

The Production of the Human in Classical Oceanography: A Critics from Socio-environmental Oceanography

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Abstract: The aim of the present article is to analyze, from a Socio-Environmental Oceanography perspective, the production of artisanal fishermen by a group of professionals who mobilized knowledge and truths to create the fishery legislation for Lagoa dos Patos estuary (Rio Grande do Sul - Brazil). Results have shown a discursive formation structured by CO's paradigmatic axes, which operate in the sense of stereotyping artisanal fishermen and of influencing the creation of public policies.

Keywords: Oceanography of knowledges; ethno-oceanography; territory of discourse.

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Introduction

Hegemonic Classic Oceanography (CO) has been going through critical changes in the last twenty years, which are moored in ecology knowledge and reinforce the struggles for socio-environmental justice through a ‘decolonial turn’¹ to engage in the marine-coastal world. These paradigmatic ruptures have been happening due to higher education experiences, mainly due to extension research in several American countries, mostly in the Latin American ones (MOURA, 2019; NARCHI et al., 2018).

This emerging critical perspective, known in Brazil as Socio-environmental Oceanography (SO), has identified four pillars that support CO. One of them would be the creation of a biocentrism modality applied to seas, the so-called ‘Oceancentrism’. Another pillar would regard the consolidation of the tragedy of commons in the seas, the Tragedy of Oceans. Epistemic totalitarianism, in its turn, would be the belief of CO as privileged space, or even as unique space, for the production of knowledge about seas, in all knowledge fields, even in modern sciences. Consequently, there would be the programmatic CO action focused on getting consolidated as the one valid-knowledge field concerning the seas by making other knowledge modes infeasible and/or by destroying them in order to produce a Monoculture of Seas (MOURA, 2019). The last one, it is what we have been calling structural oceanographic male chauvinism based on evidences presented by Revelle (1980), Rozwadowski (2005) and Kroll (2008). These authors have shown the institution of asymmetric gender power relationships that end up producing the non-existence of the feminine under the singular logic that takes back to Challenger’s endeavor, which is one of the mythical narratives about the foundation of the classic oceanography.

Rupture with CO structures came from the perspective of socio-environmentalist branches of nature’s protection (MOURA, 2019), which regards a genuinely Brazilian ‘decolonial turn’ that was triggered by Amazonian Rubber Tappers’ movements in Acre State, and spread countrywide in the 1980s (FOPPA et al., 2020). This new Oceanography has defined its object of study, namely: ethno-oceanographic spaces, which are an epistemic-space modality. From the perspective of territory as knowledge, ethnooceanographic spaces can be defined as a set of socially organized practices applied to knowledge production in the engagement process by social groups (hegemonic or subalternized) with the coastal-marine worlds (MOURA, 2019).

Whenever multiple worlds are classified, ordered and named, one finds an intervention in the world, an epistemic operation, which acts in the world according to historical, cultural and social modalities; in other words, according to a certain logic (THOMAS, 1994). Each one of the operation modes produces different spaces (CERTEAU, 1996) that are linked to different knowledge modes. Therefore, the production of an epistemic space takes place through epistemic operations (MOURA, 2017).

There are several research fields on SO; among them, one finds ethno-oceanography. It has been developing an approach of socio-environmental conflicts based on the

1 - Decolonial turn is the theoretical and practical, political and epistemological, resistance movement against the modernity/coloniality logic (NARCHI et al., 2018).

analysis of two ethno-oceanographic space dimensions: one linked to professional activities (MOURA, 2017) and another associated with the mythical space (BITTENCOURT et al., 2017). We herein intend to explore a third dimension in this space, namely: the (epistemic) space of discourse. We are mainly interested in domination forms that produce social inequality and injustice, actually, in what Van Dijk (2017) calls power abuse.

The ethno-oceanographic space of discourse

The universe of discourse is heterogeneous and substantiated by speech regimes, according to which, one can enquire about the association between discourse types and space, about the set of discursive practices by society and the social space. It is possible observing that some announcers linked to a legitimating source (religion, science, among others), in any society, are asked to talk about a given issue (MAINGUENEAU, 2015).

After the rise of the Modern State, one of these legitimating sources would lie on governmental thinking, which became essential for the art of ruling. Rationalities resulting from different sciences define the objects of thinking, the objects of government, experts, authorities and institutional locations authorized to produce truth about the aforementioned objects and, consequently, to produce the governmental practice (INDA, 2005). Foucault (2008) states that 'truth' would be a framework of procedures regulated by production, law, distribution and circulation through which one can outspread the true profile of the false and establish true propositions.

Propositions seen as true by a social group that derive from a false rationale, that simulates veracity, are called 'fallacies' (HOUAISS; VILLAR, 2009). These fallacies support a given stereotype; in other words, an image or representation of things, people and ideas, based on a pre-existing semantic composition (BARDIN, 1977).

