Ecotouristic Networks and Semiosphere: An analysis of the Route of Emotions (RE) from the systemic perspective of Yuri Lotman

Redes ecoturísticas e semiosfera: Uma análise da Rota das Emoções (RE) na perspectiva sistémica de Yuri Lotman

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Abstract | This study analyzes the Route of Emotions (RE) applying Yuri Lotman's semiosphere concept. The RE is an area of approximately 600 km in length, delimited from the North Coast and Chapada de Ibiapaba, in the State of Ceará, from the Coastal Plain and Mid-North of Cocais, in the State of Piauí, and from Chapadinha and Rosário, in the State of Maranhão. Within this perimeter are the Jericoacora National Park, Ceará, the Parnaíba Delta Environmental Protection Area, Piauí and the Lençóis Maranhenses National Park, Maranhão. In all, there are 14 municipalities that form the route, as follows: Barreirinhas, Paulino Neves, Tutóia, Santo Amaro and Araióses (Maranhão); Parnaíba, Ilha Grande, Cajueiro da Praia and Luís Correa (Piauí) and Chaval, Barroquinha, Camocim, Cruz and Jijoca from Jericoacoara (Ceará). The methodology consisted of a literature review using a qualitative approach. Data were collected through non-participant observation. It was concluded that the relationship structure of the semiosphere is complex, with greater permeability in the external borders, leading to the peripheralization of its geographical center. Communication is most active between the nucleus, spatially dispersed at the extremities. As they move to the periphery, communication weakens. The poles maintain dextrohemispheric tendencies and the peripheries, sinister-hemispheric, which justifies greater capacity of creation of the poles. The challenge is to integrate the semiosphere subsystems.

Keywords | Semiosphere, Route of Emotions, ecotourism networks, Yuri Lotman, Brazil

Resumo | Este estudo analisa a Rota das Emoções (RE) sob a abordagem do conceito de semiosfera de Yuri Lotman. A RE é uma área com aproximadamente 600 km de extensão, delimitada a partir do Litoral Norte e Chapada de Ibiapaba, no Estado do Ceará, da Planície Litorânea e Meio-Norte dos Cocais, no Estado do Piauí e de Chapadinha e Rosário, no Estado do Maranhão. Neste perímetro encontram-se o

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Parque Nacional de Jericoacora, Ceará, a Área de Proteção Ambiental do Delta do Parnaíba, Piauí e o Parque Nacional dos Lençóis Maranhenses, Maranhão. Ao todo são 14 municípios que formam a rota, sendo: Barreirinhas, Paulino Neves, Tutóia, Santo Amaro e Araióses (Maranhão); Parnaíba, Ilha Grande, Cajueiro da Praia e Luís Correa (Piauí) e Chaval, Barroquinha, Camocim, Cruz e Jijoca de Jericoacoara (Ceará). A metodologia constituiu-se de uma revisão bibliográfica, com abordagem qualitativa. Os dados foram coletados por meio de observação não participante. Concluiu-se que a estrutura de relações da semiosfera é complexa, com maior permeabilidade nas fronteiras externas, levando à periferização do seu centro geográfico. A comunicação é mais ativa entre os núcleos, espacialmente dispersos nas extremidades. À medida que se dirige para a periferia, a comunicação enfraquece. Os polos mantêm tendências dextrohemisféricas e as periferias, sinistrohemisféricas, o que justifica maior capacidade de criação dos polos. O desafio é integrar os subsistemas da semiosfera.

Palavras-chave | Semiosfera, Rota das Emoções, redes ecoturísticas, Yuri Lotman, Brasil

1. Introduction

Ecotourism is a booming economic activity that contributes to the development of an isolated or low-density tourism destination, with clear positive impacts at environmental, social, and economic levels. Despite this, many researchers draw attention to negative impacts that may occur, such as the loss of environmental quality and homogenization of culture (Las Heras, 1999; Lindberg, 2001; Su et al., 2014; Duan & Wen, 2017; Ma et al., 2019).

One of the strategies that many tourist destinations have implemented for their development and competitiveness in recent decades, has been the formation of tourist networks at the destination and between destinations within a region (Beritelli, 2011; Aureli & Forlani, 2015; Jesus & Franco, 2016; Brandão et al., 2018; Brandão et al., 2019). These networks are delimited by physical and cultural boundaries and can be analyzed from the perspective of the semiosphere, proposed by Lotman (1996).

