, - which implies considerations such as cost/benefit, quality/price, etc.).

Finally, as in many coastal cities around the world, new operational standards in port areas have provided urban waterfront revitalization initiatives. In the city of Rio de Janeiro, for example, the Porto Maravilha Project aimed to create a new urban centrality through the idealization of museums, aquarium, hotels, corporate buildings etc. Its impact created an area of friction, an urban ecotone, in relation to the community of Morro da Conceição, rooted in the oldest urban fabric of the city. The new and showy uses in the so-called “Orla Conde” are incompatible with the historic low houses, the narrow and winding streets, the residential predominance and the countryside atmosphere. Thus, they damage the local daily life and chase away old tenants. There is an oversight with the history:

*The cultural relevance of Morro da Conceição must be respected, its ambience preserved and its population considered. Strong voices turn against the transformation of this community into a new Pelourinho, Salvador, BA, in which history was distorted (MIYAMOTO; ORIOLI, 2015).*

Recently, the city of Rio de Janeiro hosted the Pan American Games (2007), the FIFA World Cup (2014) and the Olympic and Paralympic Games (2016). There were severe criticisms of the way in which the process was conducted, which would have favored companies and areas of the city with a greater propensity to real estate valuation, harming less favored segments of the population, under the argument of the so-called Olympic legacy. Removals of precarious settlements, as in the emblematic case of Vila Autódromo, as well as other lesser-known ones, in addition to mobility works in wealthier areas of the city, took place at the pace that sporting events demanded - of the “blockbuster” type - and a high social cost, but considered unimportant (MENDONÇA; FAUSTINO, 2017). In an aggressive capitalist logic, which disregards the economic and social disparities of developing countries, conflicts intensify, other forms of urban ecotones are generated and the undesirable conditions of most of the population are perpetuated.

#### IV. ECOTONES DUE TO DE-TERRITORIALIZATIONS WITH CONSEQUENCES ON RE-TERRITORIALIZATIONS

As seen, the refugee issue, although recurring for more than 2,500 years, has reached a degree and scale that result in increasing de-territorializations/re-territorializations. There are those who run away, due to a situation of conflict or precariousness, and there are those who arrive and become part of another form of exclusion and discrimination. They are populations that live in ecotone scenarios, doubly, at opposite ends. A universe of more than 70 million people, according to UNHCR (2018, p.4).

The causes are many: socio-cultural differences and ethnic diversity that go beyond tolerance and manifest themselves through violence, political and religious persecution, armed conflicts, human rights violations, lack of food and medicine, lack of social services, etc. that reach countries in Africa, Latin America, Asia and the Middle East, mainly. Sassen (2016), in a publication on



refugees - A massive loss of habitat: New drivers for migration -, in which he analyzes in particular new migrations from: 1) Central America (Honduras, Salvador and Guatemala), 2) Myanmar and 3) Middle East (Syria, Iraq and Afghanistan) and Africa (Eritrea and Somalia) -, highlights that wars, devastated lands and evictions have produced "a vast loss of habitat for an increasing number of people":

*Extreme violence is one key factor explaining these migrations. But it is not the only one. I add a second key factor: thirty years of international development policies have left much land dead (because of mining, land grabs, plantation agriculture) and have expelled whole communities from their habitats. Moving to the slums of large cities, or, for those who can afford it, migration, has increasingly become the last option. (SASSEN, 2016).*

If, in their original lands, tension between peoples is already brutally present, displacement to other regions or even countries, in general, is not a simple option. Confinement in refugee camps on arrival is temporary. In general, in these places, there is discomfort, overcrowding and disease vectors. The next destination is, predominantly, cities. New forms of oppression and fear appear in segregated environments, often represented by ghettos. Thus, other clashes are formed:

*Unlike a [refugee] camp, cities allow refugees to live autonomously and find employment or economic opportunities. But there are also dangers, risks and challenges. Refugees may be vulnerable to exploitation, arrest or detention, and can be forced to compete with the poorest local workers for the worst jobs (UNHCR, 2018, p.57).*

In Tel Aviv, for example, 40,000 refugees from Eritrea and Sudan since 2005, with migration peaks between 2009 and 2012, have no rights, except the guarantee that they will not be deported. Possible employers of migrants from these countries are discouraged from hiring them. If they do, they are forced to pay extra fees. There is also a strong indisposition among the local population:

*The South Tel Aviv neighborhoods where asylum seekers reside, including HaTikva, Shapira, and Neve Sha'anani, are low-income areas with high crime rates. In these neighborhoods, historically populated by immigrant communities of a low socioeconomic status, certain locals have accused Eritreans and Sudanese of theft, rape, and illegal drug usage, and generally display negative attitudes towards the presence of so-called "infiltrators." (HAROUN; WALKER, 2019).*

To a greater or lesser extent, discrimination and segregation suffered by refugees is recurrent in the different countries that receive them. Tanzania's largest city, Dar es Salaam, has been welcoming thousands of people for years, mainly from the eight countries bordering its territory, in particular Burundi, Rwanda and the Democratic Republic of Congo. The country has always exercised a hospitable tradition in relation to refugees, however, due to urban pressures, caused by the dizzying population growth and the limitations of infrastructure (residence, transport, water, sanitation, etc.), immigrants have been compelled to live in degrading situations and be exploited by increasing rents, in an environment of discrimination:

*They must live in areas with poor environmental conditions (...).Common complaints included flooding and odor pollution from being located [in areas] close to dumping sites. Some refugees reported experiencing discrimination, which resulted in the tenants either being forced to leave the premises (...)* (O'LOGHLEN; BWAMI, 2018).

Situations like these are common in many cities or regions like Beirut (Lebanon), Cairo (Egypt), Cape Town (South Africa), Delhi (India) and many others around the world. Cultural and socio-economic shocks mix with ethnic, religious, sexual and political identities and/or inclinations, and reinforce oppression, shock, disgust and fear. Ghettos are created that prevent coexistence and fragment cities and, therefore, feelings.

## FINAL CONSIDERATIONS

This work is intended to be conclusive in its proposal for classifications of ecotones. As seen, the complexity of the expression "territory" is great and, despite some consensus, such as, for example: the expression of power, the place of social production linked to political, cultural and/or economic aspects, the (territorial) limits etc., it must be recognized that there are visible and invisible aspects that impact urban relations in their material and immaterial nuances. Therefore, they are not always predictable or easily identifiable. Cities have long been understood as open, unstable and dynamic ecosystems. The proximity of coexistence exacerbates the differences and results in tension, in different socio-cultural and biophysical contexts.

The proposition of some typical classifications in relation to urban ecotones is just an original initiative to present situations and give names to certain conflicting relationships. It modestly aims to systematize scientific knowledge, in order to make it rigorous and didactic.

Three decades ago, Guattari, in his book "The Three Ecologies", warned that "natural balances will depend on human interventions". In addition, when using the expression "mecosphere", it referred to a context of technology or machines, - tensely referred to as "war machines", - but also to the gears of a system that involve (several) issues: environmental, social, cultural, political, psychological, etc. Today, the inequalities and tensions of the contemporary world demand new interpretations for disciplinary fields directly related to identity, security, power and social and individual freedom: "an economy of profit and power relations can, at the moment, only lead to dramatic impasses" (GUATTARI, 1990, p.9). It is essential to highlight the worrying indifference with the direction of the environment and the shameful socioeconomic gaps that have made billions of people vulnerable all over the world. The COVID-19 pandemic in Brazil made the millions of "invisible" visible to official eyes. It demonstrated that digital access for remote professional and academic activities is a privilege for relatively few, as well as access to fundamental services, such as doctors, or daily services, such as home delivery, for example. Many social

segments, normally already under pressure or threatened, suffered even more during the crisis: the elderly, people with disabilities, indigenous peoples, LGBT communities, black people, unemployed, children, etc. Xenophobia has reached planetary proportions. Tensioning situations, in a globalized, strongly anchored and manipulated by networks world, become more frequent, comprehensive and diversified, demanding new strategies: “This revolution must therefore concern not only the relations of forces visible on a large scale but also the molecular domains of sensitivity, intelligence and desire” (Ibid., p.9).

Certainly, many other classifications of ecotones may (and should) arise from the ecosystem dynamics associated with cities, but, above all, it is necessary to pay attention to the intolerance, prejudice and social injustice that has impregnated the planet and resulted in conflicts of a predominantly urban nature, materialized in urban ecotones.

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