An epistemic community is found when a given group of professionals (experts), at local, national and international level, who are acknowledged by their competence in a specific knowledge political-relevance domain, share beliefs, values, convictions, validity criteria, political engagement, desired outcomes and common practices linked to issues assessed through their professional competence (HAAS, 1992). However, the epistemic community has to be raised to 'centers of calculation' in order to be authorized to produce and mobilize knowledge and truth about a given object, and to make it understandable to the governmental practice. According to Latour (1986), centers of calculation are spaces where power is set from subsidies deriving from a set of professionals belonging to different expertise fields.

Scientists are part of a discourse order (FOUCAULT, 2006) formed by operations that gather textual contexts and institutions they embody and validate (MAINGUENEAU, 2015). The epistemic operation is subjacent to humans' participation in races, species and cultures, in the colonial-profile modernity; it makes certain populations visible as governments' objects of action (THOMAS, 1994). This 'engine' would be the operational logic of ideological discourses, including the racist one, which emphasizes assumed negative features of the *others* and the ones that would be positive to members of their own group

(VAN DIJK, 2017). The epistemic operation modality that produces an epistemic space of the constituent discourse and that makes subjects visible to governmental practices is called by us 'strategic operation'.

When it comes to the specific case of the fishery sector, several experts (biologists, oceanographers, economists, among others) were taken to centers of calculation to formulate policies for the production of ethno-oceanographic spaces, worldwide. Accordingly, artisanal fisherman was (stereo)typified by the epistemic space dimension of the governmentalized scientific discourse, which is a constituent discourse modality. Several fallacies have been used to (de)qualify traditional fishery communities in Brazil (DIEGUES, 1995) and abroad (SCHREIBER et al, 2022). Accordingly, the aim of the present article was to analyze, from the SO perspective, artisanal fishermen production based on a group of professionals who have mobilized different knowledges and truths to create the fishery legislation: Joint Normative Instruction 2004 (INC 2004)², in Lagoa dos Patos estuary, Rio Grande do Sul State (RS), Brazil.

Methodology

Historical ethno-oceanographic space, epistemic community and fishing in Lagoa dos Patos estuary (RS).

Society of Oceanographic Studies of Rio Grande (SEORG) was launched in 1953 by researchers in the oceanography field linked to the fishery industry. They got material and financial support from both the United Nations Food and Agriculture Organization (FAO), and state and federal governments. SEORG issued the fundamentals for fishery ruling in RS, based on the first research to improve the quality and amount of captured marine species and to delimit objects of the governmental practice, experts and institutional locations authorized to talk about fishing (MOURA, 2017). SEORG gave birth to an epistemic community.

SEORG was incorporated by City Foundation of Rio Grande in 1969, as a strategy to provide institutional conditions to grant public-power financing for infrastructure and research, and to make the creation of graduation courses feasible, including the first Oceanography course in the country. Thus, University of Rio Grande was (URG) inaugurated, based on the University/Industry relationship and on the positivist formation tradition of technical professionals (Op. Cit.).

SEORG, and another institution that has derived from it – Research and Management Center of Lagoon and Estuary Fishery Resources (CEPERG) –, subsidized regulations that firstly affected artisanal fishing. Several professionals got mobilized to create a co-management space, the so-called Lagoa dos Patos Forum, also known as FLP, because of the fishery collapse in Lagoa dos Patos estuary. INC 2004 was created within FLP's context to regulate artisanal fishing in Lagoa dos Patos estuary. It imposed rules for fishery resources' use (fishing calendar, fishing techniques, access rules, among others).

2 - INC 2004 was published on February 9, 2004, by the Ministry of Environment and by the Special Secretariat of Aquaculture and Fishery of the Presidency of the Federal Republic of Brazil.

Although it was a co-management space, FLP meant a way to deepen the fishery capitalist modernization process, which was implemented in this region since SEORG's creation, based on the decisive participation of members from the aforementioned epistemic community (MOURA, 2017).

Epistemic community and documental analysis

Eight professionals (fishermen, social movements, researchers and managers) were identified, based on the snowball method; they played key-role in INC 2004 formulation. Two people close to the authors of the present article were the starting point of the snowball process. Semi-structure interviews (BAILEY, 1982) were carried out with six of these professionals (one of them refused to be interviewed and was not located) in order to find out who was part of, and what was the information mobilized for INC2004 formulation. The two main questions were 'how was the process to develop INC 2004?' and 'what was the information mobilized for INC 2004 formulation?'. The following question was added to the interviews carried out with researchers and managers: 'what were the scientific publications used to formulate INC 2004?'

Based on the interviews, scientific publications' production, selection and mobilization were based on three of the eight identified professionals: two FURG researchers and one CEPERG manager, who was the one refusing to be interviewed. Subsequently, we screened the secondary documents of the scientific domain, according to Oliveira (2007): i) screening the bibliography indicated by the two interviewees; ii) bibliography produced by the interviewees about fishery and/or artisanal fishing, be it under the author, co-author or co-adviser's condition; iii) searching for bibliographies mobilized by the interviewees that feature artisanal fishing according to their own discourse during the interviews.

