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Mappings: Cartographies for the complexity of the contemporary maritime landscape

Abstract

This article proposes an analysis on cartography for the complexity of contemporary landscapes in maritime horizons. By discussing a concept of landscape from Jean-Marc Besse in *Voir la Terre. Six essais sur le paysage et la géographie* (2006), the landscape is comprehended as a desire to see, as an image of subjectivities in the relationship between man-territory, as a support and matter for existence and as an emotional, biological, political and symbolic place. Subsequently, it is presented a consideration on Cartography through a brief analysis of its historical process, trough the synthesis it performs as well as its geographic, political, social, cultural and symbolic complexity. As following, we observe the cartographic project "*The Poveiro Sea*" and "*their Maritime Backyard*" (2020) by José Pedro Fernandes as a visibility tool, where the author approaches the cartographic exercise trough the observation of location methods and by mapping empirical procedures developed by a group of fishermen from Póvoa do Varzim. We conclude this analysis with the work *A Maritime Portrait of Ílhavo* (2021) that was commissioned by the Municipality of Ílhavo to the University of Minho, developed by the architect André Tavares who created a series of maps that synthesize the landscape changes at the Port of Barra within the last 100 years, exposing the territorial alterations trough the ocean's point of view. With this text, we intend to propose a support analysis with the further objective of organizing a series of cartographies for the biogeographic landscape of Ílhavo, a municipality culturally and historically connected to maritime activities.

Keywords

Cartography; Contemporary Mapping; Design and Arts; Landscape; Maritime Horizon.

Mapeos: Cartografías para la complejidad del paisaje marítimo contemporáneo

Resumen

Este artículo propone un análisis sobre la cartografía de la complejidad de los paisajes contemporáneos en horizontes marítimos. Presenta un concepto de paisaje de Jean-Marc Besse en *Voir la Terre. Six essais sur le paysage et la géographie* (2006), donde el paisaje se comprende como un deseo de ver, como imagen de subjetividades en la relación hombre-territorio, como soporte y materia para la existencia y como elemento emocional, biológico, político, y lugar simbólico. Adelante, se presenta una consideración sobre Cartografía desde un breve análisis de su proceso histórico, a través de la síntesis que realiza, así como de su complejidad geográfica, política, social, cultural y simbólica. Después, es observado como herramienta de visibilidad en el proyecto "*The Poveiro Sea*" and "*their Maritime Backyard*" (2020) de José Pedro Fernandes, donde el autor aborda el ejercicio cartográfico mediante la observación de métodos de localización y de mapeo de procedimientos empíricos desarrollados por un grupo de pescadores de Póvoa do Varzim. Concluimos este análisis con la obra *Un retrato marítimo de*

Ílhavo (2021) que fue encargada por el Ayuntamiento de Ílhavo a la Universidad de Minho, desarrollada por el arquitecto André Tavares que realizó una serie de mapas que sintetizan los cambios paisajísticos en el Porto da Barra en los últimos 100 años, exponiendo las alteraciones territoriales desde el punto de vista del océano. Con este texto pretendemos proponer un análisis de apoyo con el objetivo adicional de organizar una serie de cartografías para el paisaje biogeográfico de Ílhavo, un municipio cultural e históricamente ligado a la actividad marítima.

Palabras Clave

Cartografía; Cartografía contemporánea; Diseño y Artes; Paisaje; Horizonte Marítimo.

1. Introduction

This article presents a reason on the landscape as a platform for understanding the territory and matter for the development of maps for contemporary complexity. The issues raised in the essay have fundamental origins in the transformations of the world's landscapes, whether on a small or large scale, generated both by climate change and the evolution of technology, as well as by the relationship of the subject within the territory in which he inhabits.

To support the proposed argument, we start from the understanding of the landscape from Jean Marc Besse in *Voir la Terre. Six essais sur le paysage et la géographie* (2006). Then, an analysis of cartography and its historical process is carried out in parallel with technological evolution, how advances in geo-location devices and representation resources have profoundly changed the relationship of individuals with the object of the map and with experience of the territory through the map. Approach issues related to sustainability across cartographic projects and their new relationships and representations of maritime landscapes.

