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ARTICLE

# Controversy management and territorial governance: the role of hybrid forums in a socio-environmental conservation unit

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*Abstract*

This article presents a theoretical-empirical discussion in dialogue with actor-network theory through the concepts of "technical democracy" and "hybrid forums" present in the book *Acting in an uncertain world* by Michel Callon, Pierre Lascoumes, and Yannick Barthe. We assessed the degree of technical democracy in the management of the *Baleia Franca* Environmental Protection Area in Santa Catarina during a seminar to identify and reward emblematic initiatives in environmental and social sustainability and territorial development. By analyzing the controversies and deliberations at the forum, we identified that the management of this conservation unit acted and promoted technical democracy in the territory to a large extent.

**Keywords:** Hybrid forums. Technical democracy. Actor-network theory. Territorial governance. Conservation units.

## *Gestão de controvérsias e governança territorial: o papel dos fóruns híbridos numa unidade de conservação socioambiental*

*Resumo*

Este artigo apresenta uma discussão teórico-empírica em diálogo com a teoria ator-rede por meio dos conceitos "democracia técnica" e "fóruns híbridos", presentes no livro *Acting in an uncertain world*, de Michel Callon, Pierre Lascoumes e Yannick Barthe. Avaliamos o grau de democracia técnica da gestão da Área de Proteção Ambiental da Baleia Franca, em Santa Catarina, durante um seminário para identificar e premiar iniciativas emblemáticas de sustentabilidade ambiental, social e de desenvolvimento do território. Assim, identificamos, por meio das análises de controvérsias e deliberações ocorridas no fórum, que a gestão dessa unidade de conservação agiu e promoveu, em grande medida, a democracia técnica no território.

**Palavras-chave:** Fóruns híbridos. Democracia técnica. Teoria ator-rede. Governança territorial. Unidades de conservação.

## *Gestión de controversias y gobernanza territorial: el papel de los foros híbridos en una unidad de conservación socioambiental*

*Resumen*

Este artículo presenta una discusión teórico-empírica en diálogo con la teoría del actor-red a través de los conceptos de "democracia técnica" y "foros híbridos", presentes en el libro *Acting in an uncertain world*, de Michel Callon, Pierre Lascoumes y Yannick Barthe. Evaluamos el grado de democracia técnica en la gestión del Área de Protección Ambiental de la Ballena Franca, en Santa Catarina, durante un seminario para identificar y premiar iniciativas emblemáticas de sostenibilidad ambiental y social y desarrollo territorial. Al analizar las controversias y deliberaciones que tuvieron lugar en el foro, identificamos que la gestión de esta unidad de conservación actuó y promovió en gran medida la democracia técnica en el territorio.

**Palabras clave:** Foros híbridos. Democracia técnica. Teoría actor-red. Gobernanza territorial. Unidades de conservación.

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## INTRODUCTION

The Baleia Franca Environmental Protection Area (APABF) is a Conservation Unit (UC) created in September 2000. Its management is guided by the principle of participatory management. In 2005, CONAPABF – a management committee for the unit – was created, which includes representation from the diversity of civil society that compound its territory, with representatives from public, business, and non-governmental organizations. One of the main symbols of CONAPABF's participatory management was the preparation of the unit management plan. With the unrestricted participation of the territory's social actors in its preparation, this plan was materialized through a technical document that provides for the zoning and rules of use of the UC (Costa, 2019; Delfino, 2017).

Recognizing the actions of the social actors of this UC after the formulation of the management plan is an opportunity to recover and strengthen the memory of its trajectory and contribute to the replication and dissemination of such actions throughout its territory, and beyond. Thus, in the second half of 2020, CONAPABF published a public notice for projects to be selected for an online seminar, given that the country was in a period of social isolation due to the COVID-19 pandemic. The intention of the seminar, called *Faróis da APA da Baleia Franca* (Lighthouses of the Baleia Franca Environmental Protection Area), or simply *Faróis*, was to identify and reward emblematic initiatives of environmental, social, and territorial development sustainability.

CONAPABF's trajectory and challenges make us reflect on this empirical phenomenon through the theoretical lens of actor-network theory (ANT) and its most current developments, known as "after ANT." An example of these new developments is the approach proposed by Michel Callon, Pierre Lascoumes and Yannick Barthe in an essay on technical democracy, in counterpoint to representative democracy, in the book *Acting in an uncertain world*, not yet translated into Portuguese. In this work, the authors develop the concept of "hybrid forums," which are spaces for discussion and negotiation between heterogeneous social actors, based on controversies that involve a significant level of uncertainty, with the aim of formulating and deliberating on technical and social standards. This process aims to promote dialogue and the exchange of knowledge, with the objective of achieving a broad scientific, social, and cultural understanding resulting from the controversies, also indicating negotiated recommendations regarding actions and decisions debated by the group (Callon et al., 2009).

For authors such as Alcadipani and Tureta, these new developments in ANT have made it more attractive to organizational studies, as they "[...] recognize that established orders are not inevitable and can be in other ways, reject positivist assumptions and do not follow the 'means/ends' rationality, which reinforces the established state of things" (Alcadipani & Tureta, 2009, p. 415). Thus, the aim of this research is to contribute to the debate in the field of organizational studies, mobilizing theory to address a complex empirical object, aiming to understand to what extent the processes and dynamic for organization of the *Faróis* seminar show that CONAPABF's management acts in accordance with the precepts proposed by the theoretical framework of technical democracy.

In this article, we chose to focus our analyses on the main controversy that mobilized the debates during the seminar preparatory meetings: the APABF seal of good practices. We believe that this option demonstrates an understanding of the process of organization and operation of a hybrid forum and its interconnection with the concept of technical democracy, as proposed by Callon et al. (2009). Despite the focus on this main controversy, others emerged with less intensity during the seminar preparatory meetings. Therefore, in order to analyze this main perspective and the process necessary for holding the seminar, our analyses focused on two sets of analytical criteria, which sought to assess the degree of dialogue and of implementation of the procedures adopted throughout this first APABF seminar. The results of the performed analyses were based on these criteria.