It was possible to list the titles in Table 1 based on these criteria and on the year INC 2004 was launched, which was the time limit for the publications. Documents were analyzed based on associating the words that would allow linking artisanal fishermen to (stereo)typifying (BARDIN, 1977), at three levels: i) definition of discursive fragments taken as ideal representatives (MOURA, 2017) for having lexical items that best feature artisanal fishermen at the time to qualify them, for correlating them to fallacies identified by Diegues (1995)³; ii) each one of the herein identified fallacies were classified into discursive types (1, 2, 3...) and analyzed according to non-existence production modes proposed by Santos (2010)⁴; the two-part levels were related to discursive formation typical of CO (MOURA, 2019), which produces the ethno-oceanographic space of discourse.

3 - Diegues (1995) identified 11 fallacies and eight of them showed up at data analysis and discussion. To check on the other fallacies, see the chapter 'Realidades e falácias sobre pescadores artesanais' (p. 93-100).

4 - In total, 5 non-existence production modes were described by Santos (2010) and four of them showed up in data analysis and discussion, except for 'logic of the dominating scale'.

Table 1 – Analyzed secondary documents about artisanal fishing linked to the epistemic community that has governmentalized INC 2004 published up to 2004

Analyzed secondary documents		
Material Type	References (author-data system)	Knowledge Fields
Graduation Dissertation (5)	Silva de Almeida (1997) Lilja (1999) Lima (1999) Silveira (2004) Benedet (2004)	Oceanology Economy Economy Geography Oceanology
Specialization Dissertation (2)	Silva (2003) Rizzi (2004)	Biology Chemistry
Masters' Degree Dissertation (3)	Marques (1997) Cabral (1997) Santos (2001)	Oceanology Philosophy Philosophy
Doctorate Thesis (1)	Reis (1992)	Oceanology
Book Chapter (1)	Reis (1999)	Oceanology
Book (2)	Marques (1980) D'Incao et al. (1990)	Education, Folklore and Tourism Natural History, Oceanology and Fine Arts
Articles in national Journals (5)	D'Incao (1991) Reis (1993) Reis et al. (1994) D'Incao and Reis. (2002) Boffo and Reis (2003)	Natural History Oceanology Oceanology Natural History and Oceanology Medical School and Oceanology
Articles in international journals (1)	Reis and D'Incao (2000)	Oceanology and Natural History
Technical documents (2)	Reis (1986) Silva (1990)	Oceanology Oceanology

Source: Elaborated by the authors.

Production of the *other* artisanal fishermen, based on the Classic Oceanography logic, within the INC 2004 context

In total, 22 key works by professionals from several knowledge fields were selected (Table 1). These professionals belong to the historically constituted epistemic community in the region since SEORG's foundation by a group of professionals from different disciplines and expertise. These professionals who act at local, national and/or international level, in political-relevance topics, mainly in fishery, in RS, share and/or contribute to the construction of an idea of RS artisanal fisherman⁵. However, only three members of the epistemic community rose to centers of calculation; consequently, they have mobilized this idea of artisanal fishermen, which is shared in INC 2004 production. Thus, due to their rise to centers of calculation, these three members have formed a cell of this epistemic community. Rainho (2022) analyzed the formulation of public policies focused on the Brazilian fishery sector and showed that such an idea of fishermen is also observed in other power spheres, at local and national scale.

Table 2 shows nine discursive types associated with lexical items identified in ideal discursive fragments that feature artisanal fishermen. These discursive types, which are correlated to the fallacies by Diegues (1995), set the RS artisanal-fishermen stereotype, as we address below.

Reis (1992; 1993) classified coastal fishery in RS into three categories: subsistence and artisanal fishing (or small-scale fishing), practiced at Lagoa dos Patos estuary; semi-industrial (or mid-scale) fishing and industrial (or large-scale) fishing, which are performed in RS' coastal line. According to her, this classification would be based on Diegues (1983), but he does not address the category 'semi-industrial fishing'. Semi-industrial fishing would comprise categories *Fishing production and embarked shipowners* and *artisanal fishermen production* by Diegues (1983), because embarked shipowners act in the coastal area⁶ and artisanal fishermen act in the continental platform. Moreover, Diegues (1983) does not set any exclusive action area among different fishery production forms, but 'areas accounting for higher incidence'. Adomilli (2007) recorded artisanal fishing activities on RS coast⁷.

5 - The word 'fisherman' is often used in the masculine form, in Portuguese, and it builds the sense of this professional category, which is based on a gender cut due to the aforementioned epistemic community. From the oceanographic-structural male chauvinism, this construction actively produces the non-existence of women in fishery; this is a subject for further articles.

