‘In the Rhythm of Shrimp Tides’
More-than-human Temporalities and Relations on the Islands of the Parnaíba Delta (Brazil)

Inaugural dissertation
to complete the doctorate from the Faculty of Arts and Humanities
of the University of Cologne
in the subject of Social and Cultural Anthropology

presented by

Nora Horisberger

born on 04 March 1991
in Bern, Switzerland

Cologne, September 2024

This thesis was accepted by the Faculty of Philosophy of the University of Cologne as an inaugural dissertation for the award of a doctorate in the subject Social and Cultural Anthropology.

It was successfully defended on December 2, 2024 and is available for download from the Cologne University Publication Server (KUPS) <https://kups.ub.uni-koeln.de>.

© 2024 Nora Horisberger

Abstract

Everyday life in the Parnaíba River Delta in Northeast Brazil unfolds in continuous, sometimes abruptly changing, and often difficult-to-predict movements – new lands emerge, shores erode, salt- and freshwater boundaries shift, sand dunes move, tides come in and out, humans and nonhumans migrate, market prices fluctuate and traders vanish suddenly.
This ethnographic study explores delta inhabitants' perceptions and understandings of movements, change and temporalities, as well as the shifting terrain they inhabit, and focuses on people's everyday practices in navigating and attending to continuous movements and shifting temporalities. By tracing how more-than-human lifeways interweave and co-shape rhythms, I acknowledge both humans and nonhumans as lively and active participants in the deltaic world, and thus move beyond seeing the historically marginalized delta inhabitants overall either as vulnerable populations suffering from unruly change or on the contrary as actively impacting a passive, natural landscape.

Contrary to widespread assumptions on stability as primary and change as secondary, my ethnography shows that delta inhabitants perceive the deltaic world as founded on and emerging from movement. Their understandings of the deltaic islands challenge common perceptions of land as stable and bounded and of water as neatly separated from land. Apprehending delta life, I suggest, requires shifting our attention away from binary oppositions (e.g., land/water, wet/dry or solid/liquid) towards processes of becoming. A lens of becoming also offers alternative ways to explore delta inhabitants' multiple and shifting self-references and identities. I show that in a world of continuous movement flexibility and creativity are crucial; restricting oneself to single practices, skills, beliefs, religions, or identities makes little sense.

Everyday deltaic life is indeed much about aligning and resonating with diverse human and nonhuman temporalities. Throughout this dissertation, I look at how temporal alignments matter and how time arises from relations. I argue that time is locally understood as embodied, lived and emerging from more-than-human practices, rather than an externally imposed frame.

In a world of continuous movement, stability cannot be taken for granted. Besides movement and temporalities, a third question that runs through this thesis is thus that of how things hold together in the deltaic world. I analyze this by looking at how women's practices of caring for plants, animals and younger fishermen essentially contribute to creating continuity and by exploring narratives about the deltaic islands as a refuge where a peaceful life is possible. The latter, my ethnography shows, offers a strikingly contrasting perspective to the recently growing number of doomsday narratives portraying deltas predominantly as hot spots of crisis, coping with sea-level rise and other inevitable catastrophes.

Acknowledgments

Completing this thesis was a long journey and although I spent many hours alone in my office, my home and various cafés to write it, achieving it would never have been possible without the involvement, support and encouragement of many people.

I am deeply grateful to my supervisor Professor Franz Krause for accompanying and supporting this thesis from the first to the very last step. Franz was always available, patiently answered my questions and carefully read my drafts. This endeavor would not have been possible without his confidence and exceptional guidance through the complexities of academic life. Franz's valuable advice, his always constructive comments and his optimism provided me with the necessary determination to pursue this project, even in times of doubt.

I would like to thank the German Scientific Foundation (DFG) for making this project and research a possibility.

My thanks furthermore go to Professor Claudio Pinheiro for his support during the first half of this journey. I am grateful to Professor Sandra Kurfürst for her interest in my research, her comments on my draft and her flexibility in taking over the second supervision role rather late in the writing process. My thanks also go to Professor Jonathan DeVore for his precious and detailed comments on some of my writings; his anecdotes on rural life in Northeast not only made me smile but also showed me that I was going into the right direction.

Then and most importantly, I am deeply indebted to the inhabitants of the Parnaíba Delta, who opened their doors and their home gardens, who took me along on their boats, quads and horse carts. Without the warm welcome of my host families, living in Barrinha and Passarinho would undoubtedly not have been the wonderful experience it was.
I especially thank Dona Betinha, Seu Luís Carlos, Jhone, Camila and Thiago for having welcomed me into their homes and everyday life with warmth, acceptance and generosity. Dona Betinha received and cared for me like a daughter, she has been a great teacher, tirelessly responding to my questions and introducing me to many secrets of human and nonhuman island life. I thank Seu Luís Carlos for his trust, for sharing his knowledge on shrimp trading, local economy and politics, and for taking us to fish delicious *tainas*. Jhone has been a great friend and teacher, who not only took his time to respond to my numerous questions but also willingly and patiently introduced me to fishing practices. I am deeply grateful for all the trips we could make together through the muddy terrain.
My special thanks furthermore go to Seu Paulão, Dona Bete, Luana and Savia for opening their door, clearing a room to hang up our hammocks and sharing everyday life for some months. Seu Paulão enthusiastically shared his broad experience and profound knowledge of numerous aspects of island life, he answered my questions with great patience and insisted on taking us on many trips over the sandy island and through the water courses. Dona Bete not only treated us with delicious food but also introduced me to many other households and often eagerly accompanied me on my visits. There are many other delta inhabitants without whom this ethnographic research would not have been possible. I cannot name everyone, but I want to further thank Seu Tibuca, Seu Liudo, Seu Claudinho, Seu Batista and Seu Dete for the

many insightful conversations and for sharing so willingly their experiences and knowledge on tides, shrimps and fishing, Dona Teresa for the conversations and invitations to her home, Dona Preta and Dona Iris for introducing me to the art of fishing shrimps by hand, Dona Luiza for the many conversations and laughter, Dona Amelia and Seu Antônio (Tabaco) for sharing their experience and the invitation to their home village on the mainland, Dona Mazé, Dona Maria José and Seu Pedro for the conversations and receiving us in their homes on the mainland, Danielzinho, Lele, Seu Vaca, Manoel and Seu Manel for accepting our presence and letting us glimpse into their everyday life and struggles, Seu Guede, Dailton, Evandro, Iraky, Carlinho and the other (shrimp) fishers, Dona Nonata and Dona Carmosinha, Adalto for introducing me to the mysterious world of mangroves and crabs, Seu Chico Juana, Seu Cicero and Seu Arlindo for the long conversations, Seu Antônio (Padre) for accepting my presence and research, Dona Norata and Dona Mariazinha for sharing their life stories, Dona Maria Conceição, Dona Lindalva, Cleidiane, Dona Ozima, Seu Gerardo, Seu Caranguejo and Ceso for the conversations, Maurício and Dodo for the quad drives. *Muito obrigada*!

Further, I am also thankful to the family of Bizai and Jackeline, Denilson, Dona Nega and Seu Bernardo for receiving us on the preliminary fieldwork trip. I thank Professor Alejandro Labale from USPI Teresina for his support and for being available during the fieldwork period, Fabio Ferreira for helping me find my first host family and Seu Raimundinho for the incredible boat trip through the delta.

This endeavor would have been very solitary without the other members of the DELTA project. I thank Benoit Ivars, Sandro Simon and Teresa Cremer for the many incredible moments we shared, the conferences we visited together, for the time they took to read my drafts and their constructive comments. I am grateful to many other friends and colleagues from the University of Cologne – Gerda Kuiper, Carolin Maevis, Matian van Soest, Manon Diederich, Innocent Mwaka, Qian Zhu, Tanya Whande, Diego Menestrey, Hauke Peter Vehrs, Vanina Santy, Kirsty Wissing, Ognjen Kojanić – thanks for the conviviality, for sharing meals and many (much needed) coffees and after work get-togethers.

Finally, this project would not have come to an end without my family who had a lot of patience and always believed in me. I am most grateful to my partner Daniel Teixeira Soares for his comprehension, for his love and care and for agreeing to follow me to Germany and Northeast Brazil. Many thanks to my son Nael for his unconditional love and patience. I know that he sometimes struggles to understand why his mum has to work so many hours in front of a computer, but his curiosity, his thousands of questions, and joy of discovering this world keep reminding me how important such work is. Last but not least many thanks to my parents, my brother and my friends in Switzerland, who always supported and encouraged me and helped me out so many times with childcare.

Table of Contents

LIST OF FIGURES **8**

INTRODUCTION **9**

I. BECOMING **32**

CHAPTER 1. "NATURE MAKES AND UNMAKES" – *"A NATUREZA FAZ E DESMANCHA"* **33**

CHAPTER 2. PAST TIMES – *TEMPOS DE ANTIGAMENTE* **57**

CHAPTER 3. "I DON'T KNOW WHAT I AM" – *"NÃO SEI O QUE SOU"* **84**

II. RHYTHM **120**

CHAPTER 4. "EVERYTHING HAS ITS TIME" – *"TUDO TEM SEU TEMPO"* **121**

CHAPTER 5. SHRIMP TIDE – *MARÉ DE CAMARÃO* **150**

III. REFUGE **180**

CHAPTER 6. CARING, RAISING AND GROWING - *CUIDAR E CRIAR* **181**

CHAPTER 7. PEACEFUL LIFE – *VIDA SOSSEGADA* **212**

CONCLUSION **236**

REFERENCES **244**

List of figures

Figure 1: Shore from where the fisherman indicated the “beginning and end of the delta” 9
Figure 2: Above: Port of Tatus with floating dock and tourist excursion ships; Below: crossing by speedboat to Canárias Island, dunes shifting into the river and port of Canárias ... 11
Figure 3: Muddy field in front of Barrinha by low tide 18
Figure 4: Barrinha's bay in different "moods" 22
Figure 5: Young mangroves anchoring to a sandbank; House above an eroding shore; Emerging croa (sandbank) by low tide 37
Figure 6: Walking through the flooded salgado; Dry salgado at low tide; Collecting salt 38
Figure 7: Left: Temporary lakes filling up in the rainy season; on the right: Soccer field in a dried lake; cacimba (water hole) 40
Figure 8: Mobile dune field with lakes in the rainy season; Vegetation starts growing along a mobile dune 43
Figure 9: Remnants of Passarinho's 'other side' 58
Figure 10: Seu Pedro’s house and a former rice field in the mangroves. 60
Figure 11: Celebrating abundance 89
Figure 12: Changing seasons, fluctuating tides and shifting practices 125
Figure 13: Time of cashew, time of murici and time of sardines 130
Figure 14: Shrimp tide life - arriving and setting up a temporary home 156
Figure 15: Shrimp tide life - checking the water and waiting for the water to get dirtier 159
Figure 16: Shrimp tide life - abundant catches: fresh, cooked and sun-dried red shrimp 161
Figure 17: Seine net fishing - wrong timing, the tide is too high 163
Figure 18: Shrimp tide life - catadores sorting and sieving shrimps 167
Figure 19: Shrimp tide life - fetching ice at the ice factory 176
Figure 20: Home garden - jirau, mud oven, back and front areas 185
Figure 21: Home gardens - raised beds, plants and animals 187
Figure 22: Cashew trees in home gardens and the time of cashews 192
Figure 23: Drying-up forest, burning in home garden and burnt stem of a carnauba palm ... 197
Figure 24: Caring for animals - mitigating the negative effects of dissonant temporalities .. 209

Introduction

Arriving (I): the beginning and end of the delta



Figure 1: Shore from where the fisherman indicated the "beginning and end of the delta"

"Here is the beginning and the end of the delta," an elderly fisherman told me, a fishing line in his right hand and the left gesturing towards the *barra* das Canárias, one of the delta's five tidal channels. It was around mid-February, and minutes before I had arrived with the line speedboat (*voadeira*) in the small port of Canárias for an initial exploratory trip to the deltaic islands. I was accompanied by my partner Daniel – who would also be present during most of my long-term fieldwork from August 2017 to August 2018 – and by Adriano[1], a tourism and anthropology student at the time. We had just met Adriano the week before in Pedra do Sal, a village on the coast of the neighboring Ilha Grande de Santa Isabel. Adriano had proposed to accompany us as a guide and offered to stay for a week with his aunt Dona Amanda and her husband, who lived in Canárias village. Earlier that day, we had taken a bus from Pedra do Sal over the Ilha Grande and across the Simplício Dias bridge that connected the island to the city of Parnaíba on the mainland. There we had taken another bus back over the Simplício Dias

[1] The names of my interlocutors are anonymized.

bridge to the port of Tatus at the shore of the Parnaíba River from where the speedboat would leave for Canárias. Switching buses on the Ilha Grande would have been faster, but as it was the rainy season, Adriano was afraid that we would have to traverse flooded muddy areas to reach the connecting bus. Many of the *carnaúbais*, the typical forests of carnaúba palms we could see from the bus, were already flooded; with the advancement of the rainy season, more and more temporary lakes would form across the islands, Adriano explained.

The bus in Parnaíba did not leave according to a schedule. While we were waiting, it started slowly filling with cardboard and styrofoam boxes of various sizes: the smaller weekly and larger monthly purchases people transported back to the islands for their personal use or for resale in small village shops. Adriano informed us that the privately operated bus service would only begin the 30-minute ride to Tatus once enough people had got on it. The same was true for the speedboat in Tatus: it was operated by inhabitants of Canárias and would leave as soon as enough people had gathered on board. To go to the city and come back, delta inhabitants thus commonly followed the movement of other people; they left their houses in the early morning – the best time to do the shopping and resolve other things in the city – and returned before noon. Despite not having fixed schedules the bus and speedboat operated according to those rhythms that had emerged and that I would also become increasingly familiar with. Despite its small size, Tatus was a lively place. Not only did delta inhabitants pass through it on their trips for everyday errands in Parnaíba, but it was also the place where most tourists would begin their excursions through the delta, and it was the central passage point at which fish, oysters, cashew nuts, and tons of crabs from the delta islands and mangroves arrived daily. In Tatus they were reloaded onto trucks and embarked on their journeys to factories in Parnaíba and to the markets and restaurants of the region's bigger cities such as Teresina, São Luís and Fortaleza – the capitals of Piauí, Maranhão and Ceará State, respectively.

The crossing by speedboat to the shore of the Canárias Island where we were standing with the fisherman was comfortable. We first travelled through flooded forests bordered by the aquatic *aninga* plants (*Montrichardia linifera*), then shortly afterwards we passed the Morro Branco sand dunes, a mobile dune field shifting into the river to our right-hand side, and then we entered the main course of the Parnaíba River. As we advanced towards the river's mouth, the flooded forests and *aningas* would gradually give way to mangrove forests, indicating the increasingly brackish water. Depending on tidal flows, it took around 20 to 30 minutes to reach Canárias. The last bit of the journey, the crossing of the tidal channel, could be tricky

when the tide was high and the winds strong. The boat drivers cut the waves at right angles; often water splashed in, sometimes completely soaking the passengers. Minutes later, the yellow floating dock in front of Canárias became visible. A bunch of quad bike drivers, waiting to transport people over the sandy soil to their homes, hurried to the dock to help unload purchases. Of the five villages on the Canárias Island – which besides Canárias also included Passarinho, Caiçara, Torto and Morro do Meio[2] – Canárias was the largest, with its roughly 300 houses. During our stay with Dona Amanda, we would visit friends of hers in Caiçara and stop over in Passarinho to buy fresh shellfish and to have a drink in the *clube*, the village's bar and space for celebrating *festas*. Before walking over to Dona Amanda's house, Adriano proposed to walk along the shore of the Parnaíba River – which at that point was more commonly referred to as *barra* (tidal channel) – where we met the fisherman who showed us the place where the delta began and ended.



Figure 2: Above: Port of Tatus with floating dock and tourist excursion ships; Below: crossing by speedboat to Canárias Island, dunes shifting into the river and port of Canárias

At the shore, erosion was obvious. Through the tidal channel, the freshwater of the Parnaíba River enters the Atlantic Ocean, and at times, depending on the rhythm of tides, salty seawater

[2] The names of the villages translate as follows: 1) Canaries, 2) Little Bird, 3) refers to traditional inhabitants of coastal areas of southern Brazil, 4) Crooked/Bent, and 5) Middle Dune.

flows back inwards, temporarily inverting the direction of the currents. Originating in the Chapada da Mangabeira highlands, the Parnaíba River flows along the border between the Brazilian states of Maranhão and Piauí, over more than 1,400 kilometers through the hot, arid hinterlands – called the *sertões* – characteristic of large parts of the Brazilian Northeast, before reaching the sea. Several kilometers upstream of its mouth, two main distributaries divide from the Parnaíba River. The Iguaraçu River flows eastwards into the Piauían territory, separating the city of Parnaíba on its right shore from the Ilha Grande de Santa Isabel left shore. On the western side, the Santa Rosa River – which later becomes the Magu River – meanders through the Maranhense territory. It passes along places such as Araióses, Nossa Senhora da Conceição, and Carnaúbeiras until it splits up and joins the three tidal channels – Barra do Cajú, Barra das Melancieiras, Barra da Tutóia – that dominate the delta's western part. On its journey, the river continuously carries sediments. When reaching the river's mouth, the slowing currents fan out, allowing the distributaries to deposit the carried sediments – and new land emerges. In the opposite direction, strong tides flow rhythmically, deeply inwards. Tidal currents temporarily reverse the fluvial flows and turn them salty. They whirl up mangrove mud and reshape sand and sediment deposits. A lively dance of water flows and shifting materials, a labyrinth of fresh and salt waterways with more than seventy islands of different sizes and shapes extends over an area often referred to as the Parnaíba Delta.