The RE emerged with the intention of the governors of the states of Ceará (CE), Piauí (PI) and Maranhão (MA) to develop integrated and sustainable tourism to improve the quality of life of the population. The public consortium of the Middle North was established on 14.04.2007, through a protocol of intentions.

In February 2008, the Ministry of Tourism established the Sustainable Regional Development Agency (ADRS), with the executive function of integrating the route. It was the first interstate public consortium for the integrated development of tourism in Brazil. Soon after, the Integrated Itinerary Tourism Business Association (AETRI) was created. These two organizations are the central administrative actors of the semiosphere, composed of fourteen municipalities. The route was renamed the RE Jeri-Delta-Lençóis. AETRI itself was renamed the Tourism Business Association of the RE (AETRE).

The initial challenge was to overcome cultural differences and the different stages of tourism development without losing the identity of the destinations. Other challenges are to consolidate the external image of the integrated route, as well as to strengthen the internal relations between the business community, the public sector and society. Regarding the strengthening of internal relations, the most important analysis in this semiosphere is to identify its borders, homogeneity and irregularity, the pattern of communication, regulations and the depth of memories.

The objective of this study is to analyze the

RE in the systemic perspective of Yuri Lotman's semiotics, highlighting culture as a critical factor for the successful integration (Presenza & Cipollina, 2010). This understanding enables a better flow between the internal and external limits of the network, allowing each location to be included in the results of tourism activity with its own dynamics, without losing the systemic view.

Figure 1 | Map of RE
Source: www.rotadasemocoes.com.br

2. Tourism networks

Baggio et al. (2010, p. 803) stressed that "tourist destinations are considered complex systems, represented as a network by the enumeration of the stakeholders that compose it and the connections that connect them". For Van der Zee and Vanneste (2015, p. 53), in their bibliometric analysis, tourist networks "are a set of interrelations among those interested in tourism." For them, the performance of the tourist destination structured in a network depends on the connections and how they are processed.

For Presenza and Cipollina (2010, p. 28), it is important to investigate social and cultural aspects, delving deeper into the context of the relationships between the actors, reaching the dynamics associated with "the strategies of the actors, rules of conduct, levels of institutionalization and power relations." (Saxena, 2005), points out that the stronger the interaction between the actors, the greater their ability to modify their practices to adapt to market demands, that is, the learning dynamics occurs through the nature of relationships. Costa (1996) and Brandão et al. (2018) argued that the integration of an organization into a network can contribute to increase its productivity and ability to innovate and compete globally. Costa (1996) also said that organizations that occupy a more peripheral position in the tourism sector can benefit from greater visibility and funding when they become networked.

Beritelli (2011) considers that the choices of actors in cooperation can be influenced by individual and local culture. The author found formal and informal actions in these cooperation structures. One of the strongly influencing attributes of successful cooperation is communication.

3. Semiosphere and tourism networks

Yuri Lotman (1996) analyzed culture from a systemic perspective of semiotics. For him, the whole is greater than the mere sum of the parts. Networks are also connected actors (Baggio et al., 2010; Van der Zee & Vanneste, 2015) who cooperate within a complex system, bounded by permeable borders, which filter information from the outside in.

For Lotman (1996), the semiosphere is the space in which the communication processes are made possible through modeling, whose most im-

portant property is the character delimited by borders, which separate the semiotic space from the extrasemiotic and identify the homogeneity and individuality of the system. The borders act as a permeable structure that filter the external texts and translate them into the internal language and vice versa, generating information. This process is semiotization. In this perspective, Brito and Baptista (2021), when analyzing the maritime semiosphere of cruises, identified different cultures that intertwine, with multicultural teams impacted by the individual or collective preferences of guests. Functional boundaries separate the semiotic space from the cruise from the extrasemiotic one. Homogeneity is achieved through the use of a common language, in this case, English, but without erasing traces of irregularity in the semiosphere.