6 - The 'coastal line' Diegues (1983) refers to can be taken as synonym of 'coastal zone', which was further defined by Decree 5300/2004.

7 - RS coastal zone external to Lagoa dos Patos is mentioned in the local scientific bibliography as 'coast'.

Table 2 – Discursive types and ideal representatives of discursive fragments, and fragments of lexical items found in secondary documents published by the epistemic community and selected by the cell taken to the calculation center for INC 2004 production

Discursive types	Lexical items	Discursive fragments
1	Estuarine fishery	artisanal (fishery) or small-scale: here we can include the condition prior to estuarine fishing at Lagoa dos Patos, when it was a profitable economic activity (REIS, 1992, p. 26; 1993, p. 111)
2	Full time dedication	Dedication to estuarine fishing is oftentimes integral (REIS, 1992, p. 29; 1993, p. 113)
3	Isolation	Torotama island is under geographic isolation condition (SANTOS, 2001, p. 40).
4	Professional formation, technological development, yield	Lack of fishery schools for the formation of fishing professionals is a barrier to fishery's technological development and to yield increase in this sector (LIMA, 1999, p. 08).
5	War mentality	The fact the government agency responsible for fisheries management is one of the institutions that make part of FPL helps to reduce the possibility of war mentality (REIS; DINCAO, 2000, p. 593).
6	Competitive, market oriented	...it is important to consider fishermen's competitive and Market-oriented view of fishing; this is more realistic that to assume that fishing is a communal, cooperative and altruistic process (REIS, 1992, p. 189).
7	Predatory fishery, self-destruction, lack of awareness, stock reduction, illegal and destructive methods to the environment	It is noticeable, by assessing predatory fishery, that fishermen have developed a self-destruction method, since they do not realize about their key participation in stocks' reduction, due to the practice of illegal methods that destroy the fishery environment (LIMA, 1999, p. 75).
	Predatory practices, extermination chamber.	These practices are so predatory that within each 1,000 shrimp that try to reach the ocean, only 2 succeed, (...), so that it would not be too much stating that Lagoa do Patos is becoming a pink-shrimp extermination chamber (CABRAL, 1997, p. 90).
	Broader view, respect relationship, solidarity to the medium	It was decided to try to help them through courses and/or lectures (...) in order to make artisanal fishermen get a broader view that could help them put in place (...) a respect and solidarity relationship (CABRAL, 1997, p. 33).

8	Low cultural level, lack of knowledge.	...the user effective participation at the process in Patos Lagoon fisheries discussion is difficult because of the low cultural level of the fishermen community. Basic concepts about biology and species life cycles, economic and social aspects are unknown (REIS; DINCAO, 2000, p. 593).
	Artisanal fishing without evolution, rooted in traditions.	(...) the structuring features of artisanal fishery remain almost unchanged for decades, without any significant evolution in its structure. It has been showing little dynamics and deep rooting in traditional means, besides fearing all that is new (LILJA, 1999, p. 74).
	Preservation consciousness, deeper knowledge, preserving and taking care of its natural habitat.	School has sought to develop Environmental Education projects, so that it can provide preservation awareness to residents, because their survival is intrinsically related to Lagoa do Patos. A better local knowledge makes fishermen preserve their own natural habitat (SANTOS, 2001, p. 39).
9	Built from white element	Fishermen are almost fully built from the white element. Black people (...) would have dedicated themselves to grazing, <i>charqueadas</i> and farming (MARQUES, 1980, p. 14)

Source: Elaborated by the authors.

Among the criteria selected to discuss artisanal and semi-industrial fishing, it is possible to observe that, according to the aforementioned Reis, RS artisanal fishing lacks division of labor, but the semi-industrial one counts on it. Other studies contradict this information since they recorded the division of labor in RS artisanal fishing (PASQUOTTO, 2005; ADOMILLI, 2007; MOURA, 2017). The assumed need to produce this new typology is shown in the excerpt below:

It is important not to call coastal fishery artisanal. The benefits from an appropriate classification for basic statistics and for its straight consequence to data reliability increase are clear. On the other hand, the present over-exploration status or the intense exploration of most stocks in the region require prohibiting uncontrolled increase in the number of boats and nets acting in coastal fishery, since it increases the fishing efforts. Financing for fishery activities is more easily acquired by artisanal fishery than by the industrial one, and it means that an increase in fishing efforts can be encouraged through it. The appropriate coastal fishery classification would limit financial support granting, and it would help maintaining the fishing effort at the current levels (REIS, 1993, p. 113-114).