Obviously, the starting and ending point of the delta indicated to us by the elder fisherman on that first visit to the Canárias Island differed from any hydro-geomorphological definition of the Parnaíba Delta. It took me some time to grasp it. During my fieldwork, other delta inhabitants would make related statements such as "the delta starts over there," pointing to other islands or watercourses, while we were actually already standing on an island inside the delta's geomorphological zone. In addition, while searching for information and literature on the Parnaíba Delta, I repeatedly stumbled across a definition that struck me: diverse texts, from tourism advertisements, journal articles and even scientific publications and reports, commonly described the Parnaíba Delta as "the largest open sea delta in the Americas" and some even pointed out that the Parnaíba Delta, together with the Nile and the Mekong Delta, would constitute the three main deltas in the world (e.g. see Mattos 2006; Milano 2015; Lacerda 2018; Guimarães-Costa et al. 2019). With its approximately 2,700 square kilometers, however, the Parnaíba Delta is rather minuscule if compared to other deltas; the Amazon Delta – to take an example from the Americas – extends over around 467,100 square kilometers (Szczygielski et al. 2015). To this day, I have not been able to find a definition of

what an "open sea delta" or *delta em mar aberto* in Portuguese, would be; the above texts do not furnish any definition, and the claim that the Parnaíba Delta would be one of the three main deltas of the world is difficult to make sense of. "In what terms?", I asked myself. In relation to its size, the Parnaíba Delta does not even figure among the 40 largest in the world (e.g. see Kuenzer and Renaud 2012).

Together with the statement of the elderly fisherman, these definitions and descriptions of the Parnaíba Delta, spread, taken up and repeated seemingly without any reflection, however, made me curious to investigate the meaning of "delta" more closely, and to critically attend to the appearance of the term in local discourse, and to the way that different actors employed the term. As Richardson (2021) points out, few people, including anthropologists, question what a delta is. She thus argues for the need to redescribe and displace the "delta" – that is, to question "when, for what purposes, for whom, and through what relations the protruded areas at rivers' ends become deltas rather than assuming a priori that they *are* deltas" (2021, 28).

During my time in the Parnaíba Delta, I gradually started to understand that the term "delta" was introduced rather recently through the development and implementation of tourism and conservation projects. The first tour operators and tourism agencies started to explore the Parnaíba Delta in the 1980s and more intensively from the 1990s onwards, reflecting a general trend in these fields to search for and identify "uncontaminated" natural places (Mattos 2006; Milano 2015). Framed within the paradigm of development, most of these tourism projects viewed tourism as an economic alternative for the deltaic region (Milano 2013). In 2004, for example, the Ministry of Tourism launched the *Rota das Emoções* (Route of Emotions)[3] circuit, connecting Jericoacoara National Park in Ceará, the Parnaíba Delta, and the Lençois Maranhense National Park in Maranhão. This program, with the aim of fostering socio-economic development through eco-tourism, crucially enhanced the visibility and the recognition of the Parnaíba Delta as a tourist destination (Milano 2013).

Around the same time, related to a globally growing awareness of environmental issues and sustainable development, environmentalists aiming to protect the region's coastal ecosystems requested the creation of a conservation unit. In 1996 the *APA*[4] *Delta do Parnaíba*, an Environmental Protection Area, was defined through a federal decree[5] (MMA/SDS 2002).

[3] Promoted by the federal government and the local governments of Piauí, Ceará and Maranhão through the program *Regionalização do Turismo - Roteiros do Brasil* (Regionalization of Tourism - Circuits of Brazil).
[4] Area de Proteção Ambiental
[5] Decreto s/n de 28.08.1996

Initially administrated first by IBAMA[6], and currently by ICMBio[7], the APA extends way beyond the zone of the geomorphological delta. It also covers the Rio Novo River in eastern Maranhão, the estuaries of the Timonha-Ubatuba River at the border of Piauí/Ceará and the Cardoso-Camurupim River in western Ceará. Until August 2020 the APA lacked an efficient management plan.[8] In 2000, an area inside the APA including Canárias Island was further defined as a Marine Extractive Reserve – *RESEX Marinha Delta do Parnaíba* – with stricter rules aimed at ensuring both people's livelihoods and the sustainable use of natural resources (MMA/SDS 2002) (see also Chapters 2 and 3). In this context, in 2002, IBAMA also launched a strategic program to promote ecotourism inside extractive reserves with the objective of encouraging the participation of local communities (Milano 2013). In the same year, the first pousada (or lodge) was constructed in Canárias (Mattos 2006), close to those river banks and the shore where we were standing while talking to the elderly fisherman.

Through these recent developments, the name "Parnaíba Delta" has not only become the dominant and official denomination of the area of islands, mangroves, and watercourses at the mouth of the Parnaíba River, but it has also promoted a certain vision of the area, particularly emphasizing the beauty of its natural and somehow allegedly "untouched" landscape. From a geomorphological point of view, it is unclear whether the city of Parnaíba is included in or excluded from the delta[9]. Yet, tourism agencies have promoted Parnaíba as *the* entry point to the delta, which itself is portrayed as comprising only the islands. More recently, I would later learn, lobbyists from the Maranhense[10] side of the delta, and in particular tourism agencies from the town of Tutóia, the Maranhense town on the westernmost edge of the delta, have begun promoting another name – "Delta of the Americas" – to counter the dominance of Parnaíba. Since around seventy percent of the delta is in Maranhense territory, they consider it unfair that the delta's name highlights a city from the state of Piauí.

Nevertheless, the majority of delta visitors still stay in hotels and pousadas in the city of

[6] Brazilian Institute of the Environment and Renewable Natural Resources (*Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis*) created in 1989.
[7] Chico Mendes Institute for Biodiversity Conservation (*Instituto Chico Mendes de Conservação da Biodiversidade).* Both IBAMA and ICMBio are federal agencies linked to the Brazilian Ministry of Environment *(Ministerio do Meio Ambiente - MMA).* ICMBio was created in 2007 from a spin-off of IBAMA, and took over the administration and management of conservation units.
[8] During my fieldwork delta inhabitants frequently lamented the inefficiency of the initial management plan, which proposed only general guidelines and no zonification or specific norms. Funds for revision were provided in 2017 only, and the new management plan was finally published in 2020.
[9] Several authors (e.g. Dodt 1871; Lins and Andrade 2011) consider the point where the Iguaraçu River and the Santa Rosa River divide from the Parnaíba River as the apex and thus the starting point of the delta; only Ab'Saber (1956, 1959) argues that it starts far further upstream just after the confluence of the Longá River and therefore proposes that the name "Parnaíba-Longá delta" would be more appropriate.
[10] Maranhense is the adjectival form referring to the state of Maranhão.

Parnaíba, from where they embark on excursions (*passeios*) on bigger ships or guided tours in private speedboats through the deltaic waterways in order to observe the fauna and flora. Only a small number of tourists spend the night in the few pousadas on Canárias Island, in rustic chalets on the Caju Island, a privately owned island that had been transformed in a Private Natural Heritage Reserve (RPPN),[11] or at the luxury lodge on the private Poldros Island, especially popular among kite surfers. It was thus not surprising that most delta inhabitants I talked to during my fieldwork had rarely had direct encounters or conversations with tourists, although most had of course observed the growing number of excursion boats passing through the waterways. "A lot of tourists pass through the water, but they rarely come to the villages," I was repeatedly told. With the trips through the water, the term "delta" had also become more prominent on the islands. The elderly fisherman made sense of it in his own terms: he associated the term "delta" with the movement of tourism boats arriving and leaving through the tidal channel, near the shore where we met him.

In August 2017, around six months after this first visit to Canárias Island, when I started my long-term fieldwork in Passarinho, another aspect of the elderly fisherman's definition would gradually become more meaningful: He had defined the delta not only spatially, but also in terms of movement. Constant movement was indeed the main feature that, according to my interlocutors, distinguished the area they inhabited at the confluence of the Parnaíba River and the sea from the adjacent mainland or *terra firme*. Inhabitants of Passarinho (or Passarinhenses), would commonly say, "*a natureza faz e desmanc*ha," which can be translated as "nature makes and unmakes" or "nature builds and dissolves". They would make these comments when talking about eroding river shores, emerging sandbanks, changing watercourses, burying sand dunes, shifting salt and freshwater boundaries and other continuous transformations that, for them, distinguished life on the islands (*ilhas*) from life on the mainland. Passarinhenses, as we will see throughout this thesis, have recently experienced some transformations that have had quite striking effects on their livelihoods and everyday village life. Through a shift of the fresh/saltwater boundary towards the mainland, the mangrove forests south of the village, flooded by fluvial fresh water during the rainy season, have become a terrain of brackish water all year round. For Passarinhenses and other island inhabitants, cultivating rice fields in mangrove forests, which for many had turned into a major source of livelihood in recent decades, has thus become impossible. Consequently, a considerable proportion of the villagers had left Passarinho, which at the time of my fieldwork

[11] Reserva Particular do Patrimônio Natural.

comprised around 30 houses, to look for other opportunities elsewhere. I had the impression that many of those who had stayed were still in a reorientation phase.

To be honest, after my first visit in February 2017, Passarinho village would not have been my first choice as a place to start fieldwork. Dona Amanda and her husband Seu Vitor, as well as the family we had visited in Caiçara, had welcomed us very warmly. When passing through Passarinho, however, we saw hardly any people. The village seemed anything but lively, and when stopping over in the *clube*, the village's bar and place to celebrate *festas*, we were met with mistrust by an elder Passarinhense who started inquiring directly about the purpose of our stay. Yet in August 2017 I arrived in Teresina, the capital of Piauí, to meet Prof. Alejandro Labale, an anthropologist at the Federal University of Piauí (UFPI) whom I had previously contacted. Alejandro presented me to Fábio Ferreira, an anthropologist who at the time was the head of the National Institute of Historical and Artistic Heritage of Piauí (IPHAN), and who was familiar with the deltaic area. Fábio proposed contacting a family he knew well in Passarinho, which had hosted a master's student, Flávia Ferreira de Mattos, for her ethnographic fieldwork some 10 years earlier. The family immediately accepted the proposal and I decided to give Passarinho a chance as a starting point for my fieldwork.

Some days later, Daniel and I thus took a bus to Parnaíba, where we stayed a few nights to make our last purchases before then setting out for the second time to Canárias Island, from where a quad driver would take us on a bumpy 30-minute ride across the sandy soil to Passarinho. Seu Juzé, Dona Alice, and the two granddaughters living in the same household welcomed us warmly under their covered veranda and showed us the room in their brick house that they had emptied for us to hang up our hammocks. Over the coming months, Seu Juzé in particular would become an engaged and enthusiastic conversation partner. In his early fifties, he had experienced various transformations, and engaged in a broad variety of livelihoods such as shifting cultivation, fishing, and crab catching. He had extensive knowledge about island life, the history of the region, mangroves, tides, sand dunes, cashew trees, carnauba palms, fish, crabs, and other nonhuman as well as enchanted beings that inhabited the islands' environments. Dona Alice took care of our well-being, cooked delicious meals, and immediately involved me in the cashew harvest that was about to begin in September. She introduced us to other villagers and she would often insist on accompanying me, sometimes together with the girls, when I visited other households.

After the first weeks, Seu Juzé was eager to undertake longer *passeios* (excursions) to show us other parts of the island. We either went with his canoe or hired a quad driver, and we often

combined the *passeios* with visits to relatives, friends, or festivities and other events (e.g., football games), and occasional trips to fish, gather forest fruits, or collect shellfish and oysters. The *passeios* with my host family, as I will detail in Chapter 1, proved to be a fruitful method, not only because of the experience of diverse places and the sensory immersion in a variety of milieus and materialities, but also because of the rich conversations that arose as we moved through the deltaic landscape.

However, after the first months, when the cashew harvest came to an end, I realized that going beyond conversations during visits to households and home gardens towards active participation in practices would be difficult in Passarinho. For one thing, as I had observed during my exploratory field trip already, Passarinho did not appear as a lively place to visitors. A large part of social life took place in home gardens, fenced areas in the back of people's houses, rather than in public spaces. Indeed, families often lived in clusters; that is, once a couple's children were married and had children of their own, they often built their own houses next to their parents' house, sharing the same home garden. Other than during "official" visits, I had no access to these spaces, and therefore spontaneous encounters and conversations that would have facilitated more intimate relationships were difficult to make.

I therefore started looking for a second place to continue my fieldwork. Through my collaboration with the Coastal Environments (*Ambientes Costeiros*) project of the UFPI (Teresina campus), led by Alejandro Labale, I had the opportunity to go on an exploratory trip through the delta in the university's speedboat. In early November, Alejandro, Daniel and I hence set off on a two-day trip guided by Seu Bernardinho, the boat driver of the UFPI campus in Parnaíba.

Arriving (II): Muddy encounter



Figure 3: Muddy field in front of Barrinha by low tide

We arrived in Barrinha at low tide. Even our experienced boat driver Seu Bernardinho, known for his knowledge of the deltaic environment and his skills in steering the speedboat through the labyrinth of waterways, looked surprised at the huge field of mud that stretched out in front of us. Along the eastern shore of the island – commonly known as Barrinha, but officially called Carrapato Island – runs the Barra das Melancieiras, one of the three tidal channels dominating this western Maranhense part of the delta. Unlike other deltaic villages, Barrinha, located on the island's northern shore, has no floating dock adjusting to tidal levels. "We now have two options," Seu Bernardinho announced, regaining his confidence. "Either we wait some hours for the high tide to bring us closer to the shore, or we anchor the speedboat and try to make our way through the mud." Hungry and curious about the new place, we opted for the latter. As I slid my legs overboard with a mixture of curiosity and fear, I realized that the mud was much smoother and softer than I had imagined. The mud reached up to my thighs when my feet finally reached somewhat firmer ground. With flip-flops in one hand, and a small backpack in the other, I slowly placed one foot in front of the other. "Take care of hidden shells," Seu Bernardinho shouted to us, himself concentrating so as to not to slip. But I was too focused to lose balance; it felt weird to sink into this soggy material with nothing on which to hold on to. Fortunately, I would only learn later about the danger of sharp

oyster shells, the cuts from which easily became infected, and about the stingrays that hide in the mud. For the moment, I was busy trying not to slip and fall into it. Eventually, we all made it to the sandy shore with a relieved laugh. Some fishermen, who must have been watching us with amusement, had already filled buckets with fresh water and offered us the water to wash our legs. Apparently, we were not the first visitors to arrive in Barrinha with the wrong timing.

Although we stayed only one night after this first muddy encounter, visiting the neighboring Ilha Grande do Paulino in the afternoon, I had no doubt that Barrinha would be an interesting place to continue fieldwork. Indeed, besides arriving at low tide, we had also arrived in the middle of a "shrimp tide," or what Barrinhenses call "*maré de camarão*." During these seven-day fishing periods, occurring by new or full moon, fishers from all along the Maranhense mainland travel to Barrinha. They set up a temporary home in one of the wooden fishing huts on the island's shore, and set out each night to catch the red shrimp that, during this time, move from the deeper channels to the islands' beaches. With the arrival of shrimps and fishermen, Barrinha, consisting of no more than some twenty permanent houses, often doubles its number of inhabitants, transforming into a busy bee's nest.

We thus arrived in the middle of a pulsating, lively hustle and bustle: people gathered in the shade of cashew trees, fishers sat on wooden benches in front of the fishing huts and loud music boomed from portable speakers, as fishers mended their nets and prepared for the nightly fishing; information on fishing, the latest news and gossip was exchanged, while everyone excitedly awaited the nightly fishing trips. The atmosphere was strikingly different from Passarinho, the language blunt and rough, with many jokes and loud laughter. In Barrinha, I would gradually learn, coming and going was part of everyday life. In the rhythm of shrimp tides, a bunch of diverse people arrived and left, following the movements of shrimps. Most of them had lived in various places during their lives, and not only eagerly shared their experiences but were also curious to learn about other places in the world. Through this curiosity and openness towards outsiders, my access proved comparably easier.

Undoubtedly, the family of Seu Zé and Dona Joana, running the local shrimp-trading business and in many ways also "informal" leaders of the village, contributed much to my insertion in the field. They suggested we stay in a vacant house, the former house of Seu Zé's father who had died some years earlier, but Dona Joana insisted that we share meals with her family. It turned out that Dona Joana often cooked for a bunch of people: in addition to Seu Zé, the couple's younger children (aged 8 and 12) and adult son Maurício, who lived in the neighboring house, also her siblings, Seu Fernandinho and Seu Gabriel and his wife, as well

as two or three younger shrimp fishers often joined the lunches Dona Joana served under the big cashew tree in the family's home garden. Especially during shrimp tides, Dona Joana and Seu Zé's home garden and kitchen, as well as the *barracão*, the central hut between their house and Maurício's, were popular meeting points. Under the cashew tree, hammocks and plastic chairs invited people to sit down – or even take a nap – and shrimp catches arrived in the *barracão*, where they were weighed and sorted. The family also ran a small shop selling basic supplies such as rice, *farinha* (manioc flour), crackers, *cachaça* (sugar-cane rum), soap, and diesel fuel. At nightfall, when the generator was turned on, people gathered around a television watching telenovelas and the daily evening news. Whereas in Passarinho I had to make plans in order to visit other households and home gardens to talk to people, and conversations were therefore often longer and more focused, encounters and conversations in Barrinha were much more spontaneous, sometimes diffuse and rarely one-to-one; new people would drop by and join, some would suddenly leave or start talking to someone else, and others would spontaneously take me along to show me something or visit someone else.