New ways of representing the territory are considered based on the relationship between representation, information and experience through cartographies of local territories with an emphasis on maritime horizons. Therefore, from the case studies: Mapping to UN sustainable development goals; "The Poveiro Sea" and their "Maritime Backyards"; and Um Maritime Portrait of Ílhavo, it is proposed an analysis of the shared and expanded construction of knowledge. The arguments highlight the importance of an insistent glance at the world we live in through the joint and particular exercise of thinking about the landscape. By bringing to light issues related to sustainability and how they manifest and affect our relationship with space, the projects analyzed leverage the construction of new representations that elaborate diversity, history, scientific knowledge, individual experience and the transformations of the territory across maps.

Finally, an analysis of the cartographic project is proposed as a methodology for implementing the discipline of Design as a mean of valuing the territory, where the investigation promotes collaborations between the academic community and the local population. By sharing the same territory, it is expected that its representation can open a space for exchange between knowledge that comes from scientific knowledge and the community, where both benefit from an existential construction and sharing, promoting sustainable attitudes and change.

2. Landscapes

The maps that forego the set of digital code systems and images transmitted via satellite, by which we are currently guided and with which we are very much acquainted, are above all an inventory of the history of the world, society and the evolution of knowledge. Cartography, that nowadays seeks to express itself through objective graphic symbology, mathematical calculated proportions of millimetered determined locations, were once a way not only to organize the retained knowledge about geography, but also a way of thinking about the territory, of information archive, of propaganda, of artistic representation, of projecting the world and of 'seeing beyond' through the landscape.

The space proposed by the landscape, of amplitude and experience, allows individuals to transcend the physical limits of space and experience the outside through contemplation. Provided by the creative reverie on site, we can observe sensible and material developments that invite the experience that exists in the encounter with the horizon. There are different layers of content, knowledge and possibilities in the complexity of the landscape, where seeing beyond is also seeing time.

The growing use of mobile devices has changed our perception of distances and the way we interact with spaces, as the graphical user interface evolves new interactive habits emerge, evolving from the interface as a surface to the interface as a place, understood as the proper space of interaction (Camacho, 2015: 209). The transition from the real landscape to the digital surface of cellphones and computer screens is increasingly evident, the circumstances generated by the COVID-19 pandemic accelerated the process of digitalizing interactions with the world and society. The screens have become our contact platforms and are in themselves a new space for events, for social communion, a new landscape.

It seems essential to inaugurate the dialogues that support this article establishing what will be understood here as a landscape and thus what will be argued as cartography. According to the theorist Jean-Marc Besse in *Voir la Terre. Six essais sur le paysage et la géographie* (2006), the idea of landscape appears, in the letter written by Petrarch, through his account of the ascent to Mount Ventoux, derived from a "philosophical tradition", that of the Tou Kosmou theory, of "contemplation of the divine order of the world from a high point." (Besse, 2006:2).

According to the author, the definitions stipulated by Petrarch in his letter, dear to the philosophical tradition, constitute an aesthetic relationship with nature considered as a landscape, however when the author of the record elaborates the landscape in an allegorical way, "The mountain is a figure of the desert" (Petrarch in Besse, 2006: 3) this presupposes a transgression. Petrarch speaks to the landscape's reader as divine, in the sense of ascension of the broad view, however he does not stipulate the experience of the summit as a possibility of pacifying his spirit, relatively to the Christian symbolic experience.

For Petrarch in Besse, the landscape will never be innocent, it is a space of truth and choice of a person who establishes it to express himself; thus, going against Christian traditions, Petrarch brings to light a reflection on landscape as a curiosity, as cognitive modus to see beyond. "The landscape discovered on Mount Ventoux leads, above all, to the experience of an inner otherness." (Besse, 2006:6).

Jean-Marc Besse enunciates in his essay *The Earth as Landscape: Brueghel and Geography* the several similarities between the vocabulary used in the 16th century for both geographic representation and landscape painting. According to the author, "The map is, in effect, the act of mimesis, and many were the cartographers who, in the 16th century, resumed the analogy of the Ptolemaic origin between geography and painting." (Besse, 2006:17).