Accordingly, it would play the role of governmentalizing public policies focused on RS fishery sector management (statistics, financing, regulation, among others). However, the three fundamentals of this new typology are weak, due to 1) the specialized bibliography, according to which, industrial fishery in Brazil, and in RS, has received more public financing than the artisanal one, over the years (see DIEGUES, 1983; SOUZA, 2001;

AZEVEDO; PIERRI, 2014). Therefore, the intention to control fishery-effort increase on the coast through financing impairment for artisanal fishery did not reach its goal; 2) the industrial sector is not affected by the new typology; 3) it does not make sense to control the fishery effort at RS' coast by impairing financing to a sector that does not act on the coast. Thus, the 'scientific' discourse strategically operates to produce the non-existence of artisanal fishermen acting on the coast, and to subsidize the aforementioned policies from the linear-excluding logic. Thus, the discursive type: 'artisanal fishermen who exclusively act' in Lagoa dos Patos estuary would be the first fallacy, but it was not described by Diegues (1995).

With respect to the second discursive type, artisanal fishermen are featured as linked to full-time dedication. It deliberately puts aside the feature 'fishing is the main activity', but it does not exclude the artisanal fishermen described by Diegues (1983: 151); this statement about full-time dedication is substantiated by fishery-biology authors, such as Smith (1979), for example. Thus, we get to one of the fallacies reported by Diegues (1995): artisanal fishermen are full-time professionals. Simultaneously, one can produce the non-existence of the category 'small family production of fishermen-farmers for small-scale simple market production', which is observed in Lagoa dos Patos estuary (MOURA, 2017). Both excluding factors (action and activity) operate under the logic Santos (2010) calls social classification, which is a linear-excluding form to create and naturalize differences.

It strategically operates in the creation of the 'real' artisanal-fisherman (stereo) type: the one who acts exclusively in the estuary and is fully dedicated to it. Fisherman categories, other than the aforementioned one, are seen as 'non-fishermen' features. Accordingly, State control over the fishery effort and over artisanal fishery financing is made feasible within a linear-excluding logic, based on the true artisanal fishermen/non-fishermen binomial. This artisanal-fisherman (stereo)type will be governmentalized to allocate the defense-insurance, which results from INC 2004 implementation.

Discursive type n. 3 is in compliance with one of the fallacies identified by Diegues (1995, p. 98): 'artisanal fishermen are isolated'. This 'discursive type' is one more criterion used by Reis (1993) to feature artisanal fishery and to differ it from the semi-industrial one: the first one would regard 'isolated communities' and the second type would be 'separated'. Being away from urban center does not make these communities isolated because they are a shipped labor force that they relate to other fishery communities, to urban centers and to industrial fishery (DIEGUES, 1995). This discursive type is used to downgrade fishery communities, including their knowledge, because they would have lower access to the urban-industrial way-of-life (MOURA, 2017).

Discursive type n. 4, in its turn, corresponds to a fallacy identified by Diegues (1995, p. 95): 'artisanal fishery is ineffective'. This productive logic is a non-existence element linked to the unproductive and disqualified professional form (SANTOS, 2010). It proposes the need of artisanal fisherman professional qualification to increase yield in this sector, as suggested by this discursive type and fragment. Still, based on this same logic, one can state that artisanal fishery requires approximately 20% of the fuel and 25%

of investment in comparison to needs by the capitalist industrial sector – it accounts for 60% of the estuarine and marine fishery resources disembarked in Brazil (DIEGUES, 1995; VASCONCELOS et al., 2007). International data show that small-scale fishing captures four times more fishery resources per liter of fuel than industrial fishery; which consumes 89% of the fuel used in fishery-resources' capture (JACQUET; PAULY, 2008). This discursive fragment also operates according to the linear-time monoculture logic, which shows a single orientation and direction, by stating the need of professional formation to reach 'technological development', and it also leads to the 'sense of obsolescence'. This is the non-existence element under the 'residualization' form (SANTOS, 2010).

Discursive type n. 5 twists a fallacy identified by Diegues (1995, p. 98): 'artisanal fishermen are passive and they do not fight for their interests', since it gives them a 'war mentality'. However, it is in compliance with 'The Economist' (1994, p. 13 and 24), which qualified fishermen as 'pugnacious'.

The sixth discursive type features fishermen as 'competitive' and 'market oriented'; therefore, it fits a fallacy identified by Diegues (1995, p. 99), according to which, fishermen are 'individualists and do not get organized'. This discourse type is common among scientists and managers, although specialized research has shown that they get collectively organized and operate under the logic of their traditional fishery-management systems (MCGOODWIN, 1990; PÁLSSON, 1991), even in RS (MOURA, 2017).

Type n. 7 corresponds to a fallacy identified by Diegues (1995, p. 99): 'artisanal fishermen are predators'. They would capture the most fishery resources possible for their own benefit, although it could lead to lower captures in the future, as well as to nature destruction and to their own self-destruction. This 'hunter logic' attributed by researchers and managers, without data substantiation, also happens in other countries (MCGOODWIN, 1990; PÁLSSON, 1991). Specialized research carried out in traditional fishery communities point out associations between human beings, and association between humans and non-humans, which are mediated by the ethics of secret, sacred, egalitarianism (MALDONADO, 1993) and care (RAINHO, 2022).