Other properties are irregularity, isoformism, interconnection, internal regulation, and diachronic depth. The irregularity is inherent in the semiosphere and is provided by the structural formation of the nucleus and the periphery with a diversity of texts. Even if there is irregular isoformism within and between some subsemiospheres, when texts are observed in isolation. To produce new texts to take place, there must be interconnection between the parts. It is not a simple transmission, but an interconnection capable of generating texts from differences. All these elements are regulated internally, although they look very different. This is because there is an interconnection and a functional link capable of generating dialogues and texts. In this generation of new texts, diachronic depth is fundamental to the semiosphere, which is the memory of old texts. Without this memory, the semiosphere could not work (Lotman, 1996).

Leão (2020, p. 173), when analyzing the University of Porto and the Municipality of Porto as semiospheres, points out that the "potential for diversity of supply, through possible complementarities between these systems, contributes to the sustainable competitiveness of the destination." This is possible because there are borders and even with

their own identities, they maintain the semiotic interconnection between the substructures, forming the conduct of the semiosphere. In the interconnections, it is possible to identify the degree of isoformism and communication, which allow consensus, maintenance, or creation of new texts. The author points out that the substructures closer to the center are more homogeneous and, as they fall apart, the degree of homogeneity decreases.

Parasecoli (2011, pp. 660-661) analyzed the semiosphere of food as intercultural communication in tourism. For him "tourists participate in these semiosis processes from a position of power, by their own choice, negotiating their bodily involvement according to their needs and desires." These systems are confronted in destinations, with their borders, languages, signs, unknown food practices, aromas, cooking techniques, etc. Communication between individuals from different semiospheres promotes involvement with otherness.

For Hartley (2016, p. 72), when analyzing the creative industry and the clash of systems in cities, it portrays that the rhetoric of opposites present in Lotman's model is not critically used to resolve conflicts or understand how they can be productive inside a semiosphere. Economic efficiency and environmental efficiency can be integrated into the concept of eco-efficiency and generate a new semiosis in ecotourism destinations. The creation of environmental protection areas and restrictions on the use of these areas in the practice of ecotourism are intense contexts for clashes of interests, especially in the complexity of a route with 14 municipalities in 3 different states. Understanding communication, language, symbols, identity and everything that is produced by the human mind between the limits of RE is fundamental for its sustainable development. This is what Lotman calls "intrasystem dialogue".

Cheregi (1989), analyzing Romania's national brand as a semiosphere, highlighted the importance of understanding the symbols defined by Romania as its brand, what they communicated to in-

ternal and external audiences, such as translation it was made beyond the borders of the semiosphere. On the periphery was the "semiotic world of the public, who will decode the advertising message according to their own social experiences".

4. Methodology

The methodology consists of a bibliographic review of topics related to tourism networks and semiosphere, using the databases Scopus and Google Scholar. This review started from the content of the Tourism and Culture discipline, between March and May 2019 and ended in April 2020. The approach was qualitative with the intention to describe and explain the semiosphere concept, analyzing the elements proposed by Lotman, (1996), confronting them with the reality about RE. Data were collected through document reviews, internet search and non-participant observation (Marconi & Lakatos, 2002), during 4 trips to the RE, between 2009 and 2019. The first observation was unsystematic, with the objective of getting to know the RE. The other observations were systematic, based on the notes made during the first trip. Some of these observations were recorded through photographs, travel diaries, and conversations with businessmen and residents along the route. For Gil (2008, p. 100), "the observation has the main advantage, in relation to other techniques, that facts are perceived directly, without any intermediation". Data were processed using content analysis of images

and diaries and confronting the texts of Yuri Lotman.

5. Results and discussion

5.1 Delimited Character

The RE borders have a particular set of languages, printing collective identity while identifying the degree of homogeneity and individuality between destinations. The geographical boundary starts at the limits of the District of Jericoacoara (CE) until the Municipality of Barreirinhas (MA). In this space, many texts are homogeneous, as they are part of the Northeast Region. One of these texts is the "pride of being from the Northeast". This feeling creates a convergence between people and a specific identity for the region. At the meso level, the three states have their heterogeneities. The same applies at the micro level among the fourteen municipalities in each state, even with some regularities. Cultural texts such as legends, popular events, dances, gastronomy, accents, and music styles are distinct between destinations (Ceará, PiauíandMaranhão). Different texts and signs communicate the boundaries of thesubsemiospheres, such as the boats, which in Ceará are the rafts, different from those observed in Piauí and Maranhão. The borders of Jericoacoara enabled the semiotization of national and international texts with greater advance and speed, generating deeper transformations in the internal language.