The painter's gaze and the cartographer's gaze are not then separated, even if they are not confused with each other. They participate in the same cognitive attitude and the same visual competence, which they shared at the time with doctors, architects, engineers and where it manifests itself, (...) their shared attention to the signs of the world nested in the the color of the rocks, the orientation of the winds or the movement of water, which allows the eyes to read, so to speak, the landscape. (Besse, 2006:16)

The cartographic project as an exercise that is closely connected to the active observation of the landscape, to the desire to see beyond and to be present beyond what is seen, to the relevance of individual and collective experience in an external-internal dialectical perspective of the landscape and to the observation of phenomena intends to be a poetic enhancer of the images of the world and, therefore, presented in the analysis methodology adopted in this article.

3. Cartography

Figura 01– Ptolomeu, C. O Mundo, 1482, Domínio Público

Accross maps it is possible to observe the history of the world through different aspects of life in society. Whether in the delimitation of territorial borders established between peoples, areas of domination or the representation of the worldview of certain times. According to the professor of Strategic Cartography at the Department of Geography at the University of São Paulo (USP), Marcello Martinelli (2009) "Mankind has always registered the space where they live. It is a social need". More than a location tool, maps have an important social function, both as a resource for the development of civilizations and for the expansion of peoples.

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Maritime Advances in the 15th and 16th centuries, cartographers developed documents not only with the aim of determining location systems, but also for the publication of records of maritime advances achieved what leads us to think about the various purposes it can present. A map can be related to a political or economic interest; to the use of a certain territory; or with a more specific objective, be it for the improvement of a space or for the expansion of a dominated area.

We can observe such effects in different World Maps where it is possible to clearly see the distortion of the sizes of the represented continents. The effect that is not generated solely by the cylindrical projection of the territories of the globe, but by the emphasis given to certain continents, where it is intentionally represented larger in proportion to what it truly is, automatically implying an understanding of dominance and importance over the other portrayed territories. Looking at the map is simultaneously looking at the world at different moments of development and is observing the evolution of knowledge across a visual language that was very similar to the techniques of painting and drawing.



Figura 02– Mapa de Mercator, 1578, Domínio Público

It is possible to point out a series of unique experiences regarding people's practices in which the contemporary subject experience through the territory. These new configurations are mainly connected to the use of digital technologies in their daily lives, either through location markers on social networks or through the use of global positioning systems (GPS), nonetheless, that together broaden the relationship between experience and territory through devices.

The technological evolution of cartographic projects has changed the way we interact with the object of the map. Digital geo-location systems have uniform iconography to represent different territories, simultaneously homogenizing maps and the experience of the territory through cartography. Likewise, because of the way the interaction with the map object takes place, indicating a pattern of unilateral routes from point A to point B, we end up losing the experience of amplitude and complexity of observing the landscape through the map, of the possibility of proposing new routes and access to multiple information other than commercial establishments and tourist attractions.

The maps presented on new digital platforms, instead, convey an idea of static space. Whether because of the way in which digital mapping tools work, the speed of change or the complexity of the information, the homogenized and immobile visual set does not follow or communicate. We can cross the world through maps and satellite images, but through them we do not have a vision of the changes that occur in the territory and in the climate, especially in more complex and less explored systems, such as the oceans, which they are sometimes represented on cartography as a large blue area.

The evolution of the cartographic project is confronted by the insistent task of simplification, which seeks to establish refined, succinct mappings that present understandable solutions. In practice, maps function as a database where the interaction of the subject with the object is less and less linked to cartography as a platform for discovering a place and more to direct access to a pre-determined route system. However, like classical or technical maps, digital maps also have economic, political and cultural information, which enables the creation of dynamic and multidisciplinary cartographies.

These new social relationships with space, mediated by new technologies, will expand the possibilities of subjective reconfiguration of places, social interaction and the images of the world we share, expanding the construction of new layers of territoriality (Ribeiro and Lima, 2011:45)

3. Mapping to UN sustainable development goals

In celebration of the International Year of the Map (IMY), 201-2016, the International Cartographic Association (ICA) and its commissions mapped the 17 UN sustainable development goals. The ICA commissions developed maps for each of the objectives in a particular way where the collection of posters culminated in a catalog that aims to highlight the importance and strength of cartography, both to tell the story of cartographic diversity, as well as the multiple information and perspectives that we can get through maps.