## ACTOR-NETWORK THEORY AND ITS NEW DEVELOPMENTS

ANT is an approach to social theory that originated in the 1980s, and continues to be updated. Its foundation dates back to the early studies of Bruno Latour (2012), Michel Callon (1986) and John Law (1986) (Alcadipani & Tureta, 2009; Braga & Suarez, 2018; Cavalcanti & Alcadipani, 2013).

The origins of this theory are mainly linked to three seminal contributions in connection with ontological, epistemological, and methodological aspects of science: studies by Latour on the "production of scientific facts" (Latour & Woolgar, 1997);

contributions by Callon (1984) regarding the "sociology of translation," resulting from empirical research on scallop production in the Bay of St. Brieuc; and research by Law, whose investigations into scientific practices move between the frontiers of the social and natural sciences (Camillis et al., 2020; Law & Lodge, 1984).

Although this approach guides analyses for various interdisciplinary fields of knowledge, ANT began as a branch of science and technology studies (STSs), which developed around the debate about the boundaries between society and technologies (Bijker & Law, 1992). STSs confront the prevailing notions that science and technology are produced by strictly rational means, opposing common sense, since they do not consider the act of producing science or technology an activity exempt from human controversies, that is, from sociocultural influences. The influence of Michel Serres (1996) on Latour's work is also noteworthy, especially in relation to the critique of modernity and the impossibility of separating science from the external world, as well as on the anthropology of sciences, which "[...] expresses the original notion of the interweaving of culture and scientific practice" (Tonelli, 2016, pp. 384-385).

In an article from 1992, Law summarizes the trajectory, up to that point, of the thought that composed ANT and its main concepts and points of tension. He recognizes that ANT had its beginnings in debates related to the sociology of science and technology, and that its authors understand knowledge as a social product, rather than something only accessible through some privileged scientific method, stressing that knowledge can be seen as a product or effect of networks of heterogeneous materials. This knowledge is comprehensive, encompassing everything from that derived from human agents to the one of machines and organizations. In this sense, agents are actants, according to Latour (1999) a more appropriate term for the different types of arrangements carried out by humans and/or non-humans. Thus, ANT proposes a theoretical framework that breaks the epistemological separations that bring dualities to scientific thought, examining phenomena based on a reconnection between the social and nature, the human and the non-human, or the macro and the micro.

Through this understanding and to capture how these social phenomena occur, ANT proposes the concept of "generalized symmetry," which does not establish, a priori, a starting point for the empirical analyses carried out by researchers (Braga & Suarez, 2018; Latour & Woolgar, 1997). Latour adds that, after the process of deconstruction and epistemological repositioning, what the researcher finds is a place that is far from empty, since it is there that quasi-objects and quasi-subjects proliferate. Far from being unthinkable, it becomes the terrain of all empirical studies conducted on networks" (Latour, 1994, p. 95).

In accordance with Law, from a social point of view, what makes an agent a social actor is not a human existence, but rather being part of a network of heterogeneous relationships or suffering an effect produced by a network. Thus, it is possible to extrapolate and understand that "[...] the same is true for organizations and institutions: these are more or less precariously patterned roles played by people, machines, texts, buildings, all of which may offer resistance" (Law, 1992, p. 4).

ANT is also known as the "sociology of translation," according to Callon (1984). This concept is essential for understanding what action is within ANT, linked to the notion of a process between actors arranged in networks, as opposed to the notion of accomplishment. The idea of translation is one of the ANT cornerstones, as is the controversy. For Callon (1984), translation refers to the choices and room for maneuver made by actors. Translation flows "[...] refer to movements within the network, distributed among an infinity of participants, which become indispensable for any action to occur" (Braga & Suarez, 2018, p. 222). Such translation movements begin when interests and possibilities converge and actors negotiate, demarcate new limits, and change in an attempt to achieve something. These interactions "[...] are never neutral or without consequences" (Braga & Suarez, 2018, p. 222), leaving traces and transformations.

In retracing the ANT origins, which emerged at the epicenter of a scientific and economic controversy regarding the causes of the decline of the maritime scallop population in the Bay of St. Brieuc, Callon (1984) highlights that, when proposing the sociology of translation, he was, in reality, describing a new approach to the study on power. At the time, the author presented the basic mechanics of the translation process, separating it methodologically into four distinct moments: problematization (how to become indispensable), interessement (how to "lock" allies in this position), enrollment (definition and coordination of functions), and mobilization (spokespeople' representativeness and strength). In conclusion, he observed that translation is a dynamic process, and not a complete achievement, and therefore fallible.

Law (1992) indicates that, when proposing the concept of translation, ANT describes the social order as a precarious process, which is not definitively stabilized or finalized. According to the author, there is no social order whose center is solid, stable and unique, but rather social orders and resistances. However, this does not mean that there are many centers of power with a certain equality of action, but rather that "[...] the effects of power are generated in a relational and distributed manner, and nothing is ever sewn up. And that, to use the language of classical sociology, ordering (and its effects including power) is contestable and often contested" (Law, 1992, p. 5). Thus, the author assesses that analyses of disputes over social ordering are central to ANT.

Alcadipani and Tureta (2009) add that, when discussing the process of social organization, ANT, in addition to formulating the idea of translation, also used notions of action and remote control, through the meaning of "immutable mobiles" which gathers responses and tables that summarize, simplify and classify data, which can be on sheets of paper (or cell phone screens) and formatted as tables or graphs. Their data can be archived, shared, pinned to the wall and/or combined with other data. We know that controversies about the accuracy of such information will begin to emerge, as well as that other elements will be developed in opposition to the previous ones, fueling the controversies and accelerating the cycle of accumulation, aiming to reverse the balance of power between those who are in a dominant position "and those who are dominated" (Latour, 2000, p. 370).

Immutable mobiles "[...] are forms which are able 'to fix' knowledge and allow it to be disseminated beyond its point of origin" (Alcadipani & Tureta, 2009, p. 409). Examples of immutable mobiles include geographic maps, the Gross Domestic Product (GDP), the Balance of Payments, and descriptions of virus behavior (Hetherington, 1997; Latour, 2000).