Figure 2 | Typical vessels from Maranhão, Piauí and Ceará, respectively
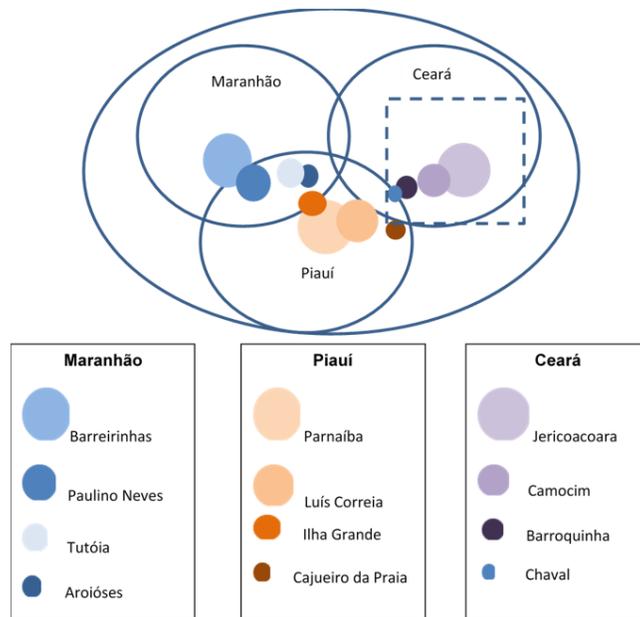Source: Own elaboration

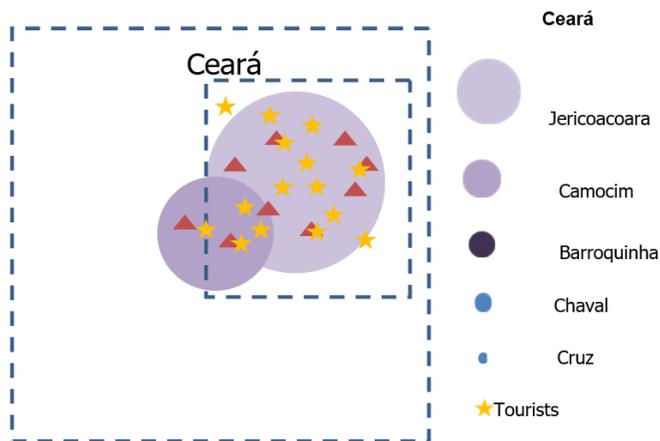**Figure 3** | Boundaries of the RE semiosphere
Source: Own elaboration

Figure 4 | Boundaries of the Ceara subsemiosphere
Source: Own elaboration

Regarding the boundaries of the Ceará subsemiosphere, Jericoacoara is central nucleus of text production and acts in isolation from Barroquinha and Chaval. It has more open borders and exchange system with Camocim because it is closer, being almost an extension of vegetation and the beach. Jericoacoara has a different tourist culture that shaped the habits of the quiet village. Traditional dishes have been redesigned by chefs,

handicrafts have gained innovative design and added value, while the old forró (typical music of the region) has given way to electronic music and DJs (one of Brazil's hottest New Year's Eve in Jericoacoara). Bartering for fish at the end of the day, showcases another tourist activity for sightseeing. Soon, the artisanal fishery will only become a memory.
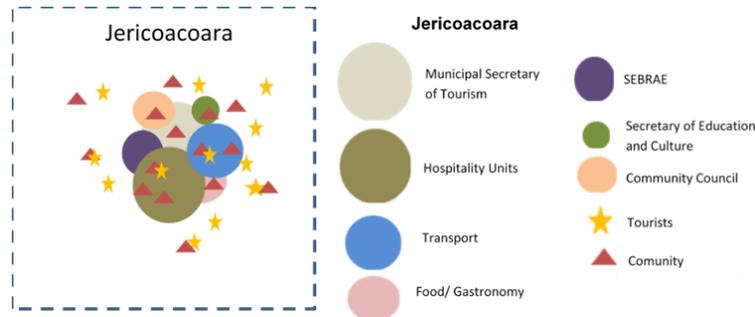
Figure 5 | Jericoacora Semiosphere
Source: Own elaboration

The geographic boundaries of the Jericoacoara subsemiosphere are legally defined. The Municipal Secretary of Tourism, a public agency, governs and manages the site in the area of tourism. Among tourist companies, there is no formalized hierarchy, it is established from economic power and information flow. It is the most competitive subsemiosphere of RE, although it has many challenges as indicated by the Tourism Competitiveness Report (2015) of the Brazilian Ministry of Tourism.