During my stay in Barrinha, I developed a particularly intimate relationship with Dona Joana. Seeing my curiosity "to do and learn things," as she put it, Dona Joana became an enthusiastic teacher sharing her knowledge, showing me how to care for plants and animals, how to cultivate fields and process fish and shrimp, and taking me along to gather fruits in the forest or shellfish in the mangroves, and to visit friends and relatives on the island and the mainland. Maurício, her 29-year-old son, especially passionate about fishing, immediately invited us to join line-fishing and later also shrimp-fishing trips. Soon Seu Zé would also propose that we accompany him to fish with his gillnet, and, after the first weeks, when we were no longer considered tourists, other villagers would extend invitations to gather fruits in the forests, to fish, or catch shrimps by hand. Often these invitations were as spontaneous as the conversations I described above, and they were sometimes postponed at the last minute. Daniel's presence –himself Brazilian, albeit from another region – undoubtedly greatly facilitated my participation in fishing. For one thing, although fishing activities were not restricted by gender, they were more common among men – with the exception of line fishing and hand fishing for shrimp. Additionally, most of the white women whom Barrinhenses had met so far were tourists, often from the upper-middle classes, who did usually not participate in such activities. Through Daniel, I also had easier access to some of the shrimp fishers from the mainland. However, neither of us managed to accompany the nightly red shrimp fishing trips for several reasons. Whereas the trips we were invited to join during the day were commonly called "*passeios*" (excursions, or leisure activities), the periods of red shrimp

fishing were considered (hard) work and aimed at maximum catches. Besides the big fishing nets and the four-man teams, which hardly allowed additional passengers in the canoe, fishers would not only customarily have had to share their catches with us, but were also afraid to be disturbed in their workflow and the performance of their catches.

The peculiarity of Barrinha indeed captivated me from the very first moment. While in Passarinho, I heard many narratives about "nature's making and unmaking," the continuous transformations so characteristic of life on the islands, in Barrinha I was immediately drawn into vivid, visible, and palpable rhythmic fluctuations in which everyday life unfolded. During my seven months of fieldwork in Barrinha, from February 2018 to August 2018, the intertidal zone – that muddy amphibious transition stretching out in front of Barrinha, which had welcomed us so sensorily on our first arrival – would continue to fascinate me. Called *praia* (beach), *lavado* (washed), or just *maré* (tide), that transition zone in front of Barrinha was never the same. It was lively and appeared to me as if it would change its mood with the rhythms of tides, of seasons, and in relation to winds and other weather conditions. On some days, it transmitted an air of calmness, covered by blue water stretching out like a giant mirror, reflecting the sun's rays. On other days, it was covered by innumerable, unruly waves, that splashed into arriving canoes, soaking their passengers. It could transform into a lovely sandy beach, inviting for walks, or a relatively hard-soiled soccer field, but it could also become that extensive, soggy, soft mud field of our first arrival that hardly allowed people to move through it. At times, it was good for taking a bath, playing and splashing around in the water; at other times, the muddy ground, covered by hip-deep water, would turn into a sought-after spot for catching shrimp by hand.

As Barrinha's only access point – the other nearby shores were surrounded by mangroves – it provided an inescapably sensorial arrival for one could hardly move through it without bodily immersion: brackish water splashing into canoes, soaking shirts and shorts, or muddy ground embracing one's feet were part and parcel of an encounter with Barrinha. And it would imminently remind visitors of the importance of the temporalities of tides. Indeed, Barrinha's bay could not simply be thought of as a space, as it also incorporated movement. Yet thinking of this place in terms of alternating, binary categories or states, such as water/land or wet/dry, was not satisfactory and would not have done justice to its innumerable appearances as more or less watery, unruly or calm, slightly sandier, soaked, damp, with drier mud or softer, airy mud.



Figure 4: Barrinha's bay in different "moods"

But not only did the muddy terrain transform rhythmically, everyday life in Barrinha also unfolded in specific rhythms and temporalities that I would gradually become more familiar with. For example, with every "shrimp tide" that swept in and out, I again found it striking how the atmosphere and sociality transformed with those rhythms. When tides got stronger and the shrimp moved to the beaches, to be followed by the fishers, Barrinha seemed to swell, becoming a vibrant, bustling place, seething with life. People's attention, practices, and conversations increasingly focused on tides, shrimps, nets and the nightly fishing trips. And then, when tides started decreasing, when the water got clearer and the shrimp moved on, followed by fishers returning to the mainland, Barrinha seemed to shrink again, and a calmness embraced the place. Barrinha's inhabitants would also take advantage of the calmer days to take care of business on the mainland, to visit friends and relatives, to take care of their homes and gardens, and take a moment to relax in hammocks. Barrinha, as I will describe later (see Chapter 5), seemed to have its own pulse, inhaling and exhaling in the rhythm of shrimp tides.

The two stories of arrival describe the differences the course of my fieldwork in Passarinho and Barrinha would take in terms of access, integration, and participation, but are also illustrative of the main focuses and thematic lines along which my research would develop. Indeed, despite the quite striking differences between both places, I would increasingly learn about the importance of various interweaving movements and their temporalities, as well as the amphibious, shifting materiality of the terrain. Through long conversations, elders' accounts of past "times" (*tempos*) and narratives of "nature's making and unmaking" in Passarinho, and my bodily and practical immersion into vivid fluctuations of everyday life in Barrinha, I would gradually realize that continuous movement and transformation were the basis of life on the deltaic islands. The focus of my research, broad at the beginning, would thus increasingly narrow towards an inquiry into how everyday island life unfolded amidst such continuous movements and shifting materialities.

Throughout this thesis, divided into three parts – Becoming, Rhythm, and Refuge – I will on one hand explore people's perceptions and understandings of movements, change and temporalities, as well as the shifting terrain they inhabit, and on the other hand I will focus on people's everyday practices in navigating and attending to continuous movements.

Becoming, movement, and continuous transformations

Water's fluid, malleable, and versatile characteristics have recently received growing attention. Water has, for instance, been described as a "theory machine" (Helmreich, 2011), and its particular properties, the way it flows and connects, are increasingly considered to matter in ethnographies (Strang, 2006). No longer a backdrop to human life, water has begun to be studied in its interweaving with social relations, as shaping and being shaped by societies (e.g. Krause and Strang 2016). Yet despite this acknowledgement of water as fluid, unstable and difficult-to-contain – as well the attention being paid to the ways it carries and redistributes substances such as silt and sediments, pollutants or nonhuman beings – rivers, creeks, lakes, and other bodies of water, are still largely considered as bounded and as separated from land. Historically, land has indeed been defined by excluding water, hence establishing land and water as separate entities (Lahiri-Dutt, 2014). In addition to being defined as dry, land is also mostly seen as stable, fixed and solid. In such a perspective, the clogging of rivers and creeks and the flooding or erosion of land are seen as negative or catastrophic events, as a deviation from a "normal" state. Also, even if sand, sediments and silt have increasingly been acknowledged as lively and vibrant, participating in social, political and economic spheres (Bennett, 2010; McLean, 2015), these materials have received far less attention from geographers or anthropologists, for example. Only very recently have some works started attending more closely for instance to the way sediments relate to lives and livelihoods on char islands in Bengal (De Micheaux et al. 2018; Kothari and Arnall 2020) or to the specific timescales and temporalities of the movement of sand, its interweaving with human and other nonhuman dynamics, and its significance for understanding islands in a context of environmental change (Kothari & Arnall, 2020). These works, together with others, in particular from other deltaic environments, floodplains, or (char) islands (see also Lahiri-Dutt 2014; Cons 2020), challenge commonly established binaries and oppositions such as water/land, wet/dry, or solid/liquid, as well as perceptions of land, islands and terrain as stable and bounded.

Building on part of this literature, in **Chapter 1** I explore the interweaving movements and temporalities of water, sand, sediments, and winds that delta inhabitants commonly characterized with the expression, "nature makes and unmakes," and describe as distinctive processes and features of island life. Attending not only to the way in which materials move, but also their tempo and cadence, the way they speed up, slow down, or temporarily accumulate in interaction with each other, makes clear that not only is water fluid, but islands

are too, continuously forming and reforming. Distinctions between wet and dry, or solid, liquid, and gaseous, thus appear no longer as absolutely distinct states, but rather as matters of temporal or granular scale, and the bounded, stable forms of bigger islands are only a momentary state of materials later again drawn into processes of transformation. For apprehending delta life, I propose, bounded and fixed categories are not appropriate. Instead, it requires us to shift our attention from states of being towards processes of becoming, attending to movement, permeability, in-between materialities, and mixing and mingling, rather than boundaries, separation, and fixity.

Whereas characterizations of environments as "hybrid" (Lahiri-Dutt 2014) or "amphibious" (Gagné and Rasmussen 2016) strongly emphasize the intermingling of water and land, a focus on becoming moreover attends to the interweaving or "becoming-with" (Haraway 2008) of shifting materials with the lifeways of human and nonhuman organisms and broader socio-economic and political dynamics. In this way, for instance, I will point out that mangroves, crabs, and other nonhumans do not merely passively adapt to changing water flows, moving sand and sediments, but actively take part in and shape their trajectories. In addition, a lens of becoming acknowledges the unfinishedness and openness (Biehl and Locke 2017), the ongoingness, as well as the multi-directionality and multi-dimensionality of movements that delta inhabitants commonly emphasize. Although difficult to track and predict, delta inhabitants perceive most transformations as quotidian and subtle, rather than disruptive or catastrophic. Indeed, having learned to navigate a transforming world, and experiencing transformations from within, immersed in changes, delta inhabitants often perceive continuous transformations, such as "nature's making and unmaking," in very different ways. In Chapter 1, I indicate that nature's transformations are not perceived as proceeding in a linear fashion, according to "before" and "after" temporal structures. Rivers, creeks, dunes, and islands are thus not primarily seen as stable entities that are secondarily changed, but as always and inherently transforming. Radically differing from my initial perception of change, in the last part of this chapter, I explore how this also proved to be challenging for my methodology and my way of asking questions about changes.

In **Chapter 2**, which focuses on historic dynamics in the deltaic region from two different perspectives – "official" historiography and delta inhabitants' oral histories – I further draw out the ambiguities of the delta's positioning in-between land and water, the shifting materialities and continuous movements, and continue to explore the different perceptions of transformations and temporalities in a historical perspective. The sparse official

historiography mostly focuses on the emergence of trade and describes historic dynamics in the deltaic region as a series of successive boom-and-bust economies. Although it points out the possibilities of Parnaíba's positioning in-between land and sea, the terrain's fertility and the connections through rivers, offered in particular for the emerging trade, the official history largely portrays continuous transformations as negative disturbances troubling projects and progress. Delta inhabitants' narratives of the past similarly point to the arising and vanishing of what they refer to as "*tempos"* (times or periods). Yet, they consider these – sometimes abrupt – transformations as part and parcel of the deltaic world, portraying them rather as (elusive) possibilities. In contrast to the linear and progress-oriented official historic accounts, I emphasize in this chapter that narratives of *tempos* are messy and patchy (Tsing 2015), and acknowledge the active participation of nonhumans in the making of history. They emphasize the multiple pasts, the diversity of realities within *the* delta, telling of becomings in diverse directions, where *tempos* interweave and interrupt each other. Attending to accounts of *tempos*, it becomes clear that delta inhabitants have sometimes been deliberately excluded from boom-and-bust cycles, and that some possibilities also emerged in the interstices of restrictions and domination by more powerful outside actors. Narratives of *tempos,* in this sense, are important complements both to descriptions of the Parnaíba Delta as "pristine" and "unaffected by human activities" (Szczygielski et al., 2015, p. 1) and to historic accounts attending mostly to the mainland elite's perceptions, which by looking ahead rather than around (Tsing 2015), tend to forget or ignore both nonhuman participation and traces, as well as delta inhabitants' improvised, informal and interstitial livelihoods.

A lens of becoming also offers alternative ways to explore delta inhabitant's multiple, and often malleable and shifting, self-references and identities. In a world of continuous transformations, I suggest, flexibility, creativity, and what Harris (2009) describes as an "embracing of change" are crucial and make more sense than restricting oneself to single practices, skills, beliefs, religions, or identities. Starting from expressions I frequently heard, I explore in **Chapter 3** some of people's self-references and identifications along five lines of becoming. Whereas these lines of becoming reflect experiences of marginalization, historic legacies, power relations or changing legislations, they are not totalizing or stable, nor do they reflect some kind of essence. In contrast to bounded ideas of culture, identity, and society, a lens of becoming emphasizes unfinishedness and transformation, attending to people's creativity and agency. It allows moving beyond seeing delta inhabitants' mixed origins in terms of a "lack of" – not entirely Indigenous, African or European – and a preoccupation with finding continuities with and remnants of "previous" (e.g. pre-colonial Indigenous)

cultures and societies. As the exploration of these lines of becoming shows, delta inhabitants have certainly been constrained by diverse impositions and forces, yet they also act and decide, strategically move, and creatively reshape and reinvent their identities and trajectories.

Rhythm and Temporalities

If we consider the deltaic world from the perspective of its inhabitants, a perspective that sees continuous transformations as the basis of delta life, then attending more closely to the temporal dimension of movements becomes essential. However, for a long time landscape, the environment, and nature have in some prominent strands of Western thought been more a matter of space than of time (Adam 1998). Time has often either been taken for granted, reduced to clock time (Adam 1998), or considered an inert container or natural flow (Bastian et al., 2020). When it has been studied, this has until recently been done separately, in terms of "time of social life" on one hand, and "time of nature" on the other hand (Bastian & Bayliss Hawitt, 2023). In anthropology, Tim Ingold has been among the first to explicitly call for the integration of a temporal dimension into understandings of landscape. In "The Temporality of the Landscape," Ingold (1993) argues for considering the landscape as a temporal phenomenon, a process hence that is continually carrying on, constantly transformed through the dwelling of its inhabitants (human, nonhuman and material). Based on Ingold's work, anthropologists have started studying seasonality as "embodied periodicity," rather than an external frame of social life (Harris 1998a) and argued that instead of blocks of time, seasons are better understood as "rhythms" (Krause 2013).

But climate change and the other ecosocial crises we are facing have also drawn attention to the significance of time, for instance, in understanding shifting more-than-human relations. In this context, social scientists and other scholars, among others, have begun to focus attention on our difficulties in coordinating with ecological changes (Bastian 2012), on multispecies time in the context of species extinction (Rose 2012), on entangled forms of multispecies coordination across a variety of temporal rhythms (Tsing 2015), and on temporal mismatches between and across species (Bastian and Bayliss Hawitt 2023). Yet ecosocial crisis is also often approached with a focus on acceleration and the faster pace of ecological change, emphasizing humans' difficulties in keeping pace with a quickening nature. In works on river deltas, the emphasis on accelerating sea-level rise is particularly striking. In the Anthropocene, deltas all over the world are considered in this sense to follow similar future

trajectories; they are overall portrayed as threatened places in crisis (Syvitski et al. 2009; Giosan et al. 2014; Nicholls et al. 2020). While this is not to deny the profound transformations and the speeding-up of some dynamics in river deltas, such a framing reduces the complex interplay of multiple temporalities to a singular linear temporality. The sense of rushing, and of the inevitably dark future it conveys, is based on assumptions of a somehow less risky past with slower transformations and an idea of a future that preserves or comes back to this past. Delta inhabitants' narratives and perceptions of past *tempos,* as I outline in Chapter 2 and Chapter 3, differ from such a linear understanding of time, where time would be "divisible into a static past, a given present, and a predictable future" (Grosz, 1999, 9).

Just as all chapters of this thesis relate in one way or another back to the insight that movement is the basis of life (Chapter 1), the engagement with time and temporalities also transcends all chapters, sometimes explicitly, sometimes more implicitly. I point out the importance of attending to the tempo of movements, such as the slowing down, speeding up, or pausing of nature's and society's transformations (Chapter 1), but I also go beyond such a focus by more closely looking at how time arises *from relations* between both humans and nonhumans. Following, in particular, Ingold's (1993) consideration of time as emerging through activity, and Tsing's (2015) call for learning to notice the multiple temporal rhythms and trajectories of more-than-human assemblages, I thus approach time as embodied, lived, and emerging through practices and more-than-human relations.

Everyday deltaic life is indeed much about aligning and resonating with diverse human and nonhuman temporalities. **Part II** explores people's shifting practices to attend to rhythmical seasonal and tidal variations that bring about changing affordances of the deltaic landscape. In **Chapter 4**, I start this exploration from delta inhabitants' frequent statement that on the islands "everything has its time" (*tudo tem seu tempo*) which is used both to explain recurrent happenings, such as the passing of migrating fish or the ripening of fruits, and also to recall that things have a particular timing and that there is consequently a "right time" for particular practices. The way *tempos* (time, but also weather) of particular things are locally understood, I argue, resonates with ideas of rhythms as emerging through people's attendance and attunement to more-than-human temporalities, rather than with an externally imposed frame of time and change. For the performance of most practices, temporal alignments thus matter (Gan & Tsing, 2018), and the making of resonance (Ingold 1993), understood as a process one continually has to work on, is crucial. In order for people's attempts to coordinate their practices with many other interweaving temporalities to succeed, observation, attentiveness,

and flexibility are crucial. At the same time, struggles and dissonances to attune are equally part and parcel of everyday delta life. Further focusing on how knowledge and skills (*conhecimento*) relate to the evanescence of temporal alignments and resonances that rarely remain the same – new rhythms arrive, *tempos* transform, circumstances change – I explore delta inhabitants' emphasis on the need to "know a bit about everything." *Conhecimento*, I suggest, is better understood as intimately related to a place, made by living and doing, and constantly reattuned to a transforming world, rather than a static pre-formed set of knowledge and skills.

Chapter 5 adds further aspects to the exploration of rhythms and temporal coordinations by analyzing the phenomenon of so-called "shrimp tides" (*marés de camarão*) in Barrinha. I show how shrimp tides arise through coordinated movements of tides, red shrimps, and shrimp fishers and explore how besides Barrinha's geographic composition, everyday social life in the village also strongly fluctuates in the rhythm of shrimp tides. Looking at shrimp tides as coordinated more-than-human movements, I further underline the active involvement of people, who do not just passively adapt but co-shape rhythms, anticipate, prepare, and actively wait for upcoming changes, and at times even perpetuate uncertainties – for instance through practices of tricking (*enganar*). Shrimp tides may indeed not arise without the fishers' anticipations, preparations, and actual fishing practices; and as temporal coordinations, they are necessarily evanescent, responding as well to worlds outside the deltaic area, and broader socio-economic dynamics. In this sense, I also draw attention to the importance of the work of the local shrimp trader and the particular system of exchange that this trader and "his" shrimp fishers have established. Going beyond cash transfers, trust and mutual obligation are essential aspects of this exchange relation, and have been central to the continuation of shrimp fishing, and more broadly the village itself, in a context of oscillating prices, absent money, vanishing traders, and stricter environmental regulations.