In order to avoid oversimplifying the approach, Alcadipani and Tureta, among other authors, state that it is necessary to be careful when employing some generalized notions in the use of ANT, since they can be used to represent the process of social ordering in a very simplistic manner and, at the same time, disregard differences and complexities, "[...] something problematic for any critical perspective that seeks to explore all the complexity associated with relations that establish orders (e.g., power)." (Alcadipani & Tureta, 2009, p. 410). Nonetheless, the same authors comment that, over the years, this simplistic ANT application generated debates and criticisms, including that ANT neglected political issues, which, in turn, led its authors to propose new updates, which became known as "after ANT" and whose main objective fell on the notion of process, with respect to the forms of social ordering.

As stated by Law, there is not just one mode of ordering in modernity, but rather, there are several possible ones. ANT proposes that its objects maintain "relational contingencies" between themselves, instead of considering the world as a "big epistemic block" (Law, 2002, p. 92). This presupposes dealing with empirical objects in an intermediate and transitory manner, immersed in networks of relations, instead of assuming that the researcher's knowledge will capture some supposed truth of the object, that is, some type of epistemic essence. It is in this sense that the author describes ANT as "[...] a relational and process-oriented sociology [...]" (Law, 1992, p. 389). This sociology treats agents, organizations, and technologies as effects or consequences of interactions in a network of heterogeneity, hybridization, uncertainty and resistance.

In an article published on the eve of the 2000s, Law indicates that "after ANT" emerged because the success and simplistic use of ANT have been converting it into a "[...] smooth and consistent 'theory' [...]" (Law, 1999, p. 1), ruining its central tension, essential to its foundation and which is intentionally present in its name, an oxymoron that brings together antagonistic terms such as actor (agency) and network (structure). This same tension is clearly expressed in the concept of translation, denoted in the richness of meanings and wordplay of this word, which can be understood as the act of translating. In this case, translation can refer simultaneously to a distortion of meaning, resulting from the origin of the term "betray," and to an act of equivalence between meanings.

Law (1999) goes on to highlight that, however, this process of rise to fame underwent by ANT led to quite different results in relation to the original proposal, since the simplifications, labels and abbreviations of its name, terms, and concepts distanced it from the capacity to grasp complexity and heterogeneity. He affirms that, in social theory, simplification should never replace complexities, and that it is essential to explore ways of dealing with tensions, rather than aiming for them to disappear. Thus, "after ANT" symbolizes the rapprochement with complexity, demarcating that the singularity of the theoretical-methodological contribution "[...] lies in a modest willingness to live, to know and to practice in the complexities of tension" (Law, 1999, p. 12).

After more than 20 years, research anchored in the founding axes of that proposal has expanded the debate beyond the frontiers of STSs. This expansion of "after ANT" was pulverized, according to Gad and Jensen (2010), into a wide range of approaches and objects of study, which also occurred, according to Callon, with the field of STSs: "It can be said that this field was a victim of its own success, since, having exported many of its results, methodologies and concepts, it did not consolidate itself as a specialty in the classical sense of the term, with a well-defined object of study" (Callon, 2008, p. 305). Among some of these new approaches, it is worth highlighting the works of Michel Callon, Fabian Muniesa and Donald Mackensie, who directed their studies towards the economy and its markets, mobilizing the concept of "performativity," derived from J. Austin's philosophical studies on language, as well as the contributions of Annemarie Mol and her approaches to multiplicity and political ontology (Callon, 2008; Gad & Jensen, 2010).

In a recent article by Camillis et al. (2020) on the adoption of ANT and its repercussions on research carried out in the field of business administration in Brazil, the authors identified the freer use of ANT, called "near ANT," based on international research presented by Blok, Farías and Roberts (2020). In these new contributions, the authors use ANT as an inspiration, with the intention of not canonizing it, in a proposal to "experiment with ANT from ANT" (Camillis et al., 2020, p. 99).

The new developments of ANT have made it more attractive to the field of organizational studies, since they reinforce the links between established orders and their different forms of social hybridization, distancing themselves from the classic positivist presumptions and their rationalization processes. In organizational studies, its contribution stands out for redirecting the focus of analysis on the organizing process and its interests, such as power relations, technologies, organizational changes, market mechanisms and knowledge management, among others (Alcadipani & Hassard, 2010; Alcadipani & Tureta, 2009; Tonelli, 2016; Orlikowski, 2007).

An example of these more recent ANT productions is the essay entitled *Acting in an uncertain world*, published in 2009 by Michel Callon, co-authored with Pierre Lascoumes, and Yannick Barthe. In this essay, the authors state that the technoscientific development experienced since the last decades of the 20$^{th}$ century, especially with the expansion of the Internet, has brought about significant transformations (social, communicational, etc.). As a consequence, constant reformulations have affected the procedures used to solve sociotechnical problems, given that, with new technologies, ordinary citizens have gained agility in communication and expanded access to diverse sources of information and data, whether reliable or not.

This new level of access to information has made scientific uncertainties clear to the public. At the same time, it has expanded the channels of communication between people, enabling greater sharing of ideas and the emergence of new arguments for debating disputes, leading to questions and doubts about decisions previously made and hesitation in deciding what is best from now on.

This reopening of discussions, previously considered relatively peaceful, as well as the multiplicity of opinions and inaccuracies regarding the new disputes, highlights more than just a world of scientific uncertainty. These tensions and fraying of social reality require recognition and acceptance that we live in an unlikely world, revealing a profound need for political and administrative change in the handling of controversies and decision-making (Callon et al., 2009).

Establishing this type of social organization takes time. The act of negotiating joint solutions, listening to the actors involved and debating possible solutions requires, in addition to the classic approach of the functionalist administration of Fayol (1994), planning, organizing, coordinating, commanding and controlling – politics. In other words, an innovative, highly capable and possibly more democratized governance that, aware of other possible paths – for example, deliberately lying to confuse public opinion, silencing those who express themselves in a contrary manner or acting through authoritarian responses – chooses to democratize the debate in the face of uncertainty. By taking this path, at first, "[...] it is decided not to decide, but to take time to explore the conceivable options before deciding" (Callon et al., 2009, p. 16).