5.2. Semiotic irregularity

ADRS and AETRE constitute the administrative and normative nucleus of the RE semiosphere. They are responsible for managing the route, defining the practices and functions of the companies, translating the non-consonant technical norms and standards for the business actors of the route. The internal rules defined by ADRS, in a participatory way, in the phase of formalizing the route, enabled business actors to act, at least, in a synergistic way, to sustain the collective identity of the RE. The center-and-periphery relationships of this semiosphere are strongly impacted by the irregularity between business actors, regarding to technical training and knowledge about tourism. Peripheral business actors do not have enough knowledge and training to manage their businesses. They do it in an amateur way, motivated by the need for survi-

val and the opportunity to offer their services or products to tourists.

A visible irregularity is in relation to the text quality of the tourist product. The Jericoacoara, Parnaíba and Barreirinhascenters are asymmetrical in relation to the peripheries, mainly in the provision of lodging and catering facilities, either due to the difficulty of access to training or even because they do not realize the importance of qualification for the activity. The most regular nucleus in this text is Jericoacoara.

Another irregularity identified was in relation to the concept and practice of sustainable development. Entrepreneurs, managers of environmental protection areas, environmentalists, citizens of traditional communities and tourists have different languages and interpretations, generating conflicts of interest in relation to the use of nature. The route's self-description is under development and perhaps a metalanguage could describe it in the future as an integrated context and with a collective identity. Among the entrepreneurs, many are tourists who decided to stay and became entrepreneurs, with a totally different culture, as in Jericoacoara, where many foreigners and Brazilians from outside the region have tourism companies. Although they share the same space, culturally they do not have the same feeling about it.

Irregular are also the memories resulting from the generation differences. For the elderly, especially in Jericoacoara, it is common to hear nostalgic

memories when it was still a peaceful fishing village. For some time, at the beginning of the tourist activity, the village was more homogeneous, without many external texts, because the number of visitors was small. Traditions were passed from fathers to sons and changes were slower. The increase in tourism, due to the destination's internationalization, generated strong competition, accelerating the changes. The borders opened and the outside introduced another,more complex language. Fishermen's children are no longer fishermen, nor do they belong to the culture of outsiders. In this context, the subsemiospheres on the periphery are less irregular.
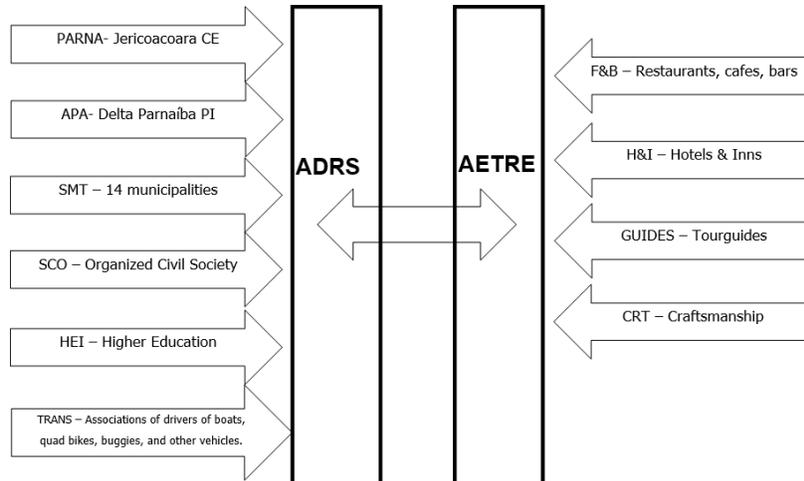

Figure 6 | Administrative Center of the RE Semiosphere
Source: Own elaboration

5.3. Semiotic isomorphism

Essentially, every semiosphere is asymmetric. If the substructures of this semiosphere are isolated, they are not isomorphic, as each has its individuality and heterogeneity. However, if they are seen as a whole in relation to another semiosphere, they become isomorphic to a third element. ForLotman (1996, p.18), "in the total semiotic mechanism, the isolated text is isomorphic from certain points of view". The identification of this isoformism makes it possible to have consensus for the positioning of RE in the competitive tourist market.

