

## Challenges of Symmetrical Dialogue: Reflections on Collaborative Research in Northeast Brazil

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**Abstract** This article explores ways to promote symmetrical dialogue among knowledge-practices of artisanal fishing communities, primary education teachers, and academic researchers in the state of Bahia, Brazil. We describe multiple engagements in an inter- and transdisciplinary project that integrates research, educational, and conservation activities in two communities living in an estuarine ecosystem. Most community members dedicate their efforts to fishing activities, harboring wide knowledge about local biocultural diversity. The project promotes collaborative inclusion of local expertise and knowledge in school activities, while also striving for the inhabitants' inclusion in the planning of protected areas. The collaboration aims at symmetrical dialogues between researchers and communities that support self-determination in local school education and biodiversity conservation. Challenges to such symmetrization, including disagreements and tensions among diverse actors, not only appear in encounters of local and academic knowledge, but also within the interdisciplinary project involving natural sciences, social sciences, and philosophy.

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### Introduction

This article articulates an ethnographically inspired approach to collaboration in fishing communities in Northeast Brazil that aims at symmetrical dialogue among diverse actors. Carrying out joint research involving both academic researchers and local community members requires sustained reflection on methods, strategies, translations, and engagements involved in collaborative practices. Reflexivity is particularly demanded when research-action plans are characterized by both interdisciplinarity that brings together diverse academic traditions and transdisciplinarity that involves not only academic but also non-academic actors, leading to proliferation of attitudes, goals, and procedures that need to be navigated through symmetrical dialogues. In this article, we discuss how collaborations and dialogues about

knowledge-practices shape activities of the action-research project, “Intercultural Education as a Dialogue between Ways of Knowing and Forms of Knowledge: Multistrategic and Collaborative Research in Traditional Communities” (hereinafter, “the Project”).

The plurality of social, epistemological, ontological, and axiological dimensions in inter- and transdisciplinary dialogues raises complex questions (Ludwig 2016; Weiskopf 2020; Ludwig and El-Hani 2020). In anthropology, conservation biology, and education, for instance, the question of how to dialogically engage diverse epistemologies and ontologies has been the subject of recent debates (Bartlett et al. 2012; Holbraad et al. 2014; Kimmerer 2013). Despite being recognized as crucially important for engaging complex social-environmental dynamics,

symmetrical dialogues involve several challenges, opening up spaces for encounters and frictions between knowledge-practices (Tsing 2005), which can be related with alternative presuppositions (DeVore 2017), and the emergence of alternative concepts (Menon 2022). We conceive of these spaces as “contact zones” (Pratt 2008) that can not only harbor domination and oppression, but also “lead to new arrangements of culture and power” (Tsing 2005:5).

We contend that educational, ethnobiological and conservation projects—which are our main focuses of interest—require sustained efforts to symmetrize local and academic knowledge-practices. It is important to recognize differences in power structures, such as the differential access to adequate salaries and formal recognition (Fraser and Honneth 2003), associated with these knowledge-practices. This is a starting point for the construction of effective dialogue, recognizing the possibilities offered by the plurality of epistemologies and cognitive constructions (Santos 2010), and moving towards the affirmation of a multiplicity of knowledge-practices (Chilisa 2019).

In this dialogical context, it is possible to consider the relations between diverse knowledge-practices in terms of epistemological, ontological, and axiological “partial overlaps”, involving attention both to possible approximations (“overlaps”) and possible differences (“partialities”) (Ludwig and El-Hani 2020). The former can offer fruitful ground for shared experiences, reciprocal learning, and knowledge co-production. The latter highlights the importance of normative and political positioning of researchers and also opens up opportunities to learn from deep differences between stakeholders (El-Hani 2022), including the prospect of mobilizing heterogeneous concepts and meanings in socio-environmental conflicts (Xikrin and Bollettin 2022).