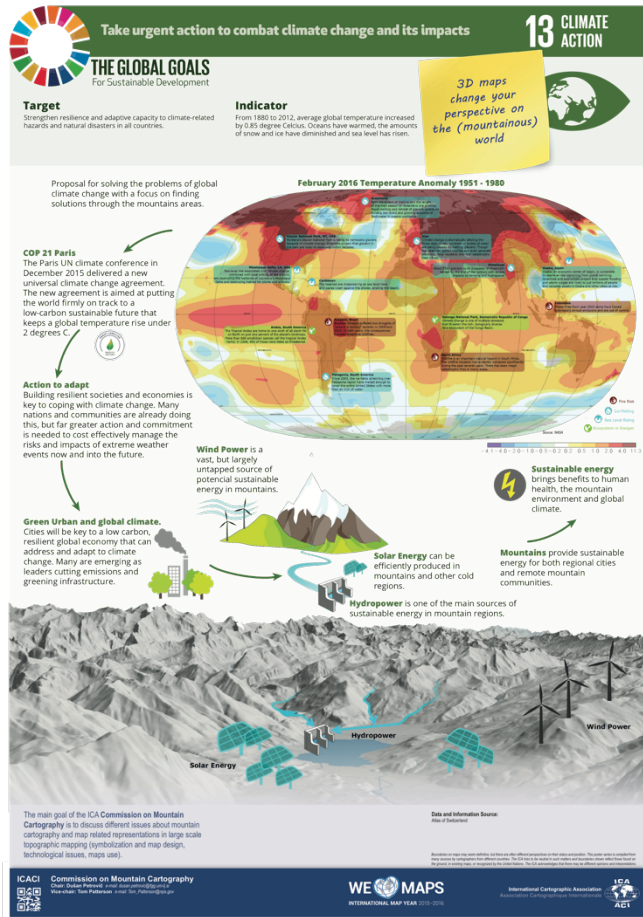


Figure 03 – Goal 13, 2020, Mapping for a Sustainable World. United Nations

When, however, we think of cartography in the dimension of contemporary Art and Design, this understanding and representation of reality can be expanded and elaborated in distinct ways, interconnecting different areas of knowledge and proposing new actions and materializations for the complex synthesis of a territory. The emergence of maps that are capable of dialoguing with new contexts through contemplation of the daily landscape and the insertion into local culture provide the vision of the horizon with means of access to a rich and harmonious totality of the place.

As visual art, maps help us share our experiences of the world, promote empathy and compassion about uneven social and environmental conditions, and inform policy and politics for forging a sustainable future. As visual culture, maps reflect our interests and values, make us to confront our failures and prejudices, and reveal potential alternatives and opportunities. (Krraak, Roth, Ricker, Kagawa, e Le Sourd 2020: 53)

These procedures can simultaneously enunciate and propose different information, forms and actions that together can help in the construction of maps that benefit and encourage positive and healthy changes in lifestyles. By integrating an in-depth and careful look at sustainability, ecological or economic

values in the design of maps, a valuable strategy is used that helps us to understand the complexity of territories and their landscapes. By bringing to light the transformations in the world and the direct relationship between man-society-territory, the map is a valid tool both as a transversal informative means of climate change, environmental damage and its resources, as well as a live space to change the daily behavior, it informs to encourage more sustainable ways of life between community and territory.

4. "The Poveiro Sea" and their "Maritime Backyards"

We analyze here the specific case of the project "The Poveiro Sea" and their "Maritime Backyards" (2020) by José Pedro Fernandes, that produced a series of cartographic exercises based on the observation of empirical knowledge and particular navigation tools and guidance developed by fishermen from Povoa do Varzim in Northern Portugal.