In isolation, the hospitality sector between subsemiospheres does not have the same level of environmental management and does not meet the same quality standards, but when it seeks partnerships outside the region, it becomes isomorphic for external financing agencies. This isoformism is noticeable through the interconnections between the actors. Semiotic isoformism contributes to the integration of networking, mainly to achieve the sustainability of tourism in the region. Lotman (1996) argues that what is behind this logic is the capacity that systems have to exchange information. In general, the subsemiospheres of the RE can exchange information with each other, because there is a consensus, which converges to the main objective, which is the sustainable development of the region. The largest volume of information comes from the Jericoacoara, Parnaíba and Barreirinhas nucleus. Formal information originates in Parnaíba, as it is the headquarters of ADRS and AETRE. This information is absorbed at different times and levels in each subsemiosphere.

5.4 Interconnection

According to Lotman (1996, pp.17-19), "the internal diversity of the semiosphere presupposes its integrity"and "the different substructures of the semiosphere are linked in an interaction and cannot function without supporting each other". This integrity is possible because the internal structures are joined by a complex system of relationships with a high degree of deautomatization, making it possible, in relation to the whole, in identifying the structural isoformism of the semiosphere, even though it is heterogeneous in its substructures. In the similarities, they find consensus and, in the differences, production of new texts.

Among the agents of ADRS, AETRE, the public and cultural sectors, associations and entrepreneurs, there is a formal relationship arising from the RE structure itself. Meetings and communications are regular in addressing strategies, fundraising, performance standards and correcting directions, strengthening the culture of integration in the region around sustainable tourism. Despite this formal relationship between the actors, there are other factors that bring them together, strengthening relationships and bonds in a true interconnection beyond functionalism, such as, for example, being from the same sector (hospitality) and having the same level of training (higher education), mainly in the areas of tourism, management, hospitality, and the environment.

The interconnection in the RE seems to occur with more ease and speed between more isomorphic substructures, in relation to the less isomorphic ones. The principle of economics can explain this fact. It is easier to communicate with peers. For other subsystems with a greater isomorphic distance, generally a business leader or community leader bridges the central structure and the periphery of the semiosphere, at a different time and speed in relation to the nucleus. The network seems to disintegrate as it goes to the periphery. The actors have a higher degree of integration within the semiosphere nucleus than between these and other structurally peripheral subsystems.

5.5. Internal Regulation

The semiosphere has a structure since it presents an internal organization with central and peripheral elements related in the production of different texts. For there to be an internal organization, the semiosphere must have regulations that lead to this order. These regulations allow the alternation of cultures within bihemispheric parallelism. When one culture is inhibited, another develops. This is because of course individual consciousness, with creative (right hemisphere) and rational (left hemisphere) characteristics, that encounters a polyglot mechanism transmitting extrasemiospherecontent into the semiosphere. When this new content is translated and assimilated with a high link with external reality, simple and practical interpretation of memory content, there is a dextrohemispheric tendency. When there is no link with external reality, closing in on intrasemiospheric texts and looking for new ways in isolation, there is a sinister-hemispheric tendency (Lotman, 1996).

The RE is characterized by the predominance of the dextro-hemispheric trend towards the world, mainly in Jericoacoara, Barreirinhas and Parnaíba, respectively, where the flow of tourists is greater, especially Jericoacoara, with new craft creations with external meanings, that penetrated the borders of the semiosphere, were translated by buffers and assimilated in workshops given by the public power to the local population. In Barreirinhas, buffers are also designers who make workshops with the artisans, translating the contents and transforming the semiosphere. Formerly, crochet crafts played a functional role (tablecloth, appliance covers and rugs). They are currently used as fashion accessories. Tourism stimulated new creative texts

in the twelve tourist destinations, drawn more clearly in Jericoacoara and Barreirinhas. The integration of these destinations in a tourist network, from 2007, accelerated this creation along the entire route, with more formal regulations.