### The Project

The Project is part of initiatives of the National Institute of Science and Technology in Interdisciplinary and Transdisciplinary Studies in Ecology and Evolution (INCT IN-TREE), supported by Brazilian funding agencies. Generally speaking, the Project aims at “understanding and developing general and science education in *intercultural* situations characterized by a heterogeneity of ways of thinking”. More specifically, it focuses on science education as a trading zone (Galison 1997) of local and academic knowledge that is often hierarchically structured but should also open up to opportunities for symmetrical exchange. The

academic team is composed of heterogeneous researchers from Brazil, Italy, Namibia, and the Netherlands, encompassing biologists, philosophers, anthropologists, museologists, social scientists, ecologists, oceanographers, and science education researchers.

The Project began in 2016, initially in the fishing community of Siribinha, and was then in 2017 extended to the nearby fishing community of Poças. These communities are located just six kilometres apart in the estuary of the Itapicuru River. Both are part of the municipality of Conde, on the northern coast of the state of Bahia, Brazil. They have around 500 and 800 inhabitants, respectively. Most members of the communities descend from small numbers of families who moved from other fishing villages located upstream on the river. The goal of the Project is to move from research “in” communities to research “with” communities, deepening mutual understanding of the knowledge-practices proper to different actors, in order to promote inclusive and dialogical educational and conservation practices. Close collaboration with local schoolteachers since the Project has led to the emergence of a “community of practice” (Wenger 1998), in which local teachers act as mediators in bridging fishing and school knowledge.

The educational initiatives carried out at local schools have been producing promising results in relation to the promotion of knowledge dialogues. For example, one of the outcomes has been a book presenting local stories collected by students among their families and other community members, including elders. These stories provided the bases for students to write and illustrate “cultural tales” (Valderrama-Pérez 2016) gathered in the book, edited with the teachers at the villages’ schools, and currently under preparation for submission to a university publishing house (El-Hani 2022; Silva 2022). The book connects local narratives, which have been gradually underemphasized over generations, with school teaching and learning, and creates situated backgrounds for intercultural dialogue between local and school and academic knowledge, as the stories typically relate to local history and environment, as well as to fishing knowledge and practices.

### The Communities of Siribinha and Poças

Until the 1990s, Siribinha and Poças did not have a road connecting them with the rest of the municipality, and the river provided the only mode of

transportation. With the construction of the road, the communities began to undergo important transformations, including the establishment of activities predominantly linked to beach tourism. The local tourist industry has had diverse social and environmental impacts on the two communities, as well as caused an increasing influx of people from outside who moved to live there, in a process of gentrification (Harris, 2008). Siribinha attracts a greater number of tourists than Poças, as it is closer to the most valued local beach at the mouth of the river.

Although impacted by tourism and gentrification, the two communities have maintained their fishing culture, recruiting youngsters as artisanal fishers and shellfish gatherers, thereby passing on different knowledge-practices from older to younger generations. These knowledge-practices are related to the *jangadeiros* (raftsmen) tradition, spread along the coast of North-eastern Brazil, as a product of cultural interactions between Indigenous peoples, enslaved Africans, and Portuguese settlers (Diegues 1999). In the last 50 years, differentiation in fishing techniques grew between the two communities: in Siribinha, people mostly fish the coastal estuaries (as local people say, “*baixo mar*”), while people in Poças fish both estuaries and the deep sea (“*alto mar*”) using bigger boats, leading to larger financial returns for fishers in the latter community. These differences in fishing practices shaped disparities in tourism flows, contributing to increasingly distinct sociocultural and economic profiles of the communities.

Until recently, there were municipal schools in both communities. Both were multi-grade primary schools, with students of different years in the same room, while also serving as day care centers. The former school had four and the latter five teachers, all with higher degrees in pedagogy, as the first generation of teachers from the communities to obtain university degrees. Recently, the Siribinha school was closed, and students and teachers were relocated to the school in Poças. This allowed for a reduction of the multi-grade classrooms, with only one remaining.