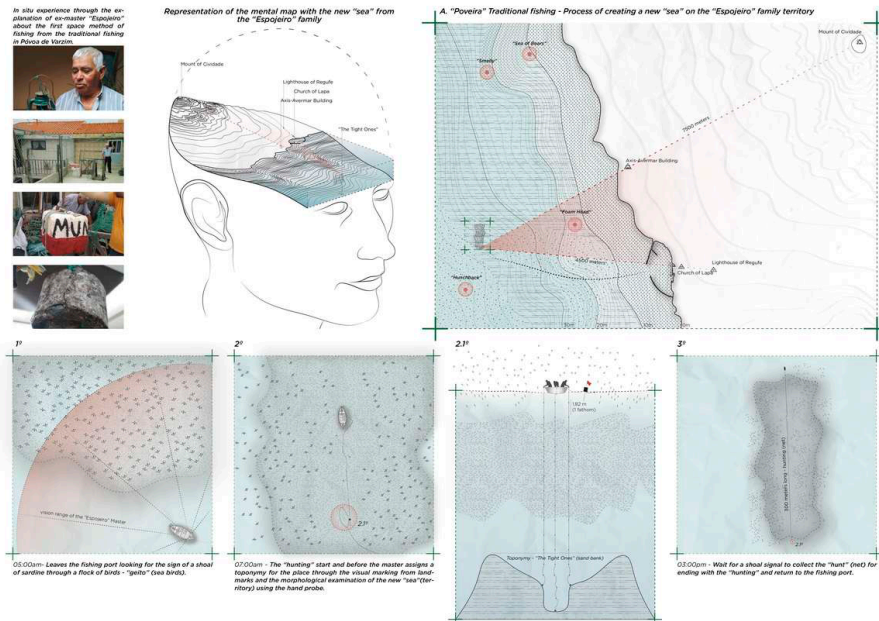


Figura 04- J.P. Fernandes, *The "Poveiro Sea" and their "Maritime Backyard"*, 2020, Future Architecture Platform

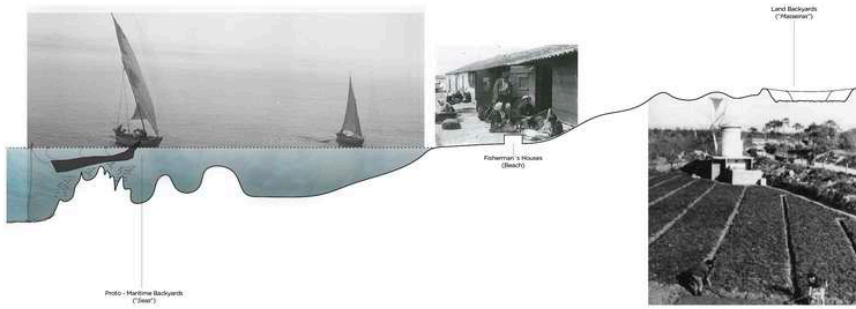


Figura 05– J.P. Fernandes, *The "Póvoa Sea" and their "Maritime Backyards"*, 2020, Future Architecture Platform

Based on the methods of organizing the maritime territory established by the fishermen, the author of the project points to this knowledge as a way of teaching people about climate change that are submerged in the landscape, which makes it possible to produce new concepts and cartographies.

In this sense, the cartographic exercise is a mediating exercise, it elaborates historical, mathematical, geographic, ecological, social data and works with information to generate visual signs in favor of communication for a larger collective. Through representation, we can perceive a strategic capacity when calling for actions through cartographic proposals in the landscape. Projects mediated by art or design can provide bridges between different areas, mediate relationship and not being a direct transposition of the territory, it can propose an elaborate synthesis of knowledge about it. Drawing as a tool, as a support, as a method and as an experience in this case intends to assume the role of an image, of an animated diary of the individual who walks in the landscape.

José Pedro Fernandes' proposal becomes a basis for understanding the multiple relationships that can occur in the fishing activity in the Póvoa do Varzim region, its territory and the elements that link and bring to light climate change, where the landscape from the sea becomes the field of events and the observation base for all the questions that involve his research. The own and individual cartographic narratives do not abstract the social and sustainable character of the project. The singular discourse permeates the context in which it is inserted, starting from a specific collective to an even larger external collective.