Figure 7 | Crochet Crafts- Jericoacoara
Source: http://associaodascrocheteirasmundojeri.blogspot.com

5.6. Diachronic Depth

Lotman (1996, p. 58) believes that "culture is interactive and brings other worlds to its center". Between the discovery of Jericoacoara in the early 1980s and the frenetic expansion of tourism in the late 1980s, after the Washington Post Magazine elected it as one of the ten most beautiful beaches in the world, changes and text readings were accelerated, generating a new cultural context from tourism. Until 1998, the Jericoacora Village had no electricity. Since 2002, the dune region has been declared an Environmental Protection Area, with many restrictions for tourists and the local population. This great semiosphere today contains texts from the residents of the once-quiet village, the children and grandchildren who already have memories of a new village, the tourists who passed through it and those who decided to stay. All these actors have different meanings in relation to the place. This plurality of texts generated an elliptical movement of new texts. Some individuals of these subgroups had the competence to read and translate, emerging as leaders among these subgroups that gave rise to another volume of memory, already different from the existing ones.

Figure 8 | Jeri Village 1984 and 2015
Source: Left photo – https:/jeribaiadastartarugas / Right photo - Conselho Comunitário de Jericoacoara

In this process, it was inevitable that the culture of the fishing village would change and gain new contours, from the translation of new signs for people who left large centers to live with the villagers. This creative and dynamic space allowed interactions of diverse semiotic systems, generating an internal non-uniformity, called by Lotman (1996) as cultural and semiotic polyglotism.

From Lotman's concept of collective memory, it can be understood that Jericoacora Village gained new meanings, changing some texts of its collective memory and completely losing others. Some by the very strength of the new signs and others by legal, environmental and social pressures. This social phenomenon was observed with less intensity in the periphery of the semiosphere.

The diachronic depth since tourism started in the region is clear. The predominant language was a language of simple symbols expressing the necessities of survival. The villages were fishermen, and it was mainly Jericoacoara. Today, new information such as sophisticated design, new lifestyles concepts, chefs, architects, and interior designers have introduced new languages and symbols. At first there was a resistance from traditional communities. Today, the sons of fishermen are no longer fishermen, nor do they belong to this new synthesis. Many are in unqualified operational positions or on the fringes of development. It is common to hear nostalgically from the elders' stories of Jericoacoara when it was a quiet fishing village. There is a sharp depth between what was before and what is now. This depth deterritorializes older people who lived on traditional activities such as fishing. Today, they survive by selling handicrafts, food on the street, providing services to tourists, informally or are retired.

The panchronic character is visible across generations. Many activities are ceasing to exist due to tourism. It no longer makes sense to be a fisherman or have a flour house for the fishermen's children and grandchildren. The gap is large for some communities, most notably in Jericoacoara, culminating in a break in the cultural creation of older people's habits. It is also clear in relation to popular events that give space for sophisticated parties, especially holidays and New Year, with electronic music and DJs, suppressing the traditional popular manifestations. Some manifestations are more for tourism purpose than original cultural expression.

Some enterprises manage to preserve techniques, past signs from the fishing village to contemporary reading, with interesting results for a new synthesis. Examples are some lodging-house and restaurants, as you can see in figure 9.

Lotman (1996, p.20) clarifies this process well when he says that "the semiosphere has a diachronic depth, since it is endowed with a complex system memory and without that memory it cannot function. Memory mechanisms exist not only in some semiotic substructures, but also in the semiosphere as a whole". For Tinsley and Lynch (2001), networks "are not tied to the present, as the past will have an influence on current networks, and this will be followed in the future". Jericoacoara has left behind many forgotten texts, while creating new ones.

Figure 9 | Pousada Vila Kalango e Rancho do Peixe
Pousada Vila Kalango and Vila do Peixewebsite

6. Final Considerations

The article discussed the main concepts of the semiosphere, in Lotman's perspective, as a way of broadening the understanding of the dynamics and network structure of tourist destinations. Concepts such as semiosphere, frontier, identity, memory, texts, translation, and interconnection are necessary to think of the tourist network in a qualitative approach with the metaphor of culture. Understanding the complexity of culture through semiotics can shed light on the relationships of the network.