All of the teachers are engaged members of the communities and almost all of them are fishers’ daughters. Moreover, most have been or are still engaged in collecting shellfish. While curricula tend to neglect local knowledge in favor of basic school contents, the life histories of the teachers enable them to connect different bodies of knowledge in their

classes. These connections have been significantly facilitated, however, by the collaborative work between local teachers and researchers in the Project. Intercultural dialogue and highlighting the silencing of local cultures in school curricula have been subjects of continuous discussion, and educational innovations for intercultural education have been developed and implemented in the classrooms (El-Hani 2022; Silva 2022).

The region where the communities live is characterized by the presence of well-preserved mangroves (Guimarães et al. 2019) and thicket-like shrub forests growing on sand dunes (known as *restingas*), as well as beach vegetation and anthropic environments, such as coconut plantations and pastures (Ing et al. 2021). This plurality of ecosystems, in which fishing communities carry out different practices for obtaining resources, is also home to a number of endangered species, such as the capuchin monkey (*Sapajus xanthosternos*) and the grey-breasted parakeet (*Pyrrhura griseipectus*), recently reported in the region by the Project team (Félix et al. 2022).

The richness of species and the good conservation of local ecosystems have prompted the interest of the municipality to take measures for environmental preservation, with a view toward generating income through nature tourism. In 2018, a Municipal Integral Conservation Unit was created in the Itapicuru estuary, called the Siribinha Peninsula Natural Monument. This is part of a conservation policy being implemented by the municipality, which may eventually result in a mosaic of protected areas, including both Integral and Sustainable Use Conservation Units, in which human economic activities are either totally excluded or partially allowed, respectively, according to the *Brazilian National System of Units for Nature Conservation* (SNUC 2000). While on the one hand, this policy can benefit local socioecological systems by conserving ecosystems and the contributions they provide to the communities, on the other, such policies can exclude them from making decisions about the management of at least part of their territories. The communities’ inclusion in decision-making processes about this environmental conservation plan is a relevant asset to strengthen their (relative) decision-making autonomy. Consequently, an additional focus of the Project is to collaborate with the communities for empowering their participation in the development of this

conservation policy. Members of the Project are in continuous dialogue with the municipality's Secretary of Environment and Economic Development, advocating for bottom-up decision-making processes about conservation. This strategy has created some space for the communities to be heard, with limitations resulting from the fact that the local government is not strongly committed to including local knowledge and interests but are pushed by the researchers to do so.

### Examples of Project Activities

In this section, we discuss three examples from students enrolled at the Federal University of Bahia to illustrate the dialogical dynamics in the Project, in order to illustrate how important it is that researchers working in and with communities become ethnographically sensitive.

The first example is offered by an undergraduate student in oceanography, Clara Kalil Dourado Coelho (2022), whose work focuses on beach rocks covering part of the coast in front of Poças, with the aim of discussing the "ecosystem services" provided by them. However, during the environmental tragedy of the unsolved oil spill that affected the Brazilian coast in 2019-2020 (Lourenço et al. 2020), her direct participation in beach-cleaning activities, self-organized by local people, changed the relations between her and community members, from relatively more distanced to more personal. Partnership relations and trust between community members and the researcher were thus deepened, allowing Clara to explore a diversified panorama of beach rock use: not only as tools and instruments for fishing and building, but as semiotic tools for elaborating community memories and discussing current environmental problems. While the multifaceted relations between the community and beach rocks were not invisible while conceptualizing the research proposal from a distance, Clara's research was shaped by the deeper understanding she obtained from the interactions with community members while cleaning up the oil spill (Coelho 2021). The social, pragmatic, and symbolic dimensions of the beach rocks, as part of the community's life and practices, also transformed Clara's disciplinary outlook from oceanography as she became immersed in local narratives and practices. As an example, we can consider the history of *Negão das Pedras*, as a being described by some community members as responsible for reorganizing the rocks on the beach at night. While no one sees him, for