Refuge, continuity and well-being

If considering the deltaic world as based on movement, where stable forms are only temporary appearances, and *tempos* and shrimp tides come to be through temporal alignments of more-than-human rhythms, then there is a third aspect that remains to be explored: how does continuity come about or, to put it in Gan and Tsing's (2018) words, "how do things hold?" Gan and Tsing argue that the need to better understand how more-than-human

communities “align with each other through timing to make living in common possible” (2018, 103) constitutes a significant shift from the science, both ecological and social, from the last century “when holding together was taken for granted and the important research questions addressed why things fall apart” (2018, 141). In the Parnaíba Delta, where transformation is continuous, there has probably never been such a state where things were holding together unproblematically. In their everyday lives, delta inhabitants could never take stability for granted and thus the necessity of becoming attuned to the temporalities of “how things hold” is not such a new one. Nevertheless, increased numbers of stories of ecological disturbances and environmental mismatches in timings in the Anthropocene (Bastian and Bayliss Hawitt 2023), illlustrate that understanding how “holding” works and “keeps livable assemblages alive” (Gan and Tsing 2018, 133) becomes even more pressing, including in river deltas.

The question of continuity, similarly to that of movement and temporalities, also runs through various chapters of this thesis. In Chapter 1, for instance, it can be found in the exploration of how the inhabitable, more stable deltaic islands come to be through aligning trajectories and temporalities of water, sediments, and nonhumans (e.g., mangroves). In Chapter 4 and Chapter 5, I point out the importance of *tempos* and shrimp tides in rhythmizing everyday social life in a world characterised by open becoming and continuous transformations, and I argue that it is indeed through their practices that people create a sense of continuity in an otherwise very fluctuating environment.

Part III on one hand further develops this focus by exploring the temporalities of caring practices (Chapter 6), while on the other hand exploring ideas around life as peaceful and calm (*vida sossegada*), which people often point out as a reason to remain on or return to the islands (Chapter 7).

Chapter 6 focuses on relations of women with plants and animals living in their home gardens, as well as on particular solidarities that emerged between some women and some younger fishermen who regularly came to the islands to fish, by exploring practices of *cuidar* (to care) and *criar* (to create, to craft, but also to bring up, to raise, and to grow). These practices, I point out, transcend boundaries between human and nonhuman worlds. Not only are women’s caring practices embedded in complex multispecies relationships, but in these webs humans are also not the only ones caring for others: both human and nonhuman beings actively participate in sustaining lively, flourishing webs. I further emphasize the selectivity and ambiguity of care, which can neither be understood as good or bad, nor as a fixed set of

practices. By attending to the temporalities of care – previously little explored in works on multispecies care – this becomes even more striking. Through the example of burning (*queima*), I point out how one and the same practice can be life-sustaining and caring or highly destructive depending on *when* it is performed in relation to other more-than-human temporalities. It is also through attendance to the temporalities of care, I suggest, that the importance of caring practices in creating continuity becomes apparent; an aspect that becomes especially meaningful in a context of continuous transformation where "holdings" are elusive and require an effort. In this sense, I explore how in planting and caring for plants, delta inhabitants have found a way to help remember past stories and to leave tracks for the future in a world of shifting materialities and intense human and nonhuman movements. Moreover, I consider how care can help to create continuity in the often difficult-to-handle, "empty" periods between shrimp tides, and finally how dissonant, clashing or misaligning temporalities can be mitigated by caring for animals and plants.

Finally, **Chapter 7** revolves around narratives of island life as *vida sossegada* – a peaceful, relaxed life, without significant turmoil. It thus offers a strikingly contrasting perspective on life on the deltaic islands from the image that Anthropocene narratives on river deltas as vulnerable, threatened hot spots of crisis (Nicholls et al. 2020), coping with inevitable catastrophe (see also Cons 2018), would suggest. Facing unemployement, exploitation and increasing violence on the mainland, the deltaic islands have in recent years indeed rather become a refuge for delta inhabitants. Focusing on how uncertainties can be very differently experienced, I show that for those knowing how to navigate continuous transformations, the open becoming of movements on the deltaic islands can also be a source of possibility, opening up spaces of autonomy, freedom, and good living. Delta inhabitants' conception of a peaceful life, I further point out, rather than resonating with ideas of stability or economic wealth and security, emphazises the importance of deciding *when* to do *what*. Delta inhabitants' power of mastering their own *time*, and the *how* of their lives, thus appears as essential to guarantee the continuity of the islands as a space of possibilities and living well. It is in this sense that I consider some recent projects and impositions of different actors as a menace to the peacefulness of island life, and explore how delta inhabitants try to maintain control over their space and timing in particular by taking advantage of the delta's shifting materialities.

I. Becoming

Chapter 1. "Nature makes and unmakes" – *"A natureza faz e desmancha"*

Where nature wells up from below

> "It's full of water below us, you can dig a hole anywhere here and you'll encounter water. It is not only up here. When it starts to rain, nature comes up from below, the moisture comes up to accompany the rain. Here the water goes from above downwards and from below upwards to accompany the rainwater. The elderly people said this and they said it with sincerity. When the rain starts you can watch it; the next day you can already see the water rising from below upwards; nature is rising from below, the water comes up, it falls down and rises again... this is a very important thing in the world."

With a lot of passion and detail, Seu João Miguel, an elderly inhabitant of Passarinho, detailed the diverse up- and downwelling movements of water to me. According to him and other delta inhabitants, these multidirectional movements of water and their interplay with the movements of sand and sediments constitute one of the particularities that distinguish life on the islands of the Parnaíba delta to life on the mainland.

At times delta inhabitants referred to the sandy islands they live on simply as *ilhas* (islands), but sometimes also called them *croa*. *Croa* is an ambiguous term that refers to various kinds of sandy formations emerging in the tidal waters, some of which completely disappear during high tides, while others, such as the inhabited islands, are much more permanent, but still partially flooded and continually reshaped by tides, rains and moving sand dunes. When using the term *croa*, inhabitants usually emphasized the dynamic, temporary, transformative character of the islands, as well as the qualities of the porous sandy ground, through which water not only flows downwards but also wells up from below. Many inhabitants for instance told me that they felt good and at ease on the *croa*, highlighting that its permeability provided rich soils, filtered fresh water and, through continuous seepage, prevented serious flooding.

Elder inhabitants of Passarinho narrated that the mainland, or *terra firme,* was directly created by God and has remained largely unchanged since. Not so the sandy islands. This area was once entirely composed of rivers and mangroves until a big sand dune passed over it several

hundred years ago. The sea spat out sand to the east of the delta and the wind transported it westward; it was the sand dune's movement, people said, that created their islands and made the area inhabitable. Indeed, from the delta inhabitants' perspective, the distinctiveness of their place is that nature (*natureza*) continually "makes and unmakes" (*faz e desmancha*). Seu Juzé illustrated this with the following words: "Look, this *igarapé* (creek) has previously been bigger. For us it is dying, but not for the sea. At any time, if the sea wants to, it opens it up again. It has nothing to do with laws, not at all. As far as I know, the sea made these islands, and it is also going to dissolve them. I do not rely on laws. I rely (*ligo*)[12] on nature. I pay attention (*ligo*) to nature's power, because nature makes and unmakes (*faz e desmancha*) everything."

In the Parnaíba Delta, therefore, not only are water, the river and sea, currents, tides and rains fluid, moving and reshaping the landscape, but so also do the islands – the land itself – continuously form and reform. In this chapter, I first focus on this complex interplay of moving waters, sand, sediments, winds and their temporalities that delta inhabitants commonly refer to as "nature's making and unmaking," and that they consider a particularity of island life. Besides the ways in which materials move, I also draw attention to and try to give a sense of their tempo and cadence, as well as the ways in which they pause and temporarily accumulate. I argue that apprehending the movements of nature's "making and unmaking" requires moving beyond thinking in bounded, stable and often binary categories, opposing for instance land to water, dry to wet or solid to liquid. Rather it becomes necessary to shift our attention from states of being to processes of becoming.

The second section explores the nature of these changes and some of the characteristics of becomings in the deltaic world. Building in particular on Ingold's (2013) notion of biosocial becoming and Biehl and Locke's (2017) considerations of an anthropology of becoming, I point out interrelatedness and more-than-human entanglements, as well as openness, as crucial aspects of deltaic becomings.

Finally, in the last section, I explore some of the limits of my methodology, how "moving along" with my interlocutors proved to be fruitful, and how my own perception of change was challenged by the particular experiences of change and time that life amidst a continually transforming landscape may bring about. For apprehending the deltaic world with its open becoming, ethnographic methods that remain open to surprises, acknowledge incompleteness

[12] The verb *ligar*, also used reflexively (*se ligar)*, has various translations; here I would translate it both as to rely on something, and also to be attentive, to pay attention to something.

and continuously requestion the researcher's own assumptions are more suitable than imposing bounded concepts or previously elaborated theories.

Nature's making and unmaking: movements and temporalities of water, sand, sediments and wind

"Eating" and rebuilding

Tides steadily "eat" (*comem*) Barrinha's front shore, Barrinhenses said. This erosion was obvious. The sandy slope towards the village was getting steeper, some trees had fallen, and some said that soon Seu Guede's house might fall down the slope too if he did not take care to shift it backward. Rivers and tides "eating" the shores of islands is a common and steady process in the delta. This is especially intense along tidal channels and river bends. In Torto village, located along a river bend on the southern fringe of Canárias Island, the river had not long ago "eaten" a cemetery. In Canárias village, on the island's eastern shore, the owners of a hotel tried to stabilize the eroding shores with large amounts of stones.

"Eating" often speeds up during spring tides and during the dry summer months when the strong winds intensify water currents. Villagers living along the shores generally do little to prevent the "eating". Stone walls might slow down the process but cannot prevent it; sooner or later, inhabitants said, the water approaches, the shores are "eaten." Hence, rather than invest money and time in protection, delta inhabitants instead attentively observe the dynamics of erosion to relocate their houses in time. Fishermen's huts in Barrinha, made of mangrove poles, for instance, can temporarily be flooded and easily be removed and rebuilt elsewhere. Mud houses (*taipa*) covered with palm leaves have to be rebuilt anyway every ten years and hence can be shifted away from the shores at that time. Brick houses, such as the *pousada* (lodge) in Canárias, are of course less flexible.

"Eating," the way that the erosion of riverbanks is commonly referred to, is – though cumulative – predominantly slow, quotidian and steady. It is, among others, one of those processes in the delta that requires attendance to what Jason Cons (2020) calls "seepage". Seepage, he explains, "refers to the percolation or leakage of fluid into or out of the ground. It pertains […] to 'that which oozes.' The term itself evokes viscosity, a thickness and inevitability of movement that both bleeds through and squeezes around" (2020, 205). Seeing erosion as "seepage" emphasizes the process, the persistency and permanence of flow, the

terrain's material instability and the impossibility of containing movements rather than seeing it uniquely in terms of a (catastrophic) event (Cons 2020).

In the Parnaíba Delta, "eating" rarely occurs on its own. Rivers and tides are not just dissolving forces. As the commonly uttered expression "nature makes and unmakes" suggests, what water currents "eat" in one place, they also rebuild in another. It is a dialectic process of building and dissolving. Transformation and dissolution, then, are not only destructive but also a source of creativity and of beginning anew (Deleuze, 2004).

Just west of Barrinha's eroding front shore, for instance, water currents are much slower and hence sediments accumulate. By low tide a *croa* (sandbank) emerges. It has rich soil, where women sometimes go for shellfish (*marisco*) gleaning by low tide. Not only have sediments built up, but on the *croa's* fringes some mangrove seeds have successfully anchored to germinate. When winds are strong, more seeds fall into the water, and with stronger currents they are more likely to disperse. Their spear-shaped form facilitates anchoring. Upon detachment of the mother plant, the seeds might bury themselves in the mangrove mud by low tide or float in the water until they find favorable conditions for anchorage. Children like to collect the seeds for swordplay or for drawing in the sand. If mangroves manage to anchor, germinate and develop, they slowly start changing the *croa*. They slow down the currents, and trap sediments, silt and organic materials (e.g., parts of roots, leaves, and other organisms), which start to decay. The formerly predominantly sandy substrate becomes a viscous, thick, dark mud that to some degree stabilizes the shore and protects against "eating" – the *croa* could turn into a more permanent island. But the mangroves sprouting on the emerging *croa* at Barrinha's edge are still young; they might also again be washed away by intensifying currents.

Emerging and dissolving *croas* defy any categorization of (is)lands as a primary stable and solid ground that is later shaped and reformed by liquid rivers flowing around them. *Croa* islands are rather "solid fluids"; that is, they form in *flow*, and even if they do become more apparently stable islands, their solidity is only a question of temporal scale (Ingold and Simonetti 2022; Krause 2021).



Figure 5: Young mangroves anchoring to a sandbank; House above an eroding shore; Emerging croa (sandbank) by low tide

Flooding, soaking, seeping and drying up

Close to both Passarinho and Barrinha villages, spring tides not only submerge the mangrove roots but also flood the low-lying land behind them. When spring tides retreat, they leave ponds and crusts of salt on the flat lands. *Salgado* (salty) is how delta inhabitants refer to these areas of transition between mangroves and adjacent higher sandy areas (i.e. coastal tablelands; see e.g Albuquerque et al., 2014). They form in correspondence with flooding and drying cycles that are slower than the tidal flooding of mangroves. The interplay of less frequent flooding, high evaporation and little rainfall brings about salty soils, with a salinity that may be up to five times higher than that of seawater, and hence vegetation is patchy and formed only by plants that are extremely salt-tolerant (typically perennial herbaceous succulents) (see e.g., Albuquerque et al. 2014). However, *salgados* often fluctuate along with

seasonal rainfall patterns, with mangroves expanding into *salgados* during rainy seasons and *salgado* vegetation roaming into mangrove fringes during dry seasons. Moreover, *salgados* only occur together with mangroves (Schaeffer-Novelli 2002), hence if mangroves shift, die or are deforested, *salgados* shift or disappear, too.

Although *salgados* were formerly a sought-after source of salt, delta inhabitants now buy most of their salt in town, and only occasionally during low tides collect the salt from the *salgados* for household use. Freely raised cattle and goats like to graze in *salgados*. When people go to gather fruits in the forests, they preferably choose the paths leading through the *salgado* because the compacted, either soaked or crusty soils are easier to walk on than the loose sand. Similarly, when tides are low, quad drivers on Canárias Island choose their routes through the *salgado*, carefully driving around the remaining salt ponds since salinity would cause great damage to their vehicles. Given the harder soils, and in spite of the abundance of mosquitoes, *salgados* are also popular areas for football matches.



Figure 6: Walking through the flooded salgado; Dry salgado at low tide; Collecting salt

Maybe not so obvious at first sight, football playing, I learned, sometimes reshapes the landscape. In front of his house in Passarinho, Seu Juzé explained, there used to grow some cashew trees and smaller grassy and bushy vegetation. Villagers cut some of the trees to make a football field, and after some time the football players' steady and intense movements lowered the terrain, gradually forming a lake. The football field was moved to another place. Only when the lake completely dries up during the dry season do children occasionally still use it for playing football.

Most of the lakes on the islands are indeed temporary. They start forming from January onwards after the first intense winter rainfalls soak the lower-lying areas, and dry up during the summer months (July to December) when rainfall completely ceases. As soon as the lakes deepen, they shelter a variety of fish that people fish for with handlines or *tarrafas*. Often the whole family participates in these fishing activities. That fish also reappear in lakes that had previously completely dried up and did not connect to other bodies of water is intriguing, Seu Juzé told me. According to him, fish possibly move along with clouds. He observed that clouds often form over other bodies of water; they soak up water, and with it also fish and fish eggs that they transport through the air and that fall down into the lakes when it rains.

During the rainy season, lakes hence become lively, cheerful places. Families and neighbors meet to fish and take baths. Children play and splash, dogs jump in and out of the water and horses drink on the lake's edges. Rather than at the backs of their houses, women now sit together with their neighbors around the lake to wash their clothes, accompanied by lively chatter. Dona Alice, Seu Juzé's wife, and many other inhabitants spoke of these moments as particularly joyful and pleasurable; moments that they continued remembering fondly during the summer months when the rains had already ceased and the lakes had dried up.

At the edges of the lakes, waterholes (*cacimbas*) can be dug year-round, regardless of the season. It's the sandy soil, people said, that filters the water, so that even close to saltwater courses, fresh and clean drinking water can be found at any time. During the rainy season, inhabitants generally collect rainwater in a variety of smaller and bigger receptacles. Some inhabitants of Passarinho have dug their own wells in their home gardens from where they pump up water for washing, watering plants and other household purposes during the dry season. A deep well close to the school building provides pumped-up drinking water that villagers can pick up. In Barrinha, the evangelical mission MEAP[13] funded basic water-

[13] *Missão Evangélica de Assistência aos Pescadores* (Evangelical Mission for the Assistance of Fishermen), see

distribution infrastructure some years ago. Hence, when rains become sparse, Seu Zé's family turns on the generator and pumps up water from the groundwater table into a five-thousand-liter water tank from where the water is distributed every other day through a network of plastic pipes to the surroundings of most houses. However, during longer fishing trips and whenever the pump breaks down or sand clogs the narrow plastic pipes, *cacimbas* temporarily become sought-after water sources again.



Figure 7: Left: Temporary lakes filling up in the rainy season; on the right: Soccer field in a dried lake; cacimba (water hole)

When drying up, some of the lakes in Passarinho are used for cultivation. Whereas swidden fields cultivated in the previously cut and burned forest depend on the availability of rainwater, the deeper-lying, soaked terrain of dried-up lakes affords the growing of beans, potatoes and watermelons even during the dry summer months.