Callon et al. (2009) argue that an alternative to absorb the controversies generated by uncertainties is to lay the foundations to enrich representative democracy where there are structures that enable and encourage effective and lasting collaboration between laypersons and experts, which is why it is also called "technical democracy." In this new meaning, democracy is designated by the authors as dialogic, as it contemplates the continuous interaction between its parts.

From this point on, the differences between the concepts of uncertainty and risk are demarcated, which are not used by the authors as synonyms. Therefore, risk is understood here as an identified danger, already defined and described with its unfolding in specific events – we do not know if such events will occur, but they may occur. Thus, the notion of risk used by the authors is closely associated with that related to rational decision-making.

Having made these considerations, "It is easy to see why the notion of risk, thus defined, does not enable us to describe situations of uncertainty or to account for the modes of decision making in such contexts" (Callon et al., 2009, p. 21). In reality, science has often demonstrated its inability to list possible scenarios and describe each one accurately, which means that it is not feasible to anticipate the consequences of decisions that, apparently, will be made, since there is not enough effective knowledge of all the options. The creation of scenarios is hampered by persistent cores of ignorance, just as the behavior and interactions between the institutions that compose such scenarios are enigmatic. In the words of Callon et al. (2009): "We know that we do not know, but that is almost all that we know: there is no better definition of uncertainty" (Callon et al., 2009, p. 21). The authors conclude that, in situations of uncertainty, the only possible option is to question and debate the following points, especially when we begin new research: "What do we know?" and "What do we want to know?" (Callon et al., 2009, p. 21).

Thus, the authors present technical democracy through hybrid forums as a method of action in an uncertain world. In general, the organization of a hybrid forum occurs after the perception that uncertain threats, that is, those with an imprecise assessment, relating to one or more controversies, will occur over time. These controversies are not treated in a simplistic and reductionist manner, as ideological battles or an opportunity to exchange ideas through communication. They are considered powerful means to explore a range of possible worlds, providing an articulation of elements that favor the improvement of democracy. Despite these uncertainties, and, in a way, even because of them, certain decisions need to be made. Often, the controversy is not only about the procedures for finding a solution; it is a step before, in the characterization of the dangers, given that there are those who argue that there is no threat (Callon et al., 2009). In hybrid forums, controversies are addressed in public spaces. These spaces are called this way because they are open and allow groups to meet to discuss technical options related to the collective. They are hybrid for two reasons: because the group and its spokespeople are considered heterogeneous – composed of experts, politicians, technicians, and laypersons – and because the issues and problems addressed are evaluated, in an interdisciplinary manner, from different aspects and fields of knowledge – physics, ethics, economics, physiology, etc.

At the same time, Callon et al. (2009) worked to develop an approach based on the rules for organizing hybrid forums, suggesting that a forum should start with problems encountered by the social actors involved in the issue and that, throughout the process, the analyses produced and the recommendations for actions developed should be monitored, resulting in the main lessons learned based on the accumulated experience of the dialogue being highlighted.

According to the authors, there are six levels to be assessed: three linked to the level of dialogue in the process and another three associated with the characteristics of the implementation of the forums. The criteria relating to the level of dialogue will vary on a scale from strong to weak and are detailed below.

1. **Criterion of Intensity:** verifies whether, from the beginning, the procedures allowed close collaboration between non-specialists and specialists with regard to the production of knowledge and the exploration of possible worlds, bringing isolated experimental research closer to field research.
2. **Criterion of Openness (diversity, autonomy and empowerment):** assesses the diversity of groups active in the debate, examines the extent to which new groups are invited to express and exchange their views and negotiate, and observes whether redefining emerging identities is permitted and encouraged, rather than maintaining a single spokesperson. The more groups there are and the greater the diversity and individual empowerment, the more meaningful the debate tends to be.
3. **Criterion of Quality (seriousness and continuity):** analyzes the quality of collaborations and discussions, whether the protagonists are able to present their arguments and claims, and also responds to objections with the necessary precision and relevance, demonstrating whether interventions and discussions are occasional or lasting.

In addition to the criteria presented above, the authors continue with the implementation criteria, which will vary on a scale from high to weak.

1. **Resources and training:** for the group to be representative, all voices, especially the less favored ones, need to be heard and influential. To this end, it is necessary to ensure that time, money, and training will be available to prepare them. According to the authors, when it is not feasible to prepare them, this asymmetry of voices needs to be mediated, by providing for the training of mediators and/or political organizers, with the clear task of facilitating the entry of actors previously excluded from the public space.
2. **Transparency:** it applies only to the procedures themselves and to the way in which the public space is structured and organized. It involves finding ways to monitor and track where contributions are coming from, enabling the recovery of positions already taken, as well as the organization of rules regarding the presentation of arguments and counter-arguments. If necessary, it provides for appeal to a judge when any party assesses that the procedures are not being respected.
3. **Clarity (publicity of rules):** To avoid manipulation, procedures and other actions must be previously informed to all participants. There should be no obscurity regarding agreements on conduct and, once established, commitments must be firm, avoiding going back on the agreed rules. Thus, a procedure will be more dialogic as it presents strong and high values for the different criteria.

According to Callon et al. (2009), if forums are developed without any rules to organize the debate, the field will be free to perpetuate and reproduce the same logic that prevails in power relations, with the exclusion of the weakest voices. In the authors' view, dialogic democracy should strive to strengthen the weak, not weaken the strong. They also state that the effectiveness of any deliberative method, including hybrid forums, is directly linked to how well these processes are integrated into political decision-making actions, avoiding the trap of open and fruitful debates that are ignored by decision-makers. Similarly, they argue that the main reason for deliberative procedures is the ability to gradually produce a common world or one that is known by those who compose it, so that the search for a common world must be continuous, guaranteed by stable dynamic and structure.