community members, he provides an explanation for why rocks undergo changes over time. This history is thus directly related with the erosion caused by the increasing sea level. Beyond the diversity of fish and crustaceans available for fishing in the beach rocks, and their economic and subsistence value, it is also evident how the rocks represent a relevant medium for accessing local perceptions of environmental dynamics. As Clara increasingly understood the significance and implications of beach rocks for the community, this allowed her to bring contributions from coastal and marine environmental education (Ghilardi-Lopes and Berchez 2019) to the dialogue and collaborative work with local teachers.

The second example is offered by a master's student in History, Philosophy, and Science Teaching, Juliana de Oliveira Fonseca, who recently defended her dissertation (Fonseca 2021), focused on fishing techniques and practices used in Poças. In her study, Juliana collected descriptions of diverse techniques used in different environments for fishing: big boats, cast nets, traps, hooks, etc. Her analysis of the changes in these techniques was oriented toward a description of a historical trajectory in which the inclusion of new techniques affected the outcomes of fishing and the relations with the local ecosystem. Semi-structured interviews, originally the core methodology for the research, were complemented by personal relations made possible by the close proximity with local people after participation in the oil clean-up, as in the case described above. Participant observation thus became an increasingly central methodology in her work, as the meaningful relationships built with community members expanded the range of shared experiences that Juliana could develop with them. What emerged as a result was the specificity and polysemy of local experiences of the co-presence of diverse fishing techniques. This enabled her to access local discussions about transformations occurring over the years as well as the social differentiation produced by this diversified panorama. In this way, she was able to add another layer of complexity to her discussion of fishing techniques, addressing current concerns, claims and dynamics experienced by the community that were shared with her in living experiences beyond formal interviews. Moreover, collaboration with teachers in the community of practice enabled her to contribute to a collective reflection on the local history developed in their teaching activities. An activity aimed at bringing more elements of the history of the



community, its knowledge-practices, fishing activities and their transformations into the formal education of the new generations.

The third example is from a doctoral student in ecology, Vitor Renck, who recently defended his dissertation (Renck et al. 2022a; Renck et al. 2022b), focusing on possible dialogues between knowledge about local fish among Siribinha fishers and academic ichthyologists. He developed a careful survey of how fishermen classify fish species, inquiring into partial overlaps with academic-scientific taxonomies. In collaboration with the fishermen, he also built ethnobiological and ethnoecological models of their knowledge about fish morphology, behavior, interactions, etc. This effort, which clearly reflects academic concerns in its questions, methods, language, and data analysis, was importantly affected by the engagement with local people. By taking his interlocutors seriously as traditional experts, he moved from ideas of “validating” fishers’ knowledge vis-à-vis academic-scientific knowledge to questions such as, “what if?” and “what does it imply?” One example concerns the spawning period of different species of *Centropomus* (locally known as *robalos*), during which it is forbidden to fish for this species. According to official fishing regulations, the specific period of restriction for capturing these fish (“closed season”) does not generally match the one identified by fishermen as spawning periods. Starting from a disciplinary perspective in ecology, the encounters with fishers’ knowledge and livelihoods expanded the scope in trans- and interdisciplinary directions. On the transdisciplinary side, Vitor came to recognize fishers as experts with nuanced understandings of biodiversity and ecological dynamics in the Itapicuru estuary. As this expertise is at the core of local livelihood practices but in tension with official regulations, Vitor found himself increasingly confronted with issues beyond ecology and engaged interdisciplinarily with policy studies and social science questions about participatory governance. This has led to a recently submitted manuscript (Renck et al., forthcoming) and a policy brief advocating for the inclusion of fishing communities in the elaboration of closed season regulations through participatory processes.