Indeed, many inhabitants emphasize the fertility of the islands' sandy soils, where "almost

also Chapter 7.

everything grows." They attribute this fertility to the interplay of sand and water. Sand's permeability filters the water and enables its movements: it may seep in, trickle away, soak, dampen the soil and well up again.

Besides the categories of solid and liquid, this makes clear that the deltaic islands defy yet another binary division: that of land and water. Water, Anuradha Mathur and Dilip da Cunha (2014) argue, is everywhere before it is somewhere. Water, the authors point out, is in the rain before it is in rivers, which for instance means that before it flows it soaks, before it gathers it spreads, and before it clarifies it blurs (Mathur et al., 2014). Mathur and da Cunha urge us to move beyond thinking in terms of surfaces, onto which water (e.g., in the form of rain) falls, then gathers in lakes, rivers and other channels that eventually flow to the sea. Divisions of space into land in one place and neatly confined bodies of water in another only come to be through acts of separation (e.g., design, engineering), they argue. But we do not inhabit a surface, nor is there such a thing as dry land; rather, we should think of a "ubiquitous wetness" with different degrees (Mathur & da Cunha, 2020, 139). *Cacimbas* – with the possibility they represent of accessing fresh water almost everywhere – as well as the cultivated fields in superficially dried-up lakes, and the traveling of fish with clouds, illustrate such a "ubiquitous wetness." Following Mathur and da Cunha, if lakes become visible during the rainy season, this does not relate only to rains falling down but rather to the deepening of "a wetness that is already everywhere, in the air, earth, flora, and fauna" (2020, 139). The movements of this wetness, the authors further underline, are non-linear and emergent; it holds, seeps, soaks or transpires, and in that sense differs from water that flows (Mathur and da Cunha 2020). This indeed resonates very much with Seu João Miguel's description of the manifold movements of water that unfold once it begins to rain: water wells up, accompanies and gathers with the falling rain.

Drifting, blowing, and invading sand

During the rainy season, lakes also emerge in the spaces between the crescent-shaped white sand dunes of the mobile dune fields. These lakes are especially dynamic and reappear each year in different shapes and locations according to the continuous movement of sand dunes. The shape and direction of the mobile dune fields, migrating westwards or south-westwards, reflect the dominant direction of winds and waves. The Parnaíba River steadily carries new sediments to its mouth. Waves surging westwards continuously well the sediments up, and

tidal flows transport them towards the shore, where winds blow them landwards. The movement of sand dunes is steady but follows an annual cycle with varying velocities: the dunes speed up in the dry season when stronger winds blow and decreasing wetness loosens the grains, and slow down during the rainy season when wetness deepens and winds blow less.

When winds blew especially intensely, Dona Alice often closed the wooden shutters of the glassless windows, even during the day, to avoid the sand invading her house. At that time of the year, dry leaves had started to blend with the increasingly loose sand, eventually turning the clear yellowish, almost white sand into dark, dusty sand. *Poeira* (dust), is how people called this rather annoying type of sand, which unpleasantly kept penetrating into houses, hammocks and even one's toenails, and which obliged Dona Alice and other women to sweep the floors several times a day. Other delta inhabitants spread dried carnauba palm leaves like fans over the ground of their gardens and threw the empty shells of the shellfish they had gathered around the house to slow down the moving sand. Besides decreasing the intrusion of sand into houses, this also hindered the wind in digging holes around the house that would eventually turn into lakes during the rainy season.

When sand drift slows down, vegetation might anchor and grow on the dunes, further stabilizing them. In this way, actively migrating dunes might turn into fixed dunes. Recent geomorphological research suggests that part of the deltaic area was formed by ancient dunes pertaining to a vast Quaternary dune-field system. This would have been even bigger during the last glacial maximum (ca. 23,000-19,000 years ago) when the sea level was lower and would have, apart from the smaller, still active dune fields, stabilized between 19,000 to 14,000 years ago, when rainfalls intensified and enhanced the growth of vegetation (Conforti Ferreira Guedes et al., 2017).

Moving sand is yet another process that might be thought of as "seepage" (Cons, 2020). Similar to erosion, it is above all a quotidian, ongoing and subtle process, which can, however, have broad cumulative and sometimes devastating effects, especially if observation and anticipation are inadequate or the possibilities of moving are constrained.[14]

Sand not only transgresses borders and thresholds (Brigstocke, 2016) and intrudes in

[14] This is, for instance, illustrated by the approaching dunes invading and threatening an entire part of the settlement in Tatus.

inconvenient and intrusive ways (Agard-Jones, 2012), it also defies categories in taking on multiple forms and states (Kothari and Arnall, 2020). It can exist in suspended form in water or air, be compacted by human or geological processes (Kothari and Arnall, 2020); it can behave like a solid when it is wet, a liquid when it is dry and even a gas under the effect of wind (el-Moctar, 2013). Hence, as Ingold and Simonetti (2022) point out, sand illustrates that the distinction into solid and liquid can, besides a question of temporal scale, also simply be a matter of granular scale: whereas the crystalline structure of a particle of sand may be solid, sand "en masse" (e.g. dunes) moving in whirls, waves and swellings behaves much more like a fluid. The ceaseless movement of sand continually reshaping islands, as Kothari and Arnall (2020) emphasize, challenges common notions of islands as bounded, separate entities. As the above descriptions illustrate, understanding the movements and temporalities of sand and





Figure 8: Mobile dune field with lakes in the rainy season; Vegetation starts growing along a mobile dune

water in particular, and "nature's making and unmaking" in general, requires going beyond thinking in bounded and often binary categories such as solid/liquid, land/water, dry/wet or fixed/moving. Rather, attention should be paid to the *ongoingness* of processes or "seepages" (Cons 2020), to the various emergent "in-betweens" such as intermediate states of matter (Cons 2020) or degrees of wetness (Mathur and da Cunha 2020) and to the manifold interactions and intertwinements with others, both human and nonhuman agents. Let us explore this a little further in the next section.

"It changes in ways that sometimes you don't understand"

Noticing ongoingness

"What I have come to know in a certain way is already different, both on one side as well as on the other side. Where I once found a river, it is dry now, and where there was no river, there is one now. Oh yes, I pay attention to that. From year to year, I observe what has changed and what has not," Seu Juzé recalled and described some of these changes: the *igarapé* (creek) close to Passarinho was once so deep that one could fish with hand lines, and now it is so shallow that by low tide the canoe hardly passes through it; in the *salgado* behind his house, tidal waters used to flow much deeper inside; and the *igapó*[15] has been buried by sand dunes. "It changes, changes in such ways that sometimes you don't even understand it," Seu Juzé continued pensively. "Only after a year, you will understand. Every month it changes a bit and you don't even notice. Then when a year passed, you say 'boy, I passed there and saw it in such and such ways, and today I see it already in another place.'"

Besides emphasizing the crucial importance of observation and attentiveness in a continually changing and reshaping landscape, Seu Juzé's words also pointed to the nature of these changes. Rather than exceptional and catastrophic – at least in the first place – "nature's making and unmaking" is foremost quotidian, steady and subtle. Often, it is not the changes' abruptness but their ongoingness and unspectacular nature that take one by surprise. Sand does not invade a house in only a single day, nor do tides "eat" a shore abruptly. These are steady processes. But it is precisely because of this constancy, because of the minute everyday changes, that they can surprise – even those people, like Seu Juzé, who are used to and skilled in observing closely. A quotidian small change can be challenging to track, and can therefore

[15] An *igapó* forms when a creek (*igarapé*) is cut off from the river.

happen nearly unnoticed.

Hence, even though most processes of "making and unmaking" are quotidian and steady, there is nevertheless a relative uncertainty about their becoming. Often it is only in retrospect, when the changes have already taken place, as Seu Juzé explained, that one can attempt to grasp what happened.

To put it differently, the deltaic landscape is continuously in the making. As the descriptions of "nature's making and unmaking" in the previous section illustrate, it therefore challenges both binary, rigid categories and boundaries as well as conceptions of change in terms of linear, directed trajectories. Apprehending the deltaic world therefore requires shifting our focus away from states of "being" towards processes of "becoming." In the next section, I will outline some aspects that are characteristic of becomings in the deltaic world.

Interrelated and open becomings

Let us picture again the formation of a *croa*, which I have described before. When a young *croa* emerges from the tidal waters, it not only appears in a different form at each low tide, but it is also often hardly distinguishable from the water surrounding it. Especially fishers know the dangers of emerging *croas*. If you do not watch out carefully, they explain, your canoe might run aground, get stuck and in the worst case be swallowed by the soggy, viscous mud. Once more sediments accumulate and mangroves anchor, the *croa* may grow, surface completely and become an *ilha* – a more stable island. But a *croa's* becoming is not linear and directed: it can also again be washed away through changing winds and water currents.

The *croa,* and also the more permanent islands, as well as mangrove forests, rivers, lakes and other constituents of the deltaic landscape are indeed better thought of as processes and not as forms or bounded entities that – only secondarily – interact with each other. Rather, the deltaic landscape comes to be in interweaving movements in which forms might appear but often exist only temporarily, before being washed away again, buried, or else drawn into processes from which, once again, new forms emerge.

In Western thinking, however, there is a deeply rooted tendency to the contrary – that is, to

think of the form as primary to the processes giving rise to it[16] (Ingold 2013). This is not only difficult to overcome but also has profound implications: for instance, it allows us to consider ourselves as "human *beings*" apart from and in a superior position to the rest of the natural world. To overcome this, Ingold urges us "to give primacy to the *processes* of ontogenesis – to the fluxes and flows of materials entailed in making and growing – over the *forms* that arise within them," which implies a shift of thinking in terms of "beings" – "discrete and pre-formed entities" – towards thinking in terms of "becomings" – "trajectories of movements and growth" (2013, 7).

Ingold (2013) indeed proposes that we should think of ourselves and other organisms no longer as "species beings" but as biosocial becomings. Inspired by Deleuze's work, becoming emphasizes for instance that humanity is not pre-given but a path to be followed, a way of life to be forged; it is hence a task, always work in progress (Ingold 2013). Ingold compares this to the weaving of a tapestry that is "never complete, never finished" (2013, 8). Together, the tapestries form a sort of matrix, in which each becoming conditions and is conditioned by the becomings of others. All life, Ingold (2013) therefore deduces, is social – due to these mutually conditioning relations – and it is also biological – because of the processes (metabolism, decomposition, organic growth, etc.) it entails. In short, trajectories of becoming are always biosocial.

On the deltaic islands such an interrelatedness of becomings is fundamental at different scales. Rivers, lakes, mangrove forests, *croas*, islands, sand dunes, people, fish, crabs, shrimps and many other lifeways' becomings do indeed entangle; at times speeding up, slowing down or clashing and enhancing each other either intentionally or inadvertently. Becomings interrelate in mundane and small-scale practices and changes, but can also intertwine with broader dynamics (e.g. dredging, damming, climate change).

The dredging of watercourses is one example that illustrates the large-scale interconnectedness of water, sediments and politics. In the heyday of trade in Parnaíba, for instance, the regular dredging of rivers and channels was crucial to maintain the watery trade routes through the delta. However, similar to the processes of "eating" and rebuilding, the removal of sandbanks and sediments in one place meant that they accumulated in another. Hence, if at the dredged site watercourses deepened and speeded up, they silted up and slowed

[16] Ingold (2013) shows how this fallacy of thinking of the form as prior to processes manifests in Neo-Darwinism (genes as carriers of pre-formed information) but also in thinking about culture (memes as pre-formed carriers of information).

down in another place – yet where this would happen was difficult to predict. An efficient functioning and expansion of trade, therefore, would have required continuous maintenance and dredging work, which however was inadequate especially because of unfavorable political conditions and lack of state investments (Napoleão do Rego 2010) (see also Chapter 2).

At a much smaller scale, as I have already mentioned, plants might change the becoming of mobile sand dunes into fixed dunes if they manage to anchor and grow. But also vice versa, sand dunes can influence the becoming of some plants. Over time, some plant populations seem to have developed particularities that facilitate their growth amid mobile dunes, as well as the constant exposure to salty winds. Andrade et al. (2019) for instance mention a particular type of cashew tree (*Anacardium occidentale*) that would have emerged amidst the mobile dune fields. It developed a low, half-lying growth habit, with its main branches appearing low on its trunks, often recumbent and sometimes rooting randomly. The trunks and branches of these trees have become able to develop below ground, leaving only the sprouting leaves above the dune surface, which allows the trees to continue growing even if buried by moving sand dunes (Andrade et al., 2019).

Similarly, mangrove trees may help emerging *croas* to become small islands. On one hand, their dense aerial root networks slow down the water flows, making it harder for the *croa* to be washed away, and on the other hand, they trap and bind sediments.[17] But in addition to trapping sediments, mangrove trees also actively contribute to building soils with their own organic material (Spalding et al. 2014). In the soaked oxygen-poor soil, the decomposition of the mangrove's leaves, roots and woody material slackens, allowing organic matter to accumulate – soils become peaty and build up. Mangrove trees, then, do not just passively endure and await changes, they actively modify their environment (Cheong et al., 2013), shaping their own trajectory and allowing them for instance to keep pace – at least to a certain degree – with rising sea levels (Krauss et al., 2014).

[17] There are various species of mangroves in the Parnaíba Delta, which often grow near to each other but also have slightly different preferences for degrees of salinity, types of substrate and tidal heights. The red mangrove (*mangue vermelho / Rhizophora mangle)* for instance prefers muddy areas with a strong influence of tides (flooded daily) and high salinity; it is hence often oriented seawards. It has the "typical" aerial stilt roots (also called prop roots) that portrude out of the mud and provide it with stability and access to oxygen. The black mangrove *(siriba / Avicennia germinans)* often grows further inland than the red mangrove on muddy, slightly sandier substrate, inundated by high tides. Their aerial roots are of an other type, called pneumatophores: vertical pencil-like roots sticking up out of the soil, allowing it to breathe even when partially submerged (Feller 2018). The white mangrove (*mangue manso* or *branco / Laguncularia racemosa*) also has pneumatophores and often grows inland from black mangroves, on sandier grounds, more occasionally flooded by high tides (spring tides).

Besides stabilizing and building up soils, mangrove trees also provide food and shelter for a great number of other life forms: insects, birds and monkeys live in the canopies and branches; among the submerged roots, fish and shrimp find protected nurseries and rich feeding grounds; crabs burrow into the mangrove's mud, hide between the roots and feed on mangrove leaves; oysters, barnacles and snails, among other organisms, cling to the roots' hard surface; microbes and fungi consume decaying material; and delta dwellers find rich fishing spots, grounds for gathering crabs and shellfish and materials for construction within the mangrove forests.

When my interlocutors spoke about the *mangue*, their stories often emphasized the rich relational web of tides, muddy soils, crabs, shellfish, fish, shrimps, mosquitoes, monkeys and others that comprised what they considered as mangrove and whose lifeways in one or the other way intertwined with that of mangrove trees. This complexity, richness and interrelatedness points towards the difficulty of speaking of mangrove trees or other organisms in isolation or as bounded entities and of mangrove forests, rivers or *croa* islands as "environment" in the sense of "that which surrounds" (Ingold 2013, 10). The *croa* islands' becoming, for instance, relates among other processes to tidal flows washing over it, to mangrove trees' anchoring, to ghost crabs that might with their burrowing activities enhance its erosion (cf. Hughes et al. 2014), and so on; the mangrove's becoming, in turn, entangles with tides, and with crabs (e.g. *caranguejo uça* / *Ucides cordatus*) that play an essential role in the degradation of organic matter but also through their burrowing activities facilitate the growth of young mangrove roots (Aschenbroich et al., 2017), with encrusting barnacles that may reduce the growth of prop roots (Perry, 1988), with delta dwellers' practices (e.g. crab gathering, cutting wood and clearing for the cultivation of rice), and so on. Hence, Ingold's proposition to think of organisms (human or nonhuman) as a "knot or tangle of interwoven lines" (Ingold 2013, 10), which themselves tangle with other knots, seems more suitable in this context. While organisms grow, they incorporate the lifelines of other organisms into themselves, but their materials also spill or breathe out into the medium, as Ingold (2013) argues. I thus follow his suggestion to approach what we understand as "environment" not as something bounded but as a "zone of interpenetration" (2013, 11) where materials of living bodies continually mix and mingle with each other.

Another fundamental aspect of becoming in the deltaic world is its openness and unfinishedness. Processes of "nature's making and unmaking" for instance rarely proceed

linearly over extended periods but often change direction. An emerging *croa*, as we have seen above, might stabilize but can also again be washed away through changes in winds or water currents for example. In the deltaic world, therefore, becoming, rather than following a predefined direction, often has an open outcome that is never really sure to happen. This of course has several implications. For example, such open becomings are full of "beginnings anew" (Deleuze, 2004). However, as McLean (2013) reflects, beginning anew is not necessarily a beginning from scratch for there is always something preceding the beginning itself, and therefore there is no going back to a unique origin. In this sense, by not following a single direction, the openness of "nature's making and unmaking" enables manifold possibilities of becoming, which do not fit any linear chronological time.

The nonlinearity of becomings and a certain diffuseness, where changes often take place simultaneously in various places, certainly complicate both the tracking of changes, as Seu Juzé noted, as well as the making of predictions. When, where and in what ways things are going to change is difficult to know in advance; there is always a certain unpredictability in "nature's making and unmaking." On the other hand, Seu Juzé also underlined that "nature's making and unmaking" is something one can rely on. Indeed, in the ever-changing deltaic world, transformation and the permanence of movements is maybe the only certainty. In this way, the constancy and openness of becoming brings about reliability – things are going to change, that is for sure – which confers a certain confidence to those who have learned to navigate such a transforming world.