In the semiosphere under analysis, the Jericoacoara and Barreirinhas subsemiospheres geographically delimit the semiosphere while they assume the role of active transformation nucleus. Changes appear at the borders and are transferred to the peripheral subsemiospheres of the route. New texts and dialogues arrive through tourists, researchers, businessmen and NGOs. They are translated and internalized in the semiosphere through dialogues with the local population, promoting significant changes. The Paulino Neves, Araioses and Tutóia subsemiospheres, in Maranhão, Chaval, Barroquinha and Camocim, in Ceará are spatially more

central in the semiosphere, however, they are their periphery in terms of the production of new texts. The emergence of new texts in the nucleus does not have the same impact on the peripheral subsemiospheres because communication is fragmented and incipient. The Ilha Grande, Luís Correia and Cajueiro da Praia subsemiospheres, in Piauí, are more dependent on the Parnaíba administrative and political nucleus and are more isolated from the other subsemiospheres. In networks, this concept is that of centrality. According to Brandão et al. (2018), these central nodes are responsible for the development of conditions for innovations to occur in a tourist destination.

The Parnaíba subsemiosphere is the political and administrative nucleus of the semiosphere, home to the ADRS and AETRE. Communication and integration with other subsystems take place through meetings and technical visits by agents. These units maintain contacts with the extrasemiospherical environment, such as State Secretariats of Tourism and the Ministry of Tourism, in the case of ADRS and with business partners from other semiospheres, to exchange experiences and know-how, in the case of AETRE.

The challenge for this semiosphere is to inte-

grate the peripheral subsemiospheres with the dynamics of the centers that create new texts, in addition to bringing Jericoacoara and Barreirinhas together, at the extremities, which sometimes conflict with each other. These conflicts have already led the poles to act as isolated destinations. For example, a conflict that still seems not to have been fully resolved is the name of the Jeri - Delta - Lençóis Route. Barreirinhas defends that Lençóis should be the beginning the name of the route and not Jeri, so the name should be Lençóis - Delta - Jeri.

In relation to internal regulation, the nucleus of Jericoacoara and Barreirinhas show dextrohemispheric tendencies, as they are more concerned with the limits of the extrasemiosphere. These nuclei undergo constant changes, creating new texts and languages. Often, these creations do not leave Jericoacoara and Barreirinhas. The subsemiospheres of the periphery are little impacted by innovations from the nucleus with sinister-hemispheric tendencies, remaining culturally more stable, with semiotic models closed in themselves, using memory. There seems to be a semiotic delay, which can take these subsystems to a different meaning than that interpreted by the nucleus. This delay may explain the pause in the creation of a sustainable tourism culture on the periphery of the semiosphere. While in the geographic periphery of the semiosphere there is a cultural explosion, with innovations in handicrafts and in business models and processes, its center geographically, in the interior, coexists with ancient and amateur practices. As Brandão et al. (2018) point out, when analyzing tourist networks in Portugal, small networks with few external connections, even with a lot of internal interaction and cohesion between the actors, can restrict innovation due to the lack of diversity and network relationship.

Semiosphere analysis is a relevant tool for understanding intra and extrasemiosphere relationships. The greater the understanding of the cultural pattern between the different actors and subsystems, the more understanding one will have of their connections. In this case under consideration, the cultural factor can be critical to the success of integration and the generation of a new context that establishes the bases for the development of sustainable tourism, rooted in cooperation, as Czernek (2013, p. 99) points out, when identifying culture as one of the determining factors of tourism cooperation in a Polish destination. The willingness to cooperate depends not only on rational cost and benefit calculations from an economic point of view, but also on social and cultural factors. For him, the New Institutional Economy (NIE) would better explain cooperation in a tourist destination, when it says that "a person's rationality is rooted in the social, historical and cultural context". Formal institutions (ADRS, AETRE, Tourist Offices, etc.) define political and economic functioning rules, while informal institutions (values, traditions, customs, culture, etc.), relationship rules, which, in Lotman's perspective, would result in interconnections semiotics.

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