In short, in the authors' understanding, technical democracy depends on processes that promote an organized debate to address political and scientific uncertainties, enabling awareness and management of these uncertainties. Callon et al. (2009) understand that the criteria and means presented by this approach are mere indicators for the construction of dialogic procedures, but that no procedure will possibly be able to encompass the complexity of exploring and, at the same time, articulating the entire dynamic of a democratic dialogue. Thus, depending on the controversy level and maturity, a combination of procedures may be necessary. They state that it is important to disassociate oneself from beliefs in definitive procedures and methods, maintaining constant reflection and debate on those that are in force, analyzing whether they meet the need of the moment or it is necessary the creation of something new. In this way, they credit the social sciences with part of the responsibility for promoting reflection on the analysis and improvement of such procedures.

## TECHNICAL DEMOCRACY: PRACTICAL CASES

Nichole Dusyk (2011) presented the use of hybrid forums applied to the evaluation of the construction of a third dam, called Site C, on the Peace River, in Canada. According to the author, the first two dams, which transformed the landscapes and communities of the region, were built before 1970 with little or no public debate. Years later, when the third dam project was proposed, the subject was already controversial, as there was greater awareness of the environmental and social impacts, political stress, and financial aspects related to the construction; therefore, the government was already better equipped with tools and institutions to deal with requests for certification of these constructions.

Dusyk reports that, despite some limitations, the first public hearings for the construction of the third dam were a sort of hybrid forum: a space for heterogeneous actors to meet and for various types of rationalities to position themselves in favor or against the construction. These meetings led a wide range of stakeholders – including citizens, organizations, independent consultants, and government ministers – to express their positions for the direction of the region's energy planning. The author states that there was even an opportunity to challenge the deliberative process itself, with some interested in the promise of jobs in the region carrying banners with the following words: "Stop the hearings and start construction."

According to her, in May 1983, the deliberative recommendation was unfavorable to the immediate start of construction of the third dam and, therefore, the government rejected the request for the project certification. Six years later, in 1989, the project was launched once again, and once again the public hearings were not favorable to its recommendation. This repetitive positioning seems to have led to a cooling of the proposal for projects of this magnitude, considering that, for more than a decade, the installation of no large hydroelectric plants was started in the region.

According to the author, it was only in 2007 that a new movement for the construction of a third dam began. The network of social actors interested in the construction, as well as the political environment, learned from the experience of previous public hearings, expanding their arguments, organizing themselves politically, and planning their actions well. In more recent times, the energy generated by a hydroelectric plant had the appeal of being considered clean and renewable, in line with regulations that provided for the control of carbon emissions and the mitigation of climate change. The project, in this more recent phase, sought to justify itself based on this scenario and on the fact that, since the region already had two dams, the positive and negative externalities of a third construction would be increased and reduced. Furthermore, there was the formalization of the government's interest in exporting clean energy to the United States.

Even so, the author highlights the persistence of many controversies regarding the current case. Uncertainties regarding the environmental and social impacts related to the construction, as well as the actual financial gains and the real political interests involved, were confronted by various social actors. There was controversy regarding the conduct of the first public hearings held in this new phase. There was a perception among the participants that the issues were already being directed towards the consequences of the construction, bypassing the central controversy, that is, whether or not the population was interested in the construction of the third dam.

As a result, some participants proposed alternative forums. In the absence of these, questionnaires were sent by mail by citizens to organizations interested in the construction and to radio programs and newspaper editorials, increasing the repercussion of the controversies in the region. However, from 2010 onwards, without a recognized deliberative environment for public consultation, as occurred in the 1980s, laws were enacted and the Executive branch made decisions confirming that the assessment reports for this construction would be followed, despite any recommendations from deliberative processes, which led to the perception that those interested in the construction would be seeking ways to actively avoid the type of debate promoted by a hybrid forum.

The author concludes that the case of the Site C hydroelectric plant highlights the transformative power of hybrid forums, but warns that this should be viewed with optimism and caution, when trying to anticipate the effects of participatory forums, especially when they emerge from influential networks of actors, such as those in the electricity sector (Dusyk, 2011).

One of the pioneers in evaluating the use of hybrid forums in South America, Ignacio Farías, whose studies analyzed how the management of forums was used to create a reconstruction plan for a Chilean city affected by the 2010 earthquake, found that the concept and structure of hybrid forums are beginning to be used, in an alternative way, as a methodology for companies, managers, and corporations. The author tells us that, after the earthquake, many Chilean cities needed to be rebuilt and that most municipal administrations were incapable of conducting these reconstruction processes. As a result, two types of exceptional government bodies emerged: public-private consortia and a regional planning office. Furthermore, to deal with the task of repairing more than 300,000 homes, the Chilean central government introduced new market arrangements, adapted to the new regulations, which differed from those existing in the housing market.

Among the many localities affected by the earthquake, the city of Constitución stood out. Through a public-private partnership (PPP) financed by a major local industry, a consultancy applied the concept of hybrid forums – bringing together architects, engineers, managers, and citizens – so that, in an open manner and through a more democratized process, it could plan the urban reconstruction of the city. Farías (2016) indicates that this innovation in governance give prominence to the project, which gained notoriety in architecture and design theory circles.

Nonetheless, there seems to be evidence that the entire process may not have been conducted in such a democratic manner. In his article, the author assesses three critical tensions in hybrid forums: the need to differentiate between what it is conceptually and how it is used as a mechanism, since it was implemented by a Chilean consulting firm financed by a large local industry, and as a tool to manage controversies that, in some situations, are motivated by uncertainties generated by the industry itself; the conflict between emerging issues and the procedural dynamic designed for the collaboration of actors, showing the limitations that forums may face when having to deal with preexisting disputes; and the difficulty in being, at the same time, a space for technical dialogue and a place of political voice for other forms of claims, which are not oriented towards reaching socio-technical agreements.