Yet, one finds the use of some alarming lexical items, such as 'self-destruction', 'extermination chamber', 'illegal methods' and 'destructive to the environment'. According to some authors, this alarming linguistic repertoire (exhaustion of natural resources, oppressive technologies, among others) is used to create a myth, the apocalypse, for example, based on an interpretation field (KRØVEL, 2014); in this case, the Biocentric preservation (DIEGUES, 2004). The use of alarming lexical items typical of fishery sciences allocated in biological oceanography to produce the *other* – the artisanal fishermen – is an Oceanocentric manifestation. One of the beings constituting the (ethno)oceanographic space, the artisanal fisherman, is made accountable for an (eco)apocalypse, the collapse of fishery resources in RS.

Fishermen featuring as 'predators', based on the (pre)supposed diagnosis that they want to 'fish as much as they can' (see CABRAL, 1997: 65) to get 'higher profit' (BENEDET, 2004, p. 12) would lead to 'fishing collapse', to 'stocks' decrease', to 'self-destruction', to 'destruction of the fishery environment' and to the formation of 'shrimp

extermination chambers'. It would frame them in the formal economic theory by Scott Gordon (1953; 1954), which substantiates the Tragedy of Commons by Hardin (1968) and its extension to the sea, the Tragedy of Oceans. According to the theory by Scott Gordon, fishermen would seek high captures and individual profit in free-access areas, and it would ruin all due to the fishery collapse. According to McGoodwin (1990), the implementation of both the Gordon-Schaefer bio-economic model and the paradigm by Hardin (1968) produces a cynical representation of the mentality of the *other*, because it reduces fishermen's rationality, in a positive-reductionist way, to an economic logic and to the logic of dehumanized natural predators. It also turns them into irrationals to use fishery resources, as well as makes the rules of traditional natural resource management unfeasible. These traditional rules, which are made unfeasible by the constituent discourse of the epistemic community and mobilized by this same cell, were described in several studies in RS, from the late 1990s, onwards (MOURA, 2017).

The aforementioned fallacy strategically operates to generate three consequences. One of them lies on the production of the artisanal fishermen by projecting on them features of the epistemic community itself and/or of the capitalist industrial fishing. The economic rationale of free-market substantiates the Gordon-Schaefer bio-economic model and the Hardinean paradigm; consequently, the fishery science allocated to biological oceanography, which has been sharing values and ideas with the fishery industry, since its emergence (MOURA, 2017). According to Schreiber et al (2022), this discourse about the greedy fisherman is supported by the alarming discourse deriving from the logics of the neoclassic economic thinking.

The second fallacy is related to the aforementioned production logic. Using natural resources and leading to their collapse are not efficient procedures from the environmental viewpoint, after the idea of sustainable development was consolidated in the 1970s and 80s (BJØRN; HAUSCHILD, 2013). Fishermen would hold a competitive and inefficient production profile; in other words, they would be 'residualized', according to the logic of linear time monoculture.

The third fallacy leads to the diagnostic that fishery in Lagoa dos Patos estuary is a 'free-access system' (MARQUES, 1997, p. 53) inhabited by artisanal fishermen who were personified into Tragedy (of Oceans). The production of the *other* associated with this diagnostic corroborates the discussion by Moura (2017): the modern natural-resources management model is (bi)focused on social and ecological systems. Therefore, this fallacy materializes the Tragedy of Oceans in the discourse that bio-economically shapes the space of the (ethno)oceanographic discourse.

The artisanal fisherman is produced as 'predator', because it does not 'perceive', would not be 'aware', be committed and have a 'broader view' of its association with the environment. Thus, discursive type n.7 is closely related to n.8, which downgrades and/or produces the ignorance of the *other*, and it corresponds to a fallacy identified by Diegues (1995, p. 97): 'artisanal fishermen are ignorant'. All discursive types have cognitive references and their highest frequency in the herein screened bibliographies points towards the production of a strong hierarchy between scientific and traditional knowledge.

It is recommended to carry out educational activities (courses, lectures, environmental education projects, among others) in spaces of formal and non-formal education (Lagoa dos Patos Forum, for example), to supposedly help fishermen's learning, to rule out their war mentality and inefficiency (discursive type n: 4). These discursive types express the aforementioned epistemological totalitarianism in CO by producing this hierarchy or by making other knowledges infeasible (MOURA, 2019). The specialized bibliography about RS fishery sector, and bibliographic and ethnographic field data, have shown that artisanal fishermen have broad traditional knowledge about their territory (ADOMILLI, 2007; MOURA, 2017).