Unfinishedness, as Biehl and Locke (2017) point out, is at the same time a precondition, but also a product of becoming, and attending to the unfinished requires remaining open to both complexity and to wonder. For successfully navigating a world of open becoming, Seu Juzé and the other delta dwellers need to attend to "the uncertain and unexpected in the world" as well as stay flexible and keep their way of life "open to improvisation", because "becoming troubles and exceeds our ways of knowing and acting" (Biehl and Locke 2017, x).

Such an "attentiveness to the unknown," Biehl and Locke (2017) argue, is also productive for researching, theorizing and conceptualizing worlds; it is one of the dimensions of an ethnographic and anthropological practice that the authors sketch out as an "anthropology of becoming." Such an anthropology of becoming acknowledges social fields and subjectivities as unstable and malleable, emphasizing both the plastic power of people and also the plasticity of structural, social and material forces, or, to put it in Biehl and Locke's words, it "acknowledges how power and knowledge form bodies, identities, and meanings, and how

inequalities disfigure living, while refusing to reduce people to the workings of such forces" (2017, 5).

For apprehending the deltaic world, where transformation is ever-present, challenging fixed structures, rigid boundaries and binary categories, ethnographic methods that embrace the unknown, that remain open to surprises, that attend to the interrelatedness and unfinishedness of (human and nonhuman) life are certainly more appropriate than imposing bounded concepts, totalizing explanations or ready-made theories. I will elaborate more on some of these aspects in the next section by focusing on situations in the initial phase of my fieldwork. In these situations, my methods seemed inadequate, which subsequently led me to question in particular my own perception and conception of change and time, and its influence on my research practice.

Moving along with and moving within

I heard the expression that "nature makes and unmakes" everything from the very first days of my fieldwork in Passarinho. In the course of my stay, my interlocutors would, in almost every longer conversation, at one point evoke a related statement such as "nature builds here and dissolves there," or "nature is always building and unbuilding"; it thus became a ubiquitous phrase.[18]

Of course, I got curious to know more about those transformations and dissolutions. However, whenever I addressed questions of *change* in a direct manner, the conversations would lead towards what my interlocutors considered to be overall improvements of their life conditions such as the arrival of electricity and the school in the village, and the improvement of transport. Seu João Miguel, for instance, recalled the long and arduous journey to Parnaíba when as a child he accompanied his father to the market. Indeed, especially older people emphasized that "it got much better" (*melhorou muito*), vividly describing the struggles of the past versus the comfortable life of today.

Later on in my fieldwork, another incident surprised me: during a fishing trip close to Barrinha, I asked Seu Gabriel, a shrimp fisher in his late forties, about the changes of the

[18] In Barrinha, the discourses on nature's movements were less present. Perhaps because in this village, as we will see later, the everyday fluctuation – a vivid coming and going of tides, fishermen and shrimp – was much more intense and actively lived on a daily basis.

river. We were standing at the shore of one of the tidal channels (*barra*), where erosion was quite striking, and were waiting for the tide to lower a bit more and the fishing master to make a sign for the first cast of the net. Pointing at the river in front of us, I asked Seu Gabriel if it had changed a lot, and if so in what ways. He frowned and replied that the river had not changed, it had always been like that. I did not inquire more. Some weeks later, however, when I sat in a canoe moving through the same channel, Seu Fernandinho, Seu Gabriel's brother, who was sitting next to me, spontaneously started explaining how this river had changed its course and recalled the fishermen's huts that used to stand where now the river's water run through. I first thought that Seu Gabriel, who had only recently returned to live on Barrinha Island, had probably forgotten about the changes. However, the more I progressed in my fieldwork, the more that similar incidents struck me. Directly inquiring about changes usually did not lead to satisfying answers. Either I heard stories about improvements, or when I asked about the changes of a specific creek, river or dune field, my interlocutors frequently shrugged their shoulders or replied, frowning, that it had always been like that.

There was an apparent contradiction between these replies and the emphasis on "nature's making and unmaking," as well as the sometimes quite detailed descriptions thereof that people would spontaneously tell me but that I could not directly ask for. I wondered if I had used the wrong translation of what I understood as "change," if maybe there was another word that would be more appropriate. However, paying close attention to the words people used in their spontaneous descriptions, I discerned that they used the same verb, *mudar* (to change), that I had employed in my formulation of questions.

As time went on, I became more familiar with the places, and villagers started to invite me on trips and excursions. In Passarinho, I accompanied mainly my host family on what they called "*passeios*," excursions with the aim of getting to know the island. These were often combined with visits to relatives, attendances of events (e.g., football games) or festivities, and occasional fishing or gathering of fruits in the forests. In Barrinha, access to inhabitants and participation in activities proved easier, and thus, once I was no longer considered a tourist, the initial excursions with my host family were quickly joined by various invitations to gather fruits in the forests, shellfish in mangroves, and to go on a variety of fishing trips.

On these "go-alongs" (Kusenbach, 2003) by canoe through rivers, creeks (*igarapés*) and mangroves, by quad or by foot through *salgados*, *caatinga* forests and sand dunes, I learned much about mobility, as well as the materiality and temporality of the deltaic landscape. I realized how difficult moving through this ever-shifting landscape could be and how

important observation of and adjustment to other-than-human temporalities were. Walking through the sand was tiring, especially on the bigger trails where the sand was loosened through the increasingly frequent movement of quads. During the day, the sand often got too hot to walk through barefoot or with flip-flops. With shoes, however, it was even more tiring and one had less flexibility to switch to watery or muddy terrain. I also experienced the struggles involved in walking through mud that sucks one down, that makes one lose control over one's body. My go-along partners taught me how to find the slightly harder areas of sand (damper) and mud (drier), and how to carefully feel for hidden oyster shells in the mud before really stepping firmly. While stuck in a creek at low tide, I learned about the importance of tidal rhythms in affording access to places, and when having to cancel a trip because of a lack of gasoline, I realized that access to mobility was economically restricted and unequal.

By moving, and especially by walking, as Ingold[19] observes, we can no longer pretend to be moving *on* the world's surface as we are inevitably immersed, hence moving with, and not against, the materials. Moving through the deltaic landscape allowed me to actively create encounters with people and places.

Besides broadening my personal experiences and my sensory engagement with the deltaic landscape, I also observed that during our journeys people would often spontaneously start explaining changes and transformations that had occurred in specific places. Not only were these in-situ conversations rich in historical, ecological and social information, but during the go-alongs, my interlocutors and I also created shared experiences, stories we could remember and which could become knowledge afterward. Indeed, once back in the village, people liked to remember the trips and the visited places, and moreover, other villagers also started asking about the *passeios* and were suddenly much more forthcoming in their conversations.

On one hand, it seemed to me that in the eyes of my interlocutors, only once I had experienced myself the places and nature's transformations had I gained enough familiarity and knowledge to hear about those places. In this way, going beyond a discursive engagement with the physical environment (e.g., including sensory engagement) turned out to be a precondition for being able to access discourses and narratives about the transformations of these places.

On the other hand, I gradually started to understand that some of the transformations,

[19] Tim Ingold in his presentation "Flying Swimming Burrowing: Life on the inside of a worlding world" at the Workshop "Research methods for volatile lifeworlds in the hydrosocial Anthropocene," University of Cologne, January 17-19, 2018.

especially “nature’s making and unmaking,” were not only numerous but also mostly elusive, diffuse and multidirectional. As I have outlined above, and as people repeatedly emphasized, if one did not pay attention to these transformations, many of them would likely pass unnoticed. The way I had until then thought about changes, and consequently, the way I formulated my questions however presupposed rather “ordered” or traceable changes: changes with a clearly identifiable before and after, and hence following a linear pattern. For my interlocutors, this understanding made sense for “improvements” but not for their experiences of other changes. Similarly, for Seu Gabriel my question about whether the river had changed made little sense. In his understanding, river, dunes and other parts of nature were always – that is intrinsically – changing. They were in continuous becoming; processes rather than primarily stable, bounded entities that would change secondarily. The formulation of my question however assumed that the river had once been more or less stable and had then changed. This was not true for Seu Gabriel, who therefore replied that the river did not change, meaning however that it was still and always continuously transforming but not according to a linear before-and-after structure.

To summarize, my addressing of questions about changes in a direct manner and based on assumptions of traceability and linearity were useful for inquiring about changes that my interlocutors defined as “improvements”; that is, changes that were either finished, ordered or could be broken down into a linear trajectory, dividing states of “before” and “after.” However, asking about change from a perspective at once distant and observant, and assuming relative stability, did not make any sense when seeking to learn more about “nature’s making and unmaking,” so characteristic and essential for delta life, unfolding in a world of interrelated, open and unfinished becoming. Without my realizing it at the time, my inquiries imposed a bounded concept, a form, on the diffuse and open becomings in which delta life unfolds, thereby neglecting its incompleteness as well as moments of surprise and possibilities for “swerves, breaks, and new paths” (Biehl and Locke 2017, 7). In contrast, by moving along, my interlocutors and I found ourselves immersed “in the middle,” which is, as Deleuze suggested, where becoming happens (Biehl and Locke 2017). While moving along with and amid multiple lines of becoming (Biehl and Locke 2017), in this sense, my interlocutors could spontaneously engage in conversations about multiple becomings without following any patterns, orders or directions.

Conclusion

Life on the deltaic islands unfolds amidst continuous and interweaving movements. I have started this chapter with a quite detailed description of movements and their temporalities that delta inhabitants commonly refer to as "nature's making and unmaking," and which, according to them, are an important dimension of island life, distinguishing it from life on the mainland. I have pointed out that for delta inhabitants, nature's continuous transformations do not appear as random and catastrophic, but as ongoing, everyday, yet never entirely predictable, movements within which life evolves. Furthermore, I have drawn attention to the fact that those who live amidst and have learned to navigate a continuously reshaping and transforming landscape might experience changes in different ways than a casual observer – like me at the beginning of my fieldwork – would perceive them. "Nature's making and unmaking" does not manifest in changes that can be broken down into states of before and after, and often does not follow linear patterns. Rather than external forces, these changes are part and parcel of the deltaic world.

I have argued in this chapter that exploring "nature's making and unmaking" in detail makes evident that bounded, rigid and fixed categories are not appropriate for thinking about delta life. Such exploration requires attention to degrees rather than binaries, permeability rather than boundaries, mixing and mingling rather than separation, movement rather than fixity. Apprehending the deltaic world, the many examples and descriptions in this chapter, and a multitude of others – some of which I will explore in greater and some in lesser detail throughout this thesis – indeed urge us, needs a shift in our attention from states of being to processes of becoming. Many of these processes, as João Miguel so nicely described, and as Cons' (2020) notion of "seepage" and Mathur and da Cunha's (2014; 2020) considerations of wetness suggest, do not happen at the surface only and are difficult to neatly divide and contain. Damp soils, moisture in the air, rivers flowing beneath sandy islands, or *croas* emerging from river beds all require thinking of volumes and intermediary states or damp in-betweens rather than surfaces and divisions of wet/dry, land/water or solid/liquid (Cons 2020; Mathur and da Cunha 2014).

In the delta, I have further pointed out, becoming is fundamentally a biosocial becoming (Ingold 2013), or to put it in Haraway's (2008) words, a "becoming with," challenging illusions of separation, where entities cease to be bounded and the understanding of humans and nonhumans is essentially based on entanglements with other humans and nonhumans. In the delta, not only do the lifeways of human and nonhuman organisms (plants, animals,

microorganisms) entangle in biosocial becomings but so also do nonhuman forces such as water, sand, sediments, mud and wind, and – as I will further explore in subsequent chapters – enchanted beings (e.g., the "mother of water" or the "owners" of fish and the sea) are also active participants. Following Bennett, yet another binary division that divides passive "dull matter (it, things)" from "vibrant life (us, beings)" (Bennett 2010, vii) thus becomes challenging to maintain in the deltaic world.

Although I have focused in this chapter primarily on nature's continuous transformations, as a starting point from which to explore becoming, open becoming and nonlinear trajectories also apply to many other realms of deltaic life. Continuous, open becoming can indeed be seen as a basis of delta life; the reader will see that many parts of the subsequent chapters build on and refer back to the considerations of this first chapter.

At this point, it should be clear that the understandings of *natureza* differ in many ways from the Western understanding of Nature. It is, however, challenging to clearly define or grasp all the meanings attached to *natureza*. This probably comes partly from the mysterious dimensions of *natureza* that my interlocutors so often underlined. Indeed, when delta inhabitants talked to me about *natureza*, they often described it as mysterious, not fully explicable to humans, and as something to admire. "It's a thing from nature" (*é coisa da natureza*) or "only nature to do something like this" (*só a natureza pra fazer algo assim)* were statements often made to underline the inexplicable, miraculous and marvelous aspects of *natureza*. In this sense, delta inhabitants also commonly associated or merged *natureza* with God, by saying for instance "it's from nature, it's from God" (*é da natureza, é de Deus*) or "it's from nature, only God knows" (*é da natureza, só Deus sabe*) to refer to some phenomenon or occurrence in *natureza* that can hardly be explained.

Moreover, the boundaries of *natureza* did not always appear as clear and fixed but were often malleable. That is, something that is part of nature at a moment can become "out of nature" or "non-nature" at another time, for instance through changing relations. Plants from the forest, when planted and cared for in home gardens, for example, are no longer considered as part of *natureza*. *Natureza*, then – both matter and nonhuman beings considered part of *natureza* – is not passive but has power, agency and intentionality. It actively makes and unmakes landscapes, as described in this chapter, and, as we will see in the following, can also pretend, trick others, lie or teach things to people. Lastly, *natureza* is closely entangled with the invisible world, the world of enchanted or supernatural beings. Such beings take care of specific parts of *natureza* and should be respected by humans.

Focusing notions of becoming on the continuous transformations of *natureza* – and, in general, opening the thesis with such detailed descriptions of the movements of water, sand, sediments and winds – should not be misread as environmental determinism. "Nature's making and unmaking" does require people's attentiveness and continuous observation, especially because of its ongoingness and multidirectionality. Also, for most delta inhabitants it does not make sense to interfere in nature's transformations, and hence they do little to impede or avoid the changes. They rather put effort into monitoring the transformations and attempt to adjust and align their own movements to the transforming world they inhabit, and adapt their practices to its temporary, changing affordances. Nevertheless, even if people see *natureza*, especially the sea, tides and rivers, as more powerful than human beings, their lives are far from being overly determined or strongly impacted by nature's transformations. Still, however, *natureza's* continuous "making and unmaking" is crucial for delta life, or as Seu João Miguel put it, "a very important thing in the world." In some of the subsequent chapters of this thesis, I will more closely focus on people's practices, on how they entangle with nonhuman becomings. Delta inhabitants have found a way of navigating and creatively engaging with a transforming world that is not based on attempts at containment, stabilization or control of changes but that focuses on "staying with the flow," at times by anticipating and preparing, at times by creating constancy, at times by perpetuating uncertainty, but rarely by passively enduring changes. This requires intimacy with transformations, flexibility and creativity in order to reinvent, and hence an openness to embracing change.

Chapter 2. Past times – *Tempos de antigamente*

"The time of rice" (I): Remnants of "the other side"

Dry branches and twigs scratched our skin as Dona Alice and I made our way through the bushes. Dona Alice's granddaughters ran light-footed and full of childlike exuberance several meters in front of us across the sandy ground. Their thin bodies easily found openings in the thicket. In contrast to mine, it seemed that the girls' feet merged with their flip-flops. Although I had got more and more used to walking on the uneven sandy ground, my feet kept slipping away from the rubber soles, and dried twigs and leaves got caught in them, forcing me to step back and disentangle myself before moving any further. I tried not to get too many scratches, remembering vividly some villagers' comments on the fragility of white skin when a couple of weeks previously I had scratched my foot on a mangrove root.

It was the end of October; since the last rainfalls, several months had passed and the landscape would continue to dry up in the coming weeks: grasses and small bushes would turn increasingly into brown shriveling carcasses. Dona Alice normally preferred to stay on her covered veranda or the garden behind her house. However, at the beginning of this afternoon, she had enthusiastically announced that she was going to show me "the other side" (*o outro lado*).

In Passarinho, the other side is also known as the "Adrião side" (*o lado dos Adrião*), since most of its former inhabitants belonged to the Adrião family. The inhabitants of Passarinho told me that the village used to consist of two sides. The side of the Branco and Cardoso families, located at the edge of the northern mangrove forests, is close to a river arm (*igarapé*), which connects to one of the tidal channels (*barra*) that flows into the open sea. The side of the Adrião family, situated southwards, in a shrubby, savanna-like forest (*caatinga*), was oriented towards the southern mangroves, and dominated by fluvial, temporarily freshening water courses. On the day of our excursion, the first consisted of roughly 30 houses, a school, a Catholic church, a few bars, and little shops (*quitangas*), whereas only three houses remained of the latter.

As we continued advancing through the vegetation, Dona Alice suddenly pointed towards a clearing between the denser shrubs. Here there used to be a home garden, she explained. I wondered how she recognized the leftovers of a garden. Besides the sparser vegetation, there

seemed to be no difference from the rest of the forest; there were no fences, nor were there remnants of houses. As I frowned, Dona Alice pointed to a guava tree, then an acerola bush and a bigger type of cashew tree. “You see,” she said, “these plants are not from nature [*da natureza*], they have been planted by people.” As we started looking around more closely, we also found fragments of bricks, broken tiles and even parts of a mud oven, all half buried by sand. Having found one of the abandoned home gardens allowed Dona Alice to orient herself in spite of the dense vegetation that had overgrown many paths in previous years. Confidently she guided me from one place to the next. What appeared to me as part of the natural, shrubby savanna forest (*caatinga*) slowly turned into a network of houses and gardens, a church and a cemetery.

Listening to Dona Alice’s stories and explanations, I started imagining how during the “time of rice,” children were playing in the gardens and people chatting in the shadow of the trees, how women were bringing water from the wells and men repairing the gardens’ wooden fences. Laughter, voices and noises of everyday life began filling the air; it was as if the abandoned remains, the invisible “other side”, was coming to life.