Thus, the author concludes that the experience of hybrid forums in Constitución suggests that the most urgent challenge is not only to respond democratically to uncertainties and concerns, but also to participate in the creation of uncertainty. Or, even, that the key challenge of technical democracy is not to propose a symmetrical approach of specialized knowledge to sociotechnical uncertainties, but rather to participate in the production and development of uncertainties themselves.

Amilien et al. (2019), who more recently applied the proposal of hybrid forums in Norway and the United Kingdom, analyzing uncertainties related to controversies in local agri-food systems, state that, unlike conventional research that uses public engagement methods – for example, focus groups, consensus conferences and other deliberative processes –, hybrid forums involve a more dynamic and democratic mechanism. The authors highlight positively the conjunction between action and reflection proposed by hybrid forums with the purpose of building a common project around a given controversy.

Their studies allowed suggesting a new generation of hybrid forums, called *hybrid forums 2.0*. According to the authors, this new nomenclature aims to position the original term as a deliberative experiment necessarily used in a context of equality and democracy. It also aims to reinforce the method and distance it from any ambivalence. For them, the innovation promoted results from the inclusion of three specific actions: presenting objective themes and questions, avoiding general debates; valuing and investing in the organization of the event, offering high-quality presentations and materials, in addition to providing time and well-dimensioned space for the debate; and introducing a workshop with openness for participants to define themes, sub-themes, and choose speakers and experts.

## METHOD

An empirical study was conducted using a qualitative approach, with a research strategy defined as a single case study. The main instruments for collecting and analyzing data were based on the following procedures: participant observation by the researchers, who composed the commission for the *Faróis* seminar, recorded in a field notebook, systematizing and analyzing the information gathered a posteriori; document collection and analysis, and researchers reflexivity in relation to the phenomenon studied.

On April 12, 2020, an exploratory documentary search was conducted across the whole Capes journal portal database, using the words “fóruns híbridos” (hybrid forums) or “fórum híbrido” (hybrid forum), with peer-reviewed articles in the Portuguese language. This search returned 10 articles. For comparative purposes, an equivalent investigation was conducted using the English words “hybrid forum(s)”, returning 243 articles.

On July 11, 2020, a complementary exploratory search was conducted on the same portal. At the time, using the term “democracia técnica” (technical democracy) and applying the same filters, the results totaled three articles. For comparison, on the same date, a similar search was conducted using the English term “technical democracy,” resulting in 171 peer-reviewed articles. Thus, starting from the confirmation of gaps in scientific studies related to technical democracy and hybrid forums in Brazil, supported by theory and notable productions on the subject, we proceeded to its application in the empirical field.

APABF was chosen for being characterized as a UC created in the 2000s and managed by the Chico Mendes Institute for Biodiversity Conservation (ICMBio), an environmental body responsible for proposing, implementing, managing, and protecting federal UCs. The formation and institutionalization of APABF is intrinsically linked to the historical process that culminated in the 1988 Federal Constitution, a milestone in the process of redemocratization of Brazil. This organization, through its management

committee, CONAPABF, has stood out over the years among the numerous Brazilian UCs in the area of management, given that it has promoted, for over 15 years, a recognized participatory governance with the representation of broad society segments. The publication of its management plan is one of the main milestones of this participatory management (Costa, 2019; Delfino, 2017). APABF is also recognized for its excellent governance, due to its ability to deal with territorial controversies, focused on issues regarding the use and occupation of its territory.

Access to the organization was made possible because the Universidade Federal de Santa Catarina (UFSC) has been involved in the CONAPABF since its creation. Thus, in addition to the participation of a UFSC advisor as a member of the commission for the preparation of the *Faróis* seminar, there was also the active participation of a researcher, co-author of this article, to collect information and observe the seminar organization process. Such members in the seminar commission were decisive in making this research possible.

The phenomenon observed, that is, the meetings that preceded the seminar, proved to agree and be relevant to the research, since the seminar was created to promote knowledge and the exchange of experiences – identified as a set of good practices to be followed by the actors in the territory – of the most varied themes that permeate the management of the UC and its surroundings.

Thus, in order to achieve the proposed objectives, the case study was adopted as a research strategy, with collection of data and information, which were complemented by participant observation by the two researchers who participated in the seminar commission. The observations were carried out at the commission meetings for the seminar, in which the commission members responsible for holding the seminar were considered the subjects of this research.

Over a period of four months, a total of six virtual meetings were held, synchronously and asynchronously, recorded, with a 2-hour duration, on average, in addition to numerous interactions between the participants, recorded via WhatsApp and e-mails. The meetings were described in detail in the researchers' field diaries. Data collection was complemented, aiming at an in-depth understanding of the case, through documentary research: survey on publications, documents (minutes of the committee meetings, APABF reports and publications in the official journal), websites and academic research already published on the same subject.

Qualitative research assumptions were also adopted based on the researcher reflexivity in relation to the phenomenon studied, a central component of qualitative research, materializing as a robust validity criterion in relation to the procedures used, as stated by Denzin and Lincoln (2006), given that the different positions of the research subjects, expressed in different types of support and records, could be constantly confronted.

During the fieldwork, it was possible to observe the CONAPABF members' plurality of experiences and knowledge. To exemplify the heterogeneity of the individuals who composed the seminar commission, we highlight the presence of professors and technicians specialized in different themes, local social leaders, businesspeople and NGO managers, that is, a diverse range of knowledge and interests. In a given situation, for example, we watched an expert to express herself regarding a certain subject that was being debated. However, as soon as a new discussion agenda emerged, the roles between experts and non-experts were reversed without prior warning. The group, despite being quite heterogeneous, demonstrated considerable capacity for dialogue, due to the constant debates in the CONAPABF ordinary assemblies, allowing the emergence of dynamic learning processes among the actors.

Finally, on December 7, 2021, the *Faróis* seminar was held by CONAPABF. The selected initiatives were presented in virtual panels grouped into five themes: ecotourism in Conservation Units, sustainable management in the use of solid waste, environmental education, agroecology, and traditional communities. The selected initiatives received the CONAPABF seal of good practices. On that occasion, the committee also made public its intention to hold new seminars in the following years.