According to Hobart (2002), ignorance is not a simple antithesis of knowledge, but a moral attribute granted to 'others', and it is filled with prejudice. Moral attributes in RS are found in all discursive types of the epistemic community. They were disclosed into nine fallacies, and mobilized by the cell risen to the center of calculation to formulate INC 2004. According to Diegues (1995), the fallacies about artisanal fishermen is supported by technocrat ignorance, which seems to be the very case of the epistemic community (see Table 1) producing nine discursive types (see Table 2). According to Moura (2017), RS researchers and managers ignore the situation of fishery communities and do not know their structure and dynamics. As for the Fishery Pastoral, lack of knowledge about this fishery region prevailed until the early 1990s (MARTINS, 1997). Kalikoski (2002) started from this same diagnostic and observed significant increase in the number of research about the fishery sector from the 1990s, onwards. However, they have an inappropriate positive-reductionist approach disregarding social and ecological systems that get (uni) focused only one of them. Thus, as already mentioned, modern natural-resources management systems, including the fishery one, are bifocal. The problem is not the focus, but the theoretical-methodological approach, which is based on the colonial bias and contributes to the production of a stereotyped representation of the *other* (MOURA, 2017). The herein assessed case is an example of the warning by Hobart (2002): the growth of systematic knowledge can turn itself into ignorance increase. Fallacies are the expression of ignorance growth about fishermen, but not the expression of fishermen's ignorance.

The ignorance of the *other* expresses, just as in the production logic, the projection of oneself over the *other*, who plays programmatic role in CO. It produces the non-existence of other knowledges by making it unfeasible/by destroying it, while a Monoculture of the Seas is produced (MOURA, 2019).

The last discursive type (n. 9) states that 'almost all fishermen are featured by the white element'. Artisanal fishermen would be featured like this in RS, up to early 21st century, when several artisanal fishery communities in Lagoa dos Patos estuary were registered as deriving from miscegenation among Portuguese, German, indigenous and black people. *Quilombolas* fish in Pelotas, Capivari do Sul, Viamão and Mostardas, whereas Mbya-Guarani indigenous groups fish in Porto Alegre (PASQUOTTO, 2005; ADOMILLI, 2007; MOURA, 2017).

One makes fishery communities resulting from miscegenation among Europeans, blacks, *quilombola* and indigenous people unfeasible, by producing white artisanal fisher-

men, descending from Portuguese people, only. Erasing black and indigenous populations is part of RS' regional construction, and it is influenced by the positivist '*gaúcho*' way. This positivism reinterprets the conceptions by Augusto Comte about family and social hierarchy, evoking 'European origins' and reinforcing the scientific racism that influences intellectual lives in this region and conceptions about the '*gaúcho*' figure (MACIEL, 2004; LANDGRAF, 2020), including that of '*gaúcho*' fishermen. This discursive type, that erases social groups and their knowledge, operates under the logic of social classification, which is associated with the monoculture knowledge, according to Santos (2010); moreover, it launches one more of CO's structure: the cultural monochromatic element in the seas.

The production of the cultural monochromatic profile in RS' seas is linked to the emergence of the aforementioned groups and meets the time of discussions about *quilombola* and indigenous rights, including the right to territories. These agendas were taken to the National Congress at late 1970s and added to the 1988 Constitution, which has mobilized a significant part of the Brazilian society (see CARNEIRO DA CUNHA, 2009). The 'white artisanal fishermen' production by Marques (1980) makes it impossible to implement the *quilombo* and/or indigenous lands for RS fishermen, and it denies them the right to autonomous use of their fishery natural resources. This profile is in compliance with the whitening policies implemented during the historical construction of the regional '*gaúcho*' profile (LANDGRAF, 2020).

RS artisanal fishermen produced by the aforementioned cell is (stereo)typed as white man who work based on both full-time dedication and exclusive action field, inefficient and war-mentality oriented, competitive, market-oriented, predator and ignorant. According to Foucault (2008), a set of 'scientific' rules allowed producing 'scientific truths' and 'true propositions' (discursive types) kept by a system of power. However, apparently scientific rules were adopted (bibliographic screening, use of scientific language adjusted to a given knowledge field, adoption of scientific criteria, among others) to produce artifacts, i.e., inconsistent data, results and discussions (MOURA, 2017). There are discursive types whose data were introduced as if they had already established a 'scientific common sense'. These 'true propositions' are synonyms of the fallacies described by Diegues (1995).

These fallacies are in compliance with the production of the modern representations of the *others* in the cultural colonialism pointed out by Thomas (1994). This discursive dimension has modern-colonial bias and is produced by professionals from different scientific knowledge field; but it would be one more dimension to reinforce the multidisciplinary effort by CO to the conquest of the seas defined by Moura (2019). According to Foucault (2006), no matter how much professionals from different scientific knowledge fields are involved in the production of such fallacies, the discursive formation must follow a relationship system capable of featuring a discursive practice to form its discursive types (or statements) and unity in the discourse about a given object. With respect to CO, discursive formation operates under the following paradigmatic lines: Oceanocentrism, Tragedy of Oceans, Epistemic Totalitarianism, Structural Oceanographic Male Chauvinism and Cultural Monochromatism in the Seas. These paradigmatic lines form a system of relationships that sets and unifies specific discursive practices applied to the production

of non-existence, which strategically operated by the logics of social classification, linear time monoculture, and monoculture production and knowledge.