### Symmetrizing Research Collaborations

It is widely recognized that social-environmental crises require inter- and transdisciplinary approaches that can account for a wide range of entangled

environmental and social factors (Ludwig et al. 2022). Siribinha and Poças exemplify this dynamic through the interplay of issues such as conservation of biodiversity in mangroves and restinga forests, livelihood practices such as sustainable fishing, environmental and science education in the local school, and environmental policies that tend to be externally imposed on the communities. Navigating this complexity requires diverse forms of academic and non-academic expertise. Despite this need for inter- and transdisciplinary approaches, collaborations between diverse stakeholders often remain deeply unequal and shaped by dominant actors and interests. This happens, for example, when academic actors remain in control of goals and methodological choices in education and conservation projects involving local communities. In the cases presented here, the ethnographic inspired effort allowed the researchers to take care of the relevance of the inclusion of interlocutors for defining research objectives and related ethical dimensions.

The Project has been shaped by the ambition of creating more equitable exchanges through more symmetrical dialogues. It is not based on the illusion that full symmetry can be achieved between actors in very different social positions such as university researchers and community members. This recognition of positionality does not mean, however, that more parity between knowledge-practices cannot be pursued and perhaps achieved. Moreover, the very recognition of positionality and inequalities is an important asset for placing them under continuous critical scrutiny. For instance, through our engagement in collaborative work with local teachers, we systematically aimed at and effectively relinquished part of our control over goals and methodological choices. The educational initiatives that have been developed generally intend to fulfil three goals, one brought about by the university researchers (related to intercultural dialogue), and two by the local teachers (reinforcing students’ self-esteem as community members and necessarily integrating intercultural dialogue with the curricular teaching goals).

All three examples from the previous section, as well as several other ongoing research programs within the Project, show how collaboration, partnership, and engagement with local people can have symmetrizing effects in reconfiguring research strategies, aims, and results. Part of this process has been the recognition of community members as

experts about the local environments, fauna and flora, different forms of fishing, community histories and changes, including their entanglements with livelihoods and environments. Another part has been interdisciplinary inquiries responsive to the complex local panorama, as exemplified by students departing from biological research but increasingly focusing on local historical narratives and policy as core research concerns. An important element of this interdisciplinary broadening is that local perspectives have emerged in the dialogues without a previous definition of “specialists”. Instead, each specific research trajectory developed from its own situated experiences and interactions, as the researchers deepened specific relations: with fishermen, shellfisher women, and people using the beach rocks. Such experiences approximated the experience of “heterodoxical awareness” (DeVore 2021) and “curiosities” (Bollettin 2021), proper of ethnographic efforts.

If the ethnographically inspired approach enabled researchers to develop proximity with local people, other influences have been produced by the municipality’s elaboration of the environmental conservation plan. One of its elements is the promotion of nature tourism in the estuarine environment, such that the local communities and the municipality can have income sources other than beach tourism that has been generating local social and environmental impacts. The municipality has thus been focusing on the scenic beauty of the Itapicuru estuary, and the endangered and rare bird species found there, with contributions from knowledge produced by the Project. Project researchers intervened by dialoguing with municipal actors to support a more participatory approach to conservation planning that could engage local communities in a more bottom-up manner. This is a key element in our interventions related to the conservation and tourism planning process. There has been some effort by the municipality to use such a participatory approach, but within limits resulting from the fact that their managerial approach is typically top-down. The researchers have been the major, if not the only, factor pushing them in the direction of bottom-up decision-making processes. The emphasis on participation of local people in the definition of Project aims and research activities reinforced an affirmative approach that community members translated partially into their claim for more participatory relations with the municipality, although

truly accomplishing this remains a challenge in the face of a rather hierarchical decision-making structure. It remains a chief concern of the Project to empower the local communities to participate in the conservation decision-making processes and in the management of related touristic activities, also including a discussion of the economic impacts of these. One example is the training of local birdwatching guides, all of them fishermen, which led to their specific certification by the municipality, based on training by the Project team and by municipal employees (for instance, for first-aid practices in the field). They take interested tourists through local environments to show the birds inhabiting them, while talking about their local descriptions and other knowledge, keeping and disseminating their local names, while exercising care for the birds’ conservation.