## ANALYSIS AND DISCUSSION OF RESULTS

The first step towards holding the seminar was the approval, at a CONAPABF plenary meeting, where its members agreed to this empirical research and the participation of one of the researchers in the seminar commission, in order to assist in managing the event activities. The other researcher also joined the seminar commission, acting as a representative from UFSC in CONAPABF.

The preparation for the event included a working group. Thus, autonomously, 12 CONAPABF members volunteered to form the seminar commission Aiming to establish rules, criteria and conditions, a public notice was drawn up for the selection of projects developed in the territory, whose design involved collaboration and open debate among the CONAPABF members. In addition to providing the criteria for registration and selection of initiatives, the document included the creation of a seal of good practices for the APABF territory, which would be granted to all projects selected by the evaluation commission.

Soon after, the public notice was published on the CONAPABF and UFSC websites, as well as via WhatsApp groups indicated by leaders of the territory At the end of the initial deadline and after an extension of project submission date, the seminar received 24 registrations, made by organizations – state, business and civil society – and by individuals, all seeking to achieve the recognition for their projects and developed actions, provided for in the public notice, as representing a set of initiatives to promote social and/or technological innovation, with positive results for the territory, aligned with the guidelines and actions of the unit's management plan.

The diversity of projects registered by organizations and individuals, in addition to the thematic scope, related to different forms of action and intervention in the territory, was a source of great satisfaction for CONAPABF, since they expressed the public appreciation for participating in the forum and the search for public recognition. However, while the high number of projects registered indicated that the seminar was on the right track, on the other hand, a growing feeling that nothing could go wrong required a redoubled commitment on the part of the seminar commission to ensure that the event continued to be well-organized. This reinforced the commitment of the organizing commission to the projects submitted, with the aim of minimizing risks and potential questions, since the chosen initiatives would be recognized with the seal of good practices.

The discussion about the implementation of this seal had been initiated by the CONAPABF members years before. Nevertheless, its inclusion in the seminar public notice occurred without prior discussion among the commission members. As a result, the topic emerged as one of the main controversies in the commission preparatory discussions. The establishment of criteria for the seal issuance was linked to CONAPABF's central challenge: balancing economic, social, and environmental interests with the purpose of achieving sustainable development of the territory. It is also interesting to note that the controversy over the seal issuance concerned a sociotechnical uncertainty that, according to the proposed theory, could be deliberated and decided by hybrid forums that promoted debate between experts and non-experts, strengthening technical democracy (Callon et al., 2009).

During the commission meetings, it was clear, given the number of doubts and questions about the seal, that the issue needed to be further explored. Would the seal be granted to the organization that sponsored the initiative or to the initiative itself? Would there be a risk of it being used inappropriately by organizations, especially business organizations, as, for example, an inappropriate marketing campaign? What body would issue it: CONAPABF or ICMBio? Would it be associated with a period or an edition?

After several commission meetings to address these issues, the doubts persisted and took on new dimensions with the participation of other CONAPABF members. The dialogue was respectful and intense, culminating in a final decision: the commission understood that it was necessary for the next steps of the seminar to be deliberated by a broad quorum, during the CONAPABF plenary meeting, in order to socially and politically legitimize the decision taken. Thus, the controversies were absorbed and the uncertainties were placed at the center of the debate.

Reexamining the recording of the meeting held in December 2020, via Zoom, it is possible to verify the result of the deliberation and approval process, which was recorded in the meeting minutes:

> We received 24 applications, which were evaluated. Need to deepen the evaluations and postpone the seminar to take place in 2021. The seal will only be granted to initiatives that are in progress and have some result. The seal will be for good practice, and not for the institution in charge. The seal will be valid for two years and will be granted by CONAPABF as recognition for the sustainable initiatives of the Conservation Unit. The seminar should also take place every two years. It is suggested that the evaluation should be carried out in greater depth, through interviews with the proponents of the initiatives, and guided visits will be requested so that the evaluation commission has more information to evaluate each practice.

During the forums that preceded the seminar, it was possible to interact for more than 10 hours in meetings with the various actors that compound CONAPA and analyze their behavior in the debates. It was also possible to verify in all of these interactions whether there was adherence to the criteria of technical democracy proposed by Callon et al. (2009). As a result, we present in the tables below a summary of our analyses regarding the degree of dialogue and implementation of the procedures adopted throughout the seminar.

**Box 1**
**Degree of dialogue between forums for holding the seminar**

| CRITERION | VALUE (STRONG/WEAK) | ASSESSMENT |
|---|---|---|
| **Intensity:** degree of early involvement of laypersons and experts in the exploration of possible worlds. | STRONG | From the creation of the notice and its review to the evaluation of applications, the procedures adopted by CONAPABF allowed close collaboration between non-specialists and specialists in the production of knowledge and the exploration of possible worlds. |
| **Openness:** degree of diversity of the groups consulted and their independence; degree of control over the representation of the spokespeople of the groups involved in the debate. | INTERMEDIATE | The evaluation commission, like CONAPABF, included representatives from the public sector, civil society organizations, and users of the territory, indicating the diversity of the groups consulted and their independent and autonomous positions. We observed that their spokespersons did not exercise control when other actors from the same sector (or from other sectors) expressed themselves, and the redefinition of spokespersons was permitted and encouraged. Point of attention: the seminar commission only had one member from outside CONAPABF: the researcher. |
| **Quality:** degree of seriousness of the voice; degree of continuity of the voice. | STRONG | It is clear that the CONAPABF members have already been trained to engage in dialogue. They tend to participate actively and, in general, present their arguments and demands, and respond to objections with precision and quality, in a lasting manner. Therefore, they participate in the composition of the collective and are heard and influence the debate actively. |

Source: Elaborated by the authors.