This discursive formation by CO sets the (ethno)oceanographic discourse space; therefore, it is inserted in the scientific discourse order, although it allows pseudo-scientific discursive practices. The cell's process to be risen to the centers of calculation makes this discourse order gather textual profile and institutions, as stated by Maingueneau (2015); knowledge is formed within this space of order and power (ARAÚJO, 2020). According to Foucault (2008), governmental thinking is the constituted knowledge in the State 'governmentalization' process, as expressed by the INC 2004 formulation case.

Just as it is stated by Foucault (2008), a multiple framework of knowledge and expertise was mobilized to design specific understanding about the object of governmental practice and, thus, to support it, within the aforementioned process. INC 2004 aims at regulating artisanal fishery; therefore, its target public (object) is artisanal fishermen, who are the subjects of its lines of governmental thought and actions. When the cell of the epistemic community has risen to formulate INC 2004, a whole frame of references was created and mobilized (lexical items, discursive types, rules, propositions, operational logics, among others) and these references were associated with CO's discursive formation, which sets the bases of the (ethno)oceanographic space.

The constituent discursive formation risen to the centers of calculation operates by stereotyping the artisanal fisherman. This fisherman is seen by the governmental thinking as social category accountable for the fishery collapse in RS and as unable to act without state regulation, as well as to overcome the fishery resources crisis that was assumingly created by this same fisherman.

Based on this discursive formation, INC 2004 means the implementation of a public policy that supports actions by the government to segregate 'wild zones' (highly regulated areas limited to artisanal fishery) and 'civilized zones' (areas under low regulation limited to industrial and invisible artisanal fishing). According to Santos (2010), this differential-action modality is a kind of fascism, the fascism of the social apartheid. Inspection actions of this kind were observed by Moura (2017) during INC 2004 implementation. This is a clear case of modern-colonial political representation of the *other*, as discussed by Taussig (1987).

Final considerations

The study of INC 2004 constituent discourse allows us to make updates in scientific discussions about fishery resources' management in the critic to CO. The production of the artisanal fishermen stereotype by CO highlights that fishery sciences, allocated in biological oceanography, are a bifocal model of natural resources management, rather than a single focus one. It becomes visible to the governmental thinking due to the stereotyping process, and allows regulating its behavior towards the environment, rather than the environment, *per se*. The common sense that CO does not approach and/or produce a representation of the human being is disrupted. It is added to conclusions in

other studies on SO that have shown the multidisciplinary effort that includes human and social sciences to produce an (ethno)oceanographic space by CO. The problem is not the focus (single or bifocal), but the modern-colonial operational logic that leads to a differential action modality typical of the fascism type, the social apartheid fascism.

Due to the herein addressed cell, a frame of references linked to paradigmatic lines is taken to the centers of calculation to compose governmental thinking associated with INC 2004. These paradigmatic lines set the (ethno)oceanographic space of the (constituent) discourse, which is one of the (ethno)oceanographic epistemic space dimensions. This space dimension has a 'grey zone', where pseudo-scientific practices are allowed to produce a modern-colonial representation of artisanal fishermen.

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A produção do humano na Oceanografia Clássica: uma crítica a partir da Oceanografia Socioambiental

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Resumo: Este artigo tem o objetivo de analisar, em uma perspectiva da Oceanografia Socioambiental, a produção do pescador artesanal por um grupo de profissionais que mobilizaram conhecimentos e verdades para a criação de uma legislação de pesca no estuário da Lagoa dos Patos (RS). Como resultado, observa-se uma formação discursiva estruturada por eixos paradigmáticos clássicos da oceanografia que operam no sentido de estereotipificar os pescadores artesanais e influenciam a criação de políticas públicas.

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Artigo Original

Palavras-chave: Oceanografia de saberes; etnoceanografia; território do discurso.

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Gustavo Goulart Moreira Moura
Antônio Carlos Sant'Ana Diegues

Resumen: Este artículo tiene como objetivo analizar, desde una perspectiva de la Oceanografía Socioambiental, la producción de pescadores artesanales por parte de un grupo de profesionales que movilizó conocimientos y verdades para la creación de legislación pesquera en el estero Laguna de Patos (Rio Grande do Sul - Brasil). Como resultado, es posible observar una formación discursiva estructurada por ejes paradigmáticos clásicos de la oceanografía que operan en el sentido de estereotipar a los pescadores artesanales e incidir en la creación de políticas públicas.

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