Close collaboration between researchers and fishers, teachers, and other dwellers of Siribinha and Poças, is at the core of the Project goals. The fact that our academic endeavor is perceived as an activity oriented toward the effective engagement of local people in research-action entails the need for ethical and political positioning. To briefly illustrate this point, we quickly point to a few interrelated activities. First, we carried out an ethnobiological study of plants used by the Siribinha community as medicine, for food, and in manufacturing fishing artefacts and building houses (Tng et al. 2021). After this study, which involved “traditional experts” identified by community members, the Project pursued an educational goal in which local students did their own inquiries into uses of plants in the communities, which will eventually culminate in a “garden of local plants” on the school grounds. This garden will play an educational role by helping to strengthen local knowledge about plants, which is threatened by the fact that several stewards of this knowledge are elders, and some of their knowledge seems to be eroding over time. The garden also provides a springboard for intercultural dialogue between local knowledge on plants and scientific knowledge presented in schools. This activity has been interrupted by the pandemic, when the area for the garden was being cleaned by teachers, students, and other community members, but is planned to be resumed in 2023.

The overall perspective of the Project is one of continuous approximation between diverse goals, anthropological, educational, ecological, but mostly

between academic and local knowledge-practices. Such an ambitious working program involves several challenges, at both political and epistemological levels. While the Project aims at symmetrization around diverse knowledge-practices, it also highlights the importance of reflexivity regarding the limitations of integration and consensus building. Many disagreements and tensions remain among stakeholders. For example, academic concerns regarding conservation and sustainability do not always align with community members' reliance on the environment for livelihood activities, including fishing and tourism. Furthermore, academic research methods and local epistemic practices often diverge and interact with equally different background beliefs, values, and worldviews. Finally, academics and community members remain in very different socioeconomic positions that shape collaborative dynamics and power structures. This means that researchers should be constantly challenged to take a step back from their aims, questions, and methods, so that more symmetrical efforts may be established.

In navigating symmetrization efforts and their limitations, two core reflections appear as crucial for discussing the possibilities offered by “partial overlaps” between distinct knowledge systems (Ludwig and El-Hani 2020). First, once we recognize that different actors hold expertise about distinct environmental and social phenomena, it can be shown how the dialogue between their knowledge-practices is not only possible but can also be epistemically productive. The examples mentioned above show how taking local expertise seriously enriches dialogical possibilities and leads to interventions that align with concerns and needs of the communities. This includes the incorporation of fishers' expertise in formulating policies that respect local reproductive periods of fish and educational practices that highlight local knowledge rather than only “formal” school curricula. However, overlaps between knowledge-practices always remain partial, bringing important limitations for dialogical efforts.

To conclude this brief overview, it is important to underline how an ethnographically inspired approach makes it possible to place academic and local knowledge-practices on a more equal footing, in more symmetrical and participatory relations. This does not mean only to acknowledge the intellectual property of specific knowledges, but rather to challenge academic discourses by making research aims, questions, and

methods accessible for negotiation with the community. Symmetrization provides a tool for making presuppositions explicit and aligning them with concerns and priorities of the communities themselves. To achieve this goal, it is crucial to build relations based on trust, as provided by long-term conviviality and direct and participatory engagement, which are the grounds of an ethnographically inspired approach. The future development of the Project will provide useful information for verifying the effectiveness and long-standing relations the team has been able to build up. Meanwhile, complementary studies comparing potential results from ethnographically inspired and other methodological approaches, as well as the possibility of moving the collaboration further into academic writing (as another intermingled aspect of ethnography), could offer important results for developing adequate epistemological, ontological, ethical, and political strategies for supporting the participation, self-determination, and protagonism of local communities.

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