Figure 9: Remnants of Passarinho's 'other side'

"The time of rice" (II): Remaining on the mangrove island

The side arm of the river became ever narrower as we penetrated deeper into the mangrove thickets. We had to crouch down low to escape the low-hanging mangrove branches. Seu Bernardinho had slowed down the speed of the 45-horsepower engine considerably. It was not usual to enter such small side arms with a *voadeira*[20] (speedboat), which was not flexible and could too easily get stuck in the shallow water. Fortunately, the tide was still high and Seu Bernardinho didn't seem stressed at all. Anyway, I had lost all sense of orientation several bends previously. In the labyrinth of water channels of the Parnaíba Delta, I gradually learned, one had little choice but to trust the local boaters. I calmed myself, recalling people emphasizing how Seu Bernardinho knew the delta like the back of his hand. Seu Bernardinho had lived in Passarinho before he moved to the city of Parnaíba to work as the University's boat driver (*motorista*). Indeed, without his skills, it would have been very difficult if not impossible for most researchers of the University to move through the delta channels and access their research sites[21].

After another twist of the river arm, the mangrove thinned out all at once. Above a steep sandy slope right hand, stood an elderly man with grey curly hair, barefoot, wearing nothing but a pair of worn shorts – it was Seu Pedro, waving to us. He had heard the motor's noise way before our arrival and, curious about the unexpected visitors, he had come to the shore. While shooing away the big pig and a bunch of chickens from the front of his clay house (*casa de taipa*) covered with palm leaves, Seu Pedro welcomed us warmly. His house, Seu Pedro immediately explained, was the only house left on this island in the middle of the mangrove forest south of Passarinho and Canárias Island. Seu Pedro, however, recalled a time when the island was full of busy everyday hustle and bustle: "Before, everybody came here. People from Morros da Mariana, from Canárias, from Conceição, from all those places. They came to work in the rice [fields]. They arrived, built a house and that was it." With a note of nostalgia in his voice, he added, "there was a soccer field, there was everything. Then, people started leaving, they all left and I stayed." As if to underline his account, Seu Pedro pointed me to a scattered assemblage of small wooden crosses a few meters from his house. It was the "little angels'" (*anjinhos*) cemetery where former inhabitants had buried their small children that didn't make it to adulthood.

[20] *Voadeiras* are too expensive for the majority of delta inhabitants; they rather use wooden canoes with 5.5. horsepower outboard engines (*rabeta*)

[21] Through my collaboration with the Coastal Environments Project from the Teresina campus of UFPI (Federal University of Piauí), I was informed at the beginning of my fieldwork about my right to do an exploratory trip by boat through the delta with Seu Bernardinho (see also Introduction).

While showing me some of the former rice fields just below the shore his house was standing on, Seu Pedro told me, that he too had come to plant rice at some point in the 1970s. Without his indications, it would have been impossible for me to guess the past of the pieces of mangrove forest that he showed me. Neither the thick yet fluffy layer of mud on the ground, nor the dense, tortuous aerial roots between which the eyes of a crab occasionally peeked out seemed to me any different from the rest of the forest. The rice had flourished, the harvests had been rich, remembered Seu Pedro. Merchants had driven by with their boats to buy the rice and sometimes the inhabitants had brought it with their canoes to Parnaíba, where the rice had been further processed in the factories. Seu Pedro did not remember exactly when the harvest had started to decline. Maybe it had been ten years previously, maybe less or a few more. The water had become saltier, and besides that, more and more capybaras had shown up. These beasts, Seu Pedro explained, had eaten everything.



Figure 10: Seu Pedro's house and a former rice field in the mangroves.

Facing these difficulties, people had started to leave the island, searching for new opportunities elsewhere. Seu Pedro admitted that sometimes he considered leaving too. Especially without the company of his wife, who had passed away recently, life was getting more difficult and lonely. His children, living in the mainland cities of the region, frequently told him to come to the city where, they insisted, life was easier. He however wondered what he should do there. "I'm used (*acostumado*) to the island," Seu Pedro reckoned after a pause, and proudly invited me to walk through his coconut plantation. Selling the coconuts, he explained, allowed him to buy some *farinha* – the highly appreciated manioc flour that together with rice accompanied all main dishes. Since rice cultivation was not possible

anymore, Seu Pedro made a living from a mix of fishing, planting some vegetables, raising some animals for subsistence, and whenever it was possible, he sold some coconuts – to visitors like me, to fishermen passing by, or he brought them by canoe to other villages.

***

In this chapter, I focus on historical dynamics in the deltaic area. I do this by considering the past from two different angles. Part one describes some of the historic dynamics from the perspective of the written, "official" historiography of the region[22] – primarily Parnaíba – whereas part two focuses on delta inhabitants' narratives and perception of past periods, referred to as *tempos* (times), sometimes with the attribute *de antigamente* (of the past).

The first part mostly deals with emerging trade and several successive boom-and-bust economies. It points to the possibilities that the delta and its positioning in-between land and sea opened up, but also draws attention to the ambiguities arising from such an in-between position and the delta's shifting materialities. Fluctuating waters, renewing and often abruptly changing transformations both confer fertility and productivity to the deltaic landscape, attracting a range of actors with specific projects, and at the same time challenge the taming, infrastructure and implementation of fixed plans.

The second part provides glimpses into history from the perspective of the inhabitants of the deltaic islands. It similarly emphasizes the elusiveness of possibilities requiring people to be attentive and flexible in order to jump to take advantage of opening opportunities. However, if from the first perspective continuous transformations appear predominantly as disturbances damaging or troubling projects and progress, the latter offers a contrasting perspective. People's narratives emphasize that the arising and vanishing of *tempos* (times), which at times happens abruptly, is part of how the deltaic world works and not necessarily a negative disruption. The *tempos* of the past emerged through the interplay, the temporal coming together, of various lifeways' rhythms, both human and nonhuman, and in recognizing this the inhabitants acknowledge that the delta's historic trajectories are always also multispecies trajectories.

[22]The written historical sources on the region of the Parnaíba Delta are unfortunately rare. During the time of my fieldwork the archives in Teresina, Píaui, were closed for an unknown time due to the leaking of the building. As the reader will note, this chapter is therefore mainly based on some general historical works on the region of Piauí and Maranhlão, a few journal articles and substantially on the work of Napoleão do Rego (2010), who for her dissertation on trade in Parnaíba had been able to visit public archives and also the private archives of two trading houses in Parnaíba, the Casa Inglesa and the Casa Comercial Marc Jacob.

Furthermore, this chapter highlights that both continual, sometimes abrupt, transformations and emerging possibilities do not play out in an empty or sealed-off space, but also interweave and echo a larger political, economic and social context. In this way, seemingly "natural" (e.g., hydrological, ecological) changes might for instance be amplified through political or economic dynamics, and more powerful actors might deliberately exclude others from opening up possibilities.

PART I: Trade and the challenges of a shifting terrain and continuous transformations

The delta's fertility and productivity offer a wide range of opportunities for livelihoods, and at the crossroads between land and sea, they are also ideal places for trade (Morita & Suzuki, 2019). Already in the mid-16th century, the Parnaíba delta's commercial opportunities sparked the interest of European explorers, especially those deprived of the pope's permission to acquire lands, a privilege restricted to Portugal and Spain (Napoleão do Rego 2010). French and English pirates roamed the area in search of valuable goods such as brazilwood (*pau-brasil*)[23]. Piauí's period of economic development, however, substantially arose only from the beginning of the 18th century onwards, when cattle breeders from the *sertões*, the arid Piauían hinterlands, shifted from the arduous and expensive terrestrial trade routes to the fluvial routes of the Parnaíba River. The *sertões*' harsh conditions, the dangers, and the isolation from the urban centers were not so attractive for most colonial settlers, which explains their relatively late colonization (Alves, 2003). Only from the 17th century onwards, Alves (2003) points out, driven by the rumours to find mineral wealth and new lands for cattle ranching, did settlers and fortune hunters venture into those arid backlands that had been marked over a long period as "terra incognita" on colonial maps.

Roughly a century later, extensive cattle ranching on the *fazendas* – large-scale landholdings – of the *sertões* became the basis of Piauí's economy, and the Parnaíba River started functioning as the primary connector of the backland's production to the coast. The navigability of the river along almost its entire length facilitated the transport of cattle to Barcas, the Parnaíban port located on the shore of the Iguaraçu river arm, from where it could be shipped along the coast to other parts of the country (Napoleão do Rego 2010). In the second half of the 18th century, when the demand for live cattle started declining, the production of dried meat

[23] In his chronicles, Gabriel de Sousa Soares describes trade between the Indigenous Tremembés and white Europeans. Jean de Lery narrates the exchange of brazilwood for hats, clothes, knifes and machetes between Indios and French and British (Mavignier 2005, as cited in Napoleão do Rego 2010, 129).

(*charque*)[24] and leather products for export began. The intense heat and dry winds of the Parnaíban coast, as well as the accessibility of salt, were ideal conditions for the establishment of the *charqueada* and thus contributed to the industry's success (Marques 1999, as cited in Napoleão do Rego 2010). The development of trade attracted inhabitants from other regions and Parnaíba's population steadily increased. The position of Parnaíba on the coast, in-between land and sea, Napoleão do Rego (2010) holds, was the decisive factor for its development from village (São João de Parnaíba) to city, while the rest of Piauí remained in economic stagnation.

Later, the structure of the export trade that had built up through the *charqueadas* allowed the commercialization of other products, for instance those extracted from plants (cotton, *maniçoba* or ceará rubber, carnauba wax, *babaçu*) that flourished in the valleys along the Parnaíba River and on the deltaic islands. One of them was carnauba wax, which became a highly valuable export product. The wax, made from a powder that is extracted from carnauba palm leaves, was initially used only for domestic fabrication of candles, until the early 20th-century discovery of its potential for use in other purposes such as shoe polish, floor wax, and records. However, the export really took off after 1910, when the industrial use of wax gained importance, and Germany became the main importer. Until its decline in the 1960s, carnauba wax figured among Piauí's major export products, and the city of Parnaíba became an important center for international trade (Napoleão do Rego 2010).

The sharply rising prices of carnauba wax also contributed to the economic development of the municipality of Araióses on the *Maranhense* side of the deltaic area. After volatile oscillations and the equally rapid and radical fall of prices towards the 1950s–60s, however, many lost their – almost effortlessly gained – fortunes, and the municipality tried to balance its collapsing budget through the already existing intensive and extensive rice cultivation (Pinto 1949). In a newspaper article in the Diário de São Luiz, Pinto (1949) noted that it was on the western riverbanks of the Parnaíba and its western distributary,[25] the Santa Rosa, as well as the low-lying lands (*terras baixas*) and the innumerable smaller islands in between the two water courses that the majority of Araióses' rice was planted from January to December. The periodical tidal flooding with fresh water made this area especially suitable for cultivation for the cyclic renewal of nutrients provided natural fertilization.

[24] *"Charquear"* is a process of conserving meat, using brine or salt. The salted meat, cut into strips, is hung in the wind and sun; this kind of meat became famous as "meat from the sertão," "wind meat" or "sun meat."
[25] For a description of the rivers, distributaries and tidal channels see introduction, p. 8-9.

However, between 1945 and 1947 Araióses rice production suddenly dropped sharply.[26] Pinto accused the Federal Office of Ports, Rivers and Canals based in Parnaíba of this "social and economic" damage (1949, 6). The dredging works aiming to improve Parnaíba's trade routes, the author argued, would have led to siltation and growing sandbanks in the water courses of the Santa Rosa and surrounding creeks[27]. On one hand, Pinto (1949) observed, this complicated Araióses' communication via fluvial routes with Parnaíba, where most of its rice production was marketed. On the other hand, it caused great losses to the rice fields because the newly created sand banks and siltation prevented the entry of fresh fluvial waters to the rice fields. Moreover, siltation reduced the strength of the river current, which allowed salty tidal waters to flow deeper inland.

To compensate for the lost production and cultivable areas, Pinto (1949) continued writing, Araióses urgently needed to acquire more fertile lands. He saw a potential but up to now "dormant reserve" in the over 10,800 hectares of the Canárias Island. Situated on the left shore at the mouth of the Parnaíba River, this large island, already part of Araióses' territory, had until then offered "no real advantage" (Pinto 1949, 6). Little available fresh water and the force of the tides that pushed salt water upstream to even the highest point on the island complicated both rice cultivation and cattle farming. Pinto (1949) indicated, however, that this problem could be solved relatively easily by opening a 400-meter channel between the Parnaíba River and the Torto River, which flows along the southern edge of the Canárias Island. According to Pinto, this would not only allow the fresh water from the Parnaíba River to enter that area, but would also considerably shorten the fluvial trade route between Parnaíba and Tutóia, a town on the westernmost edge of the delta. Although it remains unclear whether this request to the Federal Office was successful, an artificial channel to connect the two rivers was indeed opened in the 1960s, and Seu Pedro's as well as many other delta inhabitants' stories illustrate that the rice cultivation in the mangroves on Canárias' southern edge flourished around that time.

This example illustrates some elements characteristic of trade, and in general of projects attempting to make the deltaic area more productive. It emphasizes the difficulty of taming or controlling the delta's continuous and often unruly movements – whether of water, sand, sediment or silt. To make the lively, transforming deltaic landscape fit into planned structures might work for a short time period but is rarely long-lasting. Additionally, restructuring of one

[26] From 600,000 tons in 1945 to 312,000 tons in 1947.
[27] Igarapé da Manga, do Vidal, do Vermelho, do Estevão

area might also have unexpected effects on other areas. The deltaic landscape appears ambiguous in this way. For instance, even though fluctuating waters confer fertility to soils through a continuous renewal of nutrients, they also challenge transport, and their abrupt change forces people to reorganize and reorient their activities. For trade, the hydrological volatilities have certainly always been contradictory. The navigability of the Parnaíba River and the situation between land and sea facilitated and promoted commercial activities, but at the same time unruly waters, emerging sandbanks and fluctuating tides required continuous maintenance work, at times caused substantial damages, and to a certain extent prevented expansions of trading activities, which – to be successful – would have required the free circulation of bigger and deeper-draft ships.

> The Iguaraçu port used to be quite deep, and was the easiest access to the city of Parnaíba. With the increase in commercial movement, the number of boats entering the Iguaraçu increased. However, the formation of sandbanks was causing great hardship to navigation. Frequently, ships tried to leave the port through the Iguaraçu channel, but they could not get out due to the sandbanks. They had to be unloaded; then they entered the Canárias channel, where the cargo was transferred to shallower-draft boats. All these activities were very expensive. Boats were lost, not to mention the shipwrecks, sometimes caused by the incompetence of the crew (Nunes 2007, as cited in Napoleão do Rego 2010, 100-101; my translation).

In spite of its direct connection and relative closeness to the sea, Nunes (2007) thus argues, the province of Parnaíba at times appeared to be "so far from the seaports and the big markets of the country, that many of its agricultural products were of no value because transport expenses absorbed and perhaps exceeded these values" (as cited in Napoleão do Rego, 2010, 102; my translation). Napoleão do Rego (2010) similarly points out that even if Parnaíba had three ports, one fluvial and two maritime, in its immediate surroundings,[28] none of them operated in a really efficient or convenient way as a commercial port.

> The Barcas river port served as a center for receiving and distributing goods from the riverside towns (…) but needed, to complete the national and international commercial chain, a maritime interconnection. This interconnection was given either by Amarração or by Tutóia. For its proper functioning, it was necessary to maintain good conditions of navigability of the river, leaving it unobstructed along its course, constantly dredging the

[28] Porto das Barcas or Porto Salgado (in the city of Parnaíba, Piauí, on the Iguaraçu river arm), Porto de Amarração (at the mouth of the Iguaraçu in Piauí) and the Porto de Tutóia (at the delta's western edge in Maranhão)

> riverbed, removing stones, sandbanks, and avoiding the deforestation of its banks. The ships that came from the sea to the Barcas port had to be small and with shallow draught. To enter the port, they had to anchor in the proximity and wait for the high tide. The ship would then pass the river mouth and enter the river, it would moor at the dock inside, unload the goods, reload, refuel and only when the tide rose again, after six hours, it could leave (Napoleão do Rego 2010, 112; my translation).

Whereas the interconnection via Amarração was risky, as testified by the high number of shipwrecks, entering via Tutóia (Maranhão) was, from the Parnaíban point of view, equally problematic. Not only was the distance through the deltaic channels long and arduous, and thus more expensive, but the authorities of Maranhão also requested a tax payment for the exported goods (Napoleão do Rego 2010). In order to function efficiently and support the expanding commercial activities, the Amarração seaport would have needed continuous improvement and maintenance of the port infrastructure (Pennington 2009, as cited in Napoleão do Rego 2010). Despite having been announced various times since the beginning of the 19th century, such constructions have however never been effectuated, for both technical as well as favorable political conditions were lacking. Over time, Amarração thus silted up and, dependent on larger state investment that never occurred, trade gradually decreased, and with it Parnaíba lost what had been the basis of its economy throughout history (Napoleão do Rego 2010).

In the past trajectory of the delta, again and again similar stories of confrontations and struggles with the delta's shifting materiality appear, challenging those who arrive with their predesigned, fixed plans and projects. One afternoon, while we were sitting in front of his mud house in Passarinho, Felipe recalled such an incident that had recently occurred close to the port of Tatus.

I sat on a plastic chair that Felipe's daughter had brought upon my arrival, whereas Felipe preferred to stay sitting on the floor, leaning against the wall of his mud house. Near to Tatus, he told me, operators of a tourism company recently tried to impede the sand dunes in their advance into the river because their excursion ships were facing difficulties to pass through the ever-shallower watercourses. He explained that they tried almost everything. They first put palm leaves on the sand dunes, then they planted grass on it, and finally they bought a pump to soak it with water from the river. The pump was so expensive, he continued, not hiding his amusement and astonishment, that they had to pay a security agent to protect it from being stolen. People from Passarinho and other deltaic villages, he added, were just

looking at them, shaking their heads. He explained that there was nothing to do about advancing sand dunes. Nature builds in one place and dissolves in another. That's how things work. In Tatus however, Felipe insisted, they were just doing a lot of nonsense until at some point they gave up. In his early thirties, Felipe has repeatedly adjusted his livelihoods to nature's transformations. He lived mainly off crab-gathering in the mangroves and fishing, but crabs were getting scarcer and sand dunes had cut off the river arm close to Passarinho not long previously. Catching fewer crabs and fish, he decided also to start working in the carnauba wax extraction during the dry season.