By crossing practical and theoretical information from a set of multidisciplinary sources such as geology, biology, oceanography, and based on the architectural project to (re)design and submerged landscapes explored by fishing, the project by José Pedro Fernandes announces a deep analysis about combating climate change. According to the author (2020).

representing and design the countless relationships and transformations that can occur between a socio-economic activity, a territory and all the elements (particularities) that create this and other built environments. Where the sea increasingly becomes the stage (landscape) for almost all the climate changes that occur on our single planet.
(futurearchitectureplatform.org/projects/2cfa1707-4e9f-4c98-a936-ecceccc7b262/).

Thus, when thinking about the landscape as amplitude and depth, we can ask ourselves why to elaborate cartographies based on the complexity of a maritime horizon? The possible layers of analyzing it awakens the different contexts that are approached, the possible temporal, historical, geographic, biological and political overlaps. From the encounter with the landscape, not only projects focused on land can be observed, but also projects that look at the land through the sea.

It is crucial to emphasize the importance of social relationship with maps to develop a modality that integrates the local population in the investigation of the territory in order to design more practical and accessible representations for the community. The participation of the groups in question makes it possible the development of cartographic projects that consider both the empirical knowledge held by the citizens and the suggestion of solutions to problems encountered. It mobilizes to raise awareness and improve environmental issues through the map, it provides a conscious transforming role by inserting the human being, his knowledge and practices as protagonists of his space.

5. A Maritime Portrait of Ílhavo

The documental project was a request from the Municipality of Ílhavo made in 2019 to the research center of the University of Minho, financed and edited by Lab2PT - Laboratory of Landscapes, Heritage & Territory, prepared within the framework of the inventory of maritime and military industrial heritage of the Atlantic coast and produced in the context of the Interreg Programme. It consists on a series of maps for the municipality of Ílhavo at different times in history, both by organizing part of the municipality's map collection and new drawings of the evolution of the maritime landscape over time.

The proposal in question changes the perspective of analysis when it looks at the map from the sea to the land. It studies the place, its history and its culture across the ocean, expanding the possibility of meanings and adding new layers of information to the territory. Even though this is a documental study, it expresses a different way of communicating by sharing the formal changes in the ocean at Porto da Barra, both in its structural, material and symbolic dimensions. This is a prolific investigation in the sense that it is able to reposition the urban perspective of the municipality. The author of the project, André Tavares, points out "The ocean, instead of being a blank space in opposition to the land is a complex and animated environment, which shapes, at the same time as it is shaped, the territories we inhabit." (2021:5)

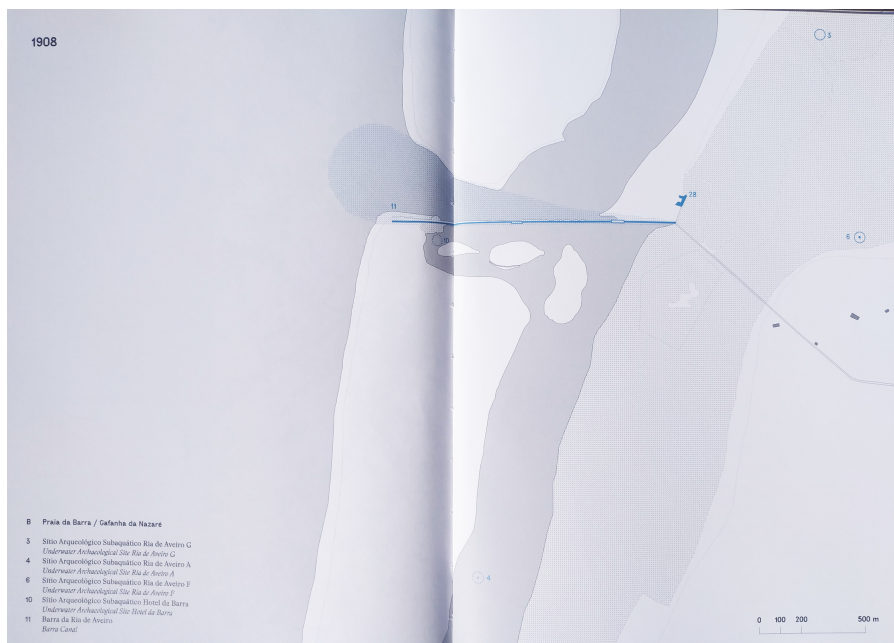


Figura 06 – A. Tavares, *Um Retrato Marítimo de Ílhavo*, pp.70 2021, Landscapes Heritage & Territory Collection