**Box 2**
**Degree of implementation of the procedures for holding the seminar**

| CRITERION | VALUE (HIGH/WEAK) | ASSESSMENT |
|---|---|---|
| Equal access to debates | INTERMEDIATE | The voices expressed were heard and could influence the debate. However, the technical knowledge required to develop the evaluation criteria and prepare the reports indicated a mismatch in the level of training among the commission participants. It is recommended that they should be trained to perform this activity, with a view to broadening and enriching the debate on the evaluation criteria – especially for future seminar editions – so as to avoid it being restricted to those who were already qualified for the activity. |
| Transparency and traceability of debates | HIGH | Public notice, registrations and other data were reviewed and/or shared in full among all CONAPABF members. The meetings and plenary sessions were recorded and were previously agreed upon. The dissemination and sharing of the agenda and minutes made it possible to monitor and track the information, in addition to reviewing the rules regarding the presentation of arguments and counter-arguments. In this way, the procedures and different actions were made public for all participants. |
| Clarity of the rules organizing debates | HIGH | The participants demonstrated prior training in dialogue and debate, following the ritual of speaking and listening with willingness and respect. In general, they avoided leaving any points unclear, and the decisions reached represented a commitment made by the different parties involved. |

Source: Elaborated by the authors.

Thus, based on the analysis of the established criteria, the meetings held and the procedures adopted, we conclude that they can be characterized as hybrid forums with a considerable degree of technical democracy, which shows that CONAPABF's management for holding the *Faróis* seminar is in line with the processes of democratization of democracy in its territory, since the social actors, during the period of analysis, remained linked by a relatively stable and open structure: "[...] a public space which can function only if it is fitted out, organized, structured, and shaped to allow the implementation of dialogic procedures" (Callon et al., 2009, p. 181).

The processes used in the forums for the seminar promoted an organized debate that addressed sociotechnical uncertainties, fostering awareness and management of these uncertainties. This made it possible to be in line what was exposed by Braga and Suarez (2018, p. 220), when they stated that ANT emerged as an object-oriented ontology whose proposal is "to redefine sociology based on a sociology of associations. One of the main objectives of ANT is to discover new institutions, procedures and concepts capable of collecting and regrouping the social."

These aspects corroborate Alcadipani and Tureta (2009, p. 415) regarding the most recent developments of ANT, which have enabled it to become more attractive to organizational studies, as they "[...] recognize that established orders are not inevitable and can be in other ways."

Nevertheless, no procedure will possibly be able to encompass the complexity of exploring and, at the same time, articulating the entire dynamic of a democratic dialogue. Thus, it is important to disassociate oneself from beliefs in definitive procedures and methods, as already stated by Callon, so that reflection and debate are the pillars of the dialogic process, imposing a kind of permanent monitoring of the procedures adopted.

According to the authors, the effectiveness of any deliberative method, including hybrid forums, is directly linked to how well these processes are integrated with political decision-making. This way, the trap of open and fruitful debates that are ignored by decision-makers is avoided, since the main reason for such procedures is the ability to gradually produce a common world or one that is known by those who compose it, given that the search for a common world must be continuous, guaranteed by stable dynamic and structures that sustain it (Callon et al., 2009).

Throughout 2021, under the impact of social isolation and also of other pandemic-related impediments, the commission worked to finalize the evaluations and concluded that 19 projects met the public notice criteria. The seminar was held in December 2021. On that occasion, the 19 selected initiatives were presented in panels moderated by representatives from the Legislative Branch and public and non-governmental organizations, as well as local leaders.

At the opening of the seminar, whose recording is available on CONAPABF's social media, members reflected on the importance of continuing to strengthen the territory unity and diversity, indicating that the long-standing initiatives that would be presented there and recognized by the seal were also inspiring stories. Thus, the recognition of such initiatives was emblematic, as it inspired paths for future actions to continue promoting the improvement of citizenship and dialogue in the territory and beyond. This reflection takes us back to the notions of action and remote control presented by ANT, described as immutable mobiles, which intends to transform something that was once particular to a certain group into something movable, which can be transported beyond its initial borders, in an attempt to reverse the balance of power between those who are dominating and those who are being dominated (Alcadipani & Tureta, 2009; Latour, 2000).

## CONCLUSION

During the meetings for the seminar, the CONAPABF members addressed several controversies, one of the main ones being related to socio-technical disputes regarding the evaluation criteria and the issuance of the event seal. This allowed us to observe that the seminar preparatory meetings can be characterized as hybrid forums, since they were configured as spaces for discussion and negotiation between heterogeneous social actors for the deliberative formulation of technical and social standards that involved a significant level of uncertainty. During the meetings, this controversy was recognized and debated, in a deliberative manner among all participants, promoting dialogue and the exchange of knowledge, obtaining the broadest possible scientific, social, and cultural understanding, arriving at negotiated recommendations on actions and decisions.

Thus, based on the criteria proposed by Callon et al. (2009), we conclude that the meetings and procedures for the seminar, to a large extent, demonstrated a management body that acts and promotes technical democracy in its territory.

Given the responses obtained, we understand that this research provides practical contributions to the governance of organizations based on the participatory management of different actors in society, as well as presenting empirical evidence that corroborates the theoretical contributions proposed by ANT, particularly in the interweaving of "after ANT" with the concepts of technical democracy and hybrid forums, among which we highlight the management of sociotechnical controversies within the scope of CONAPABF and the contribution to the field of organizational studies on topics related to decision-making processes in situations marked by sociotechnical controversies, resulting from the multiplicity of interests and knowledge. Thus, we contribute to the expansion of discussions about new epistemological contributions in the field of organizational studies and organizational theories (Serva et al., 2010; Tonelli, 2016).

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**Thaís Cristina Felipelli Vaquero:** Project administration (Lead); Supervision (Supporting); Validation (Equal); Visualization (Equal); Writing - original drafting (Equal); Writing- review & editing (Equal).

**Renê Birochi:** Project administration (Supporting); Supervision (Lead); Validation (Equal); Visualization (Equal); Writing - original drafting (Equal); Writing- review & editing (Equal).

## DATA AVAILABILITY

The entire data set that supports the results of this study was made available in the UFSC Institutional Repository and can be accessed at https://repositorio.ufsc.br/handle/123456789/229178

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