Figura 07 – A. Tavares, *Um Retrato Marítimo de Ílhavo*, pp.80 2021, Ladsclapes Heritage & Territory Collection

The report invites to evaluate cartography project as a tool to foster research projects and collective actions in favor of a more collaborative and sustainable society. The maps presented in this article bring different approaches to the territory and the environmental problems associated with them. In their different representations they approach and emphasize the importance of the capacity of individual development in collaboration with the community – local or scientific – for better understanding and future intervention in the territory.

When confronting environmental issues, we are forced to reinvent the relationship between architecture, urban planning and the planet as a whole. The ability to understand physical phenomena and the transformation of terrestrial territories, with regard to the main ecological and environmental factors - as in the case of the ocean and its maritime cultures, is a crucial step in the reconsideration of our relationship with the places we live in. (Tavares, 2021:5)

6. Contemporary Complexity: Design aspects

Design currently permeates the most different spaces of life in society. Its multidisciplinary work evidence the work of the contemporary designers that resides both in the ability to connect and moderate the different fields in which it is involved, as well as its powerful way of dealing with the present world, coexisting between interdisciplinary freedom, as an active mechanism in communication and also susceptible to submit to accelerated Consumer Industry.

The current Design discipline is no longer based solely on a faithful neutrality and objectivity that defined it as a profession at the beginning of the 20th century (Armstrong, 2015). This paradigm is today confronted with the complexity of the infinite variations present in human communication. Not excluding its functional and rational concern, Design is not free from emotion and subjectivity and is increasingly focused on the human side of interactions.

With less and less noticeable limits, Design subject as a main discourse and not as a secondary narrative starts to point to a series of new questions and possibilities. Thinking Cartography trough Design is thinking about communication through images that permeates Geography, Literature, Art, Technology, Botany, Infographics, People and their Cultures, Climate Change, Physical and Sensitive Borders, etc.

The role of Design presents itself, therefore, as a key tool in the construction of a broad horizon, when

dialoguing with self-representation strategies of spaces, it reorganizes possible combinations and proposes renewed parameters established for projecting maps. It simultaneously opens space for experimentation and experience of the others, by combining the work of the designer, the artist, the traveler, the artisan and embracing the images of our intimacies, we can experience the unexpected. This new spectrum of experience applied to design projects allows us to think of different practices that may come to shape the mapping of the complexity of a specific territory.

We can rethink maps and propose different projects based on the landscape experience by using Design as a method to deepen the geomorphic knowledge of a territory, together with different disciplines that involve contemporary complexity. From the representation, it is possible to trace new routes that elaborate different paths that move away from unilateral trajectories and can propose a longer encounter with the world. Above all, it is necessary to decelerate the look on the map, which can contribute to a real use of a territory as opposed to the current exacerbated consumption of it.

Digital technological advances allow a series of new proposals and uses for mapping territories, so that daily social life also gains space for representation. This article, which appears in the context of an investigation that is being developed within the scope of the Doctoral Program in Design at the University of Aveiro, seeks to highlight the importance of the collective aspect in cartographic exercise. The research proposal, based on the objectives, identifies the perception and knowledge of the local territory, its history and its transformations, connecting the local community and the academic community while placing the image creation project as a cooperative and participatory field, as a condition for the knowledge in Design, as a mediator of experiences, information and images. The reports and actions that come from the knowledge of both the local and scientific communities can give to maps sustainability and ecology values. Thinking about the space where you live is fundamental for promoting positive behavioral changes in relation to the environment, whether individual or collective, which can trigger future socio-environmental consequences.

The Design project has the ability to narrate and mediate different areas of knowledge that, in harmony, can favor the construction of a diverse and interchanging cartography. The perception of the landscape and its transformations can promote dialogues about political tensions, the weaknesses of systems, the peculiarities of communication of a certain group of people and climate change. The cartographic methodologies combined with the skills and processes dear to design will lead to a joint work in the elaboration of maps of the complex contemporary social and cultural horizon, based on the experience to be delineated in the municipality of Ílhavo.

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