The above examples all clearly illustrate that infrastructuring of the deltaic landscape and attempts to make it more profitable are challenged by the continual, sometimes volatile, movements inherent to the delta. Water and sand do not respect what some humans may consider established boundaries, and they require constant reorganization and readjustment. However, some of these examples also draw attention to the entanglements of seemingly hydrologic volatilities with political dynamics, for instance by pointing to political tensions between federal states, absence of governments or lack of state investments. In the same way, if economic volatilities such as fluctuations in demands and prices undoubtedly played a crucial role in the relatively short boom-and-bust cycles (e.g., of cattle, dried meat, carnauba wax, rice), they should be considered in a larger frame that also acknowledges their interweaving with other dynamics – be they hydrologic, climatic, political, social or cultural. Krause (2021a), in this sense, proposes to approach volatile dynamics from an intersectional perspective, emphasizing that it is a combination of various volatilities that shape – and are shaped by – social life in the deltaic world. Volatile transformations are thus always situated. They do not play out in an empty space; they might amplify each other, increase inequalities, or be deliberately maintained by certain actors, as well as influence or be influenced by certain contexts and dynamics. Moreover, continuous transformations can be very differently experienced – as negative, overall challenging and destructive, for example, or as normal and as a source of possibilities (see also chapter 7).

PART II: "It is the times" – Elusive possibilities and the finding of opportunities

Whereas the previous part focused on historical dynamics as portrayed by – the rather few – written historical accounts of the region, I will now turn to delta inhabitants' narratives and perceptions of past trajectories. As we shall see, the latter differ in some ways considerably

from, for instance, the boom-and-bust economies described by the former. Rather than chronological, linear and forward-focused, and thus progress-oriented, inhabitants' stories are messy and patchy, to use Tsing's (2015) words, and multidirectional. They acknowledge the active participation of other-than-human actors such as nature's movements in the making of lifeworlds and the *tempos* of the past, and thus also perceive the continuous transformations of the deltaic landscape in fundamentally different ways.

"The time of rice" – "*O tempo do arroz*"

"The time of rice III": Hope in times of struggles

In the 1960s, Coqueiro village, Maranhense mainland. Juliana left her mud house in the early morning with the ebb tide, and headed towards the mangrove forests north of her village. This year, like last year and the year before, the swidden field she cultivated with her husband yielded scarce crops. The bits of manioc, beans and corn hardly allowed her to feed her children. The soil here was barely more fertile than in Curva, the village some kilometers further inland that Juliana had left with her parents a little over a decade before. At that time, she had been ten. Today, she was married, had children and needed to find a way to make ends meet. Her only hope now was the muddy mangrove terrain that formed a zone of transition between the familiarity of her village's infertile land and the unknown vastness of the myriads of deltaic islands and waterways. While her husband tried to catch some fish, Juliana made her way through the mangrove mud in search of crabs. She often stayed until dawn and often she caught only a few crabs. Sometimes she found at least some potato bags, which she took home to sew clothes for her children. Crab gathering was hard work. Sharp oyster shells, hidden in the muddy ground, easily sliced Juliana's bare feet. The mosquitos had no pity and the crabs withdrew deep into their holes. Juliana had to stretch her body on the muddy ground to glide her arm into the burrows and grab the crabs. She had only her working clothes and one other dress. Back in the village, she scrubbed her arms and legs, and tried to remove the mud from under her nails, but a hint of the muddy smell stubbornly persisted, clinging to her body. If her only dress was not dry yet, she hid in the basin until she could put it on again.

Months later, Juliana heard rumors about working opportunities in the rice fields on some of the deltaic mangrove islands not far from a village called Passarinho. The family moved

without hesitating. Juliana was only in her early twenties when she arrived in Passarinho, but her body was worn out from the hard work, and she felt hopeless and down in the dumps. But her husband started working in the rice fields, many people helped the family to get on their feet again, and slowly life improved.

In the 1960s, Passarinho village, Canárias Island, Parnaíba Delta. Teresinha had recently got married, but it had not been a lucky marriage. Her husband had left her alone with their small daughter. He had left her for other women. There were not many opportunities, especially for young women such as Teresinha, to make a living in the village. Seeing her struggling, people started asking for Teresinha's daughter; they wanted her to give the girl away. They wanted to raise her daughter for her, offering the girl better living conditions.[29] But she was Teresinha's only daughter – her firstborn had not grown up; she had died early – and she did not want to give her away. Seeing no other option, Teresinha decided to go working "in the mud" (*na lama*). She left in the early morning, walked the long way towards the mangrove southwards of Passarinho where her uncle and cousins had a rice field. She planted rice, shifted rice, cut rice and returned home only in the late afternoon. It was hard work but it allowed her to raise her daughter and help her father. Her father supported them with subsistence and she worked to buy what the three of them needed – shoes, clothes and other such things.

***

The period of intensive rice cultivation in the mangrove southwards of Passarinho came to an end probably around 2010. People commonly refer to this period as the "time of rice" (*o tempo do arroz*). Both my visit to "the other side" and Seu Pedro's story that open this chapter, as well as the stories of Dona Juliana and Dona Teresinha, today in their seventies and still living in Passarinho, illustrate that the fertile rice fields provided working opportunities for island inhabitants but also attracted many people from rural villages on the mainland to move to the deltaic islands, especially during the 1960s and 1970s. Migrants established themselves in existing villages such as Passarinho, but formed also completely new settlements such as the one where I met Seu Pedro.

[29] Still today, such informal adoption is a very common practice throughout the region and generally in rural areas of the Northeast. Families who struggle to make a living, families who already have many children and can't come up with enough money for another one, or left-alone mothers, frequently give away (*dar*) one of their children for another family to raise (*criar*) it. In some cases, women who cannot have children or who are in their menopause also "ask for" (*pedir*) permission to raise a child of another woman. The adoption can be quite flexible. Some of the adopted children regularly visit or live for shorter time periods in their biological parents' homes and others return to their homes after a while, when the biological parents' situation is better.

When the yields of the rice fields started declining, many villages shrank or disappeared almost completely, as many migrants either returned to their home villages on the mainland or moved on in search of alternative working opportunities and better access to education and health services. Current delta inhabitants generally remembered the "*tempo* of rice" as a period of abundance; there was a lot of work and even more rice. The productivity of the rice fields in the mangroves was so high, people said, that part of the rice harvest was spoiled by falling into the mud. It was a time when winters were "good" (*bom*); a time, therefore, when winter rains were abundant and long-lasting (from January to June), turning the villages into swampy, flooded landscapes. People described these landscapes where only "crusts of the earth" (*crustazinhas de terra*) emerged from the water, where one had to look for the "heights" (*altos*) – the slightly higher grounds – when walking around, and where "fish swam through home gardens like butterflies," as "beautiful" (*lindo*). According to several inhabitants, the decline of rice cultivation could be related to an increase in "bad winters" (*inverno ruim*). Since some years ago, they observed, the winters have become "weak" (*fraco*) or have "failed" (*fracassou*); rains have sometimes ceased already in April, lakes have filled less and many "bleeders"[30] (*sangradores*) – and with them fish – have not reached the villages anymore. During the consecutive bad winters, therefore, the many watercourses crisscrossing the mangroves southwards of Passarinho did not "sweeten" (*adoçar*) enough. The water, people often pointed out, had "salted" (*salgou*) over the course of the 2000s and without the natural irrigation of the winters' freshwater floods, rice cultivation had become impossible. Simultaneously with the worsening of winters, some delta inhabitants further explained, more and more capybaras and pacas appeared. People generally describe these rodents with a certain disgust, comparing them for instance to "big pigs" with ugly, giant muzzles that voraciously devour rice crops, and their rapid proliferation had thus resulted in considerable damages to the already declining rice harvests.

"The *tempo* of rice" is again illustrative of the ambiguities so characteristic of the deltaic landscape. The Parnaíba delta is in many ways a place of abundance that offers numerous possibilities for livelihoods. Mangrove forests alone harbour an incredible number of species – crabs, shells, fish, birds, mammals – and are excellent nurseries. The islands' dry savanna forests (*caatinga*) offer a wide range of fruits; cultivated crops prosper in the fertile sandy soils. Watercourses, some deeper, some shallower, provide different kinds of habitats for a variety of fish species. Fluvial and tidal movements continuously renew and refresh by

[30] Channel through which excess water is diverted or flows away from a river, reservoir or lake.

stirring up, flooding, and depositing new nutrients. In mangroves, such natural irrigation through tides was indeed favourable for cultivation. It renewed the soil so that the same plot could be cultivated for several years, in contrast to fields on the land that needed to be shifted to new cultivation plots annually. However, the ambiguity once again lies in the continuous and often unruly and difficult-to-predict transformations – as fast as new possibilities open up, they could also dissolve again. In the delta, possibilities are indeed highly elusive, rarely long-lasting and often pop up unexpectedly. This elusiveness of possibilities requires people living and dwelling in the deltaic landscape to remain flexible, to improvise and to jump onto opening possibilities. The opening of an opportunity, such as rice cultivation, often attracts inflows of migrants, whereas its closing leads to outmigration. This creates additional social fluctuations and elusiveness in many deltaic places.

The delta's elusive possibilities are ambiguous in that they bring about both opportunities and hope and also frustration and despair. In this way, for a Western observer such as myself, coming from largely stable urban surroundings, the narratives of an ever-drier landscape, with scarcer rainfalls and saltier waters that led to the complete abandonment of what had been many people's main livelihood might, at first sight, spark a sense of doom – or evoke images of what Cons (2018) calls "heterodystopias": places reduced to coping with inevitable catastrophes. Such accounts echo well-known climate change narratives dealing with sea level rise and changing precipitation patterns that would first of all and majorly affect the vulnerable coastal communities. Questions then emerge as to how people cope with these changes affecting their lives so tangibly. One might expect an atmosphere of despair, of sorrow or anxiety for the future, or at least anger and complaint. Surprisingly, however, during my fieldwork, I did not encounter such negative emotions. Passarinho's remaining inhabitants were neither desperate nor hopeless or upset about the occurrences that had brought the "*tempo* of rice" to an end. There was a trace of nostalgia in Seu Pedro's account. Relief and gratefulness towards the rice plantations for having helped them to escape past struggles permeated Dona Teresinha's and Dona Juliana's accounts, the latter of whom especially repeatedly insisted on how lucky she was to live a comfortable life together with her family in Passarinho nowadays.

Upon hearing my questions about the reasons and effects of the decline of rice cultivation, people – often with a certain serenity – simply shrugged their shoulders, telling me "it is the times" (*é os tempos*), or "the times change" (*os tempos mudam*), as if such happenings were part of how the deltaic world worked.

It is the dream of modernization and progress that most Western Europeans were raised on, Tsing (2015, 20) argues, that makes us "imagine precarity as an exception to how the world works." She calls for embracing precarity, which she describes as "life without the promise of stability" (2015, 2) and which she argues has become the "condition of our time" (2015, 20). There is, of course, as Millar (2014) points out, a substantial difference in experiences of stability according to one's positionality, such as one's geopolitical context and social position (e.g. class, race, gender). In this way, the post-industrial societies of Europe, North America, and Japan, where Fordism, and thus experiences and promises of stability, were strong have also been most affected by its dissolution. In Northeast Brazil, on the contrary, precarity has always been part of experiences, especially of those of poor rural laborers. Most delta inhabitants have never experienced stability; they have never had access to what Tsing (2015) calls the "handrails" that progress and modernization narratives offered during the 20th century. Scoones (2019) suggests that it is precisely from these margins that we should start learning. The improvised, unruly, somehow unconventional perspectives of people who have been living "with, by and from uncertainty" over millennia might contribute to challenging conventional practice and thinking (Scoones, 2019, 30). Similarly, Tsing proposes that precarity, which is marked by indeterminacy, makes us vulnerable and noticeable to others. Thinking through precarity therefore allows us to see indeterminacy not only as destructive, as a failure of a smoothly working world, or as frightening, but allows us to acknowledge it also as something that enables life, that creates possibilities for life (Tsing 2015).

Tempos, I propose, are one such example of looking at the world through precarity or through the perspective of those who have been – and still are – living with continuous transformation on a daily basis. Whereas in Chapter 4 I will explore the conception of the *tempos* (time/weather) of particular things and their interweaving with delta inhabitants' practices, everyday life and sociality, here I want to focus on the "times" of the past, equally referred to as *tempos*.

Tempos thus here refer to past, completed periods of time, and highlight particular characteristics of those periods. My interlocutors mostly talked to me about the "*tempo* of rice," the "*tempo* of the fields or *fazendeiros*" and the "*tempo* of the salt works."[31] These *tempos* are somewhat comparable to epochs. However, unlike the Western chronological and linear thinking of history and past epochs, *tempos,* even if referring to past periods, can under certain circumstances reappear. For example, during the winter of my fieldwork, rain was

[31] For the latter two see below.

abundant and thus many people told me that after four or five such rainy winters, rice cultivation might become possible again – that is, there might come another "*tempo* of rice." Such non-linear thinking, where the recurrence of past times is an option, again underlines the deltaic landscape's manifold possibilities, their unpredictability and ephemerality. The closing of opportunities, is therefore neither definitive, nor necessarily negative or destructive, but a renewal and reorganization towards something different.

Hence, if the accounts of the *tempos* of the past converge at some points with the work of historians and the written historical accounts of the region, such as the boom-and-bust economies I described in the previous part, they nevertheless differ in many other aspects. Some attribute this disparity to the social marginalization of the deltaic islands and their inhabitants. Oliveira (2016), for instance, points to the invisibility of fishermen and other "workers of the sea" (*trabalhadores do mar*) in Parnaíba's historiography, which has predominantly focused on the urban areas and their inhabitants. Only recently, he notes, have a few studies, mainly conducted by history students from Parnaíba's University, started paying attention to and integrating the history of the marginalized island areas and their inhabitants.[32]

Nevertheless, besides relating to the exclusion of island inhabitants' accounts from the making of official history, the different realities expressed by *tempos*, I would add, also offer an alternative view of the world. *Tempos* emanate from a different way of perceiving change, the passage of time, and the continuous transformations inherent in the deltaic landscape. To put it differently, Parnaíba's official history has largely focused on progress, on improvement and the growth of economies, and in so doing has not only neglected livelihoods that do not conform with progress stories, such as delta inhabitants' improvised mix of activities, but has also ignored nonhumans as active participants (e.g., Tsing 2015). In such a perspective, salt water's intrusion, sand dunes' burying and capybaras' voracity are seen in negative ways, as obstacles to progress, rather than as part and parcel of a lively, unruly, and continuously transforming world.

By looking at the past through the perspective of *tempos*, in contrast, much more complex stories than both progress narratives and straightforward environmental degradation narratives

[32] For example, Braga, Daniel Souza. *Catadores de Caranguejo do delta*: história e memória (1960-2010); Gomes, Luana Bittencourt. *Ilha de brancas dunas*: história e memória do bairro Tatus em Ilha Grande do Piauí (1975- 2015); Oliveira, Pedro Vagner Silva. *Correndo na vela*: experiências e modos de vida de trabalhadores do Delta (1975-2014); Souza, Matheus Oliveira. *A Urbe, O Rio e a Ilha*: Parnaíba através de suas relações com os trabalhadores ribeirinhos do Delta do Rio Parnaíba (1975-2015).

appear. The "*tempo* of rice," for example, not only informs us about intruding salt water – which probably relates both to a rise in sea level linked to climate change and the construction of the Boa Esperança dam[33] in the 1970s – and the decreasing rice prices due to rice imports from the large-scale plantations of the Brazilian south, but also hints at a range of other phenomena. It points us for instance to stories of precariousness, of people struggling to make a living and migrating in search of better opportunities during a period, the 1960s, that the dominant historiography often portrays as characterized by the Brazilian "economic miracle." It also draws attention to rapidly increasing numbers of capybaras. The rice fields in the mangroves indeed offered ideal conditions for these semi-aquatic rodents. If normally they feed on a variety of grasses, when given the choice they selectively feed on high-protein, high-calorie and low-fiber varieties such as rice. Also they use water and forests or bushes as a refuge and thus prefer grazing close to such flooded, forested areas (Arteaga and Jorgenson 2007; Felix et al. 2014). Furthermore, if some people used to hunt capybaras for subsistence, since 1998, Brazilian legislation considers this an environmental crime,[34] and additionally, through the declaration of parts of the deltaic area as a Marine Extractive Reserve (RESEX Marinha) from 2000 onwards, controls and environmental inspections have increased.

In the emergence and dissolution of the "*tempo* of rice," therefore, stories of mangroves, of fluctuating boundaries of fresh and saltwater, of projects of dredging, of people's struggles in precarious times, as well as of weak winters, of falling rice prices, of proliferating capybaras and changing environmental legislations come together.

People's wondering about my insistence and interest in the details of the ending of the "*tempo* of rice," and their simple explanation that "it is the times," or "times change," illustrate that delta inhabitants conceive the ending, the dissolution of *tempos* not as exceptional but as inherent in the deltaic world. *Tempos* emerge and dissolve; they do not necessarily follow one another but may intersect and interweave. Some, such as the "*tempo* of rice," ended suddenly; others, such as the "*tempo* of the fields," persisted longer and faded out gradually. Unlike in linear-progress thinking, in which the emphasis is on a forward movement, laid out by descriptions of boom-and-bust economies, *tempos* point to multidirectional thinking, encompassing multiple temporalities both of humans and nonhumans (see also Chapters 1 & 3). *Tempos,* then, are not primarily sustained or controlled by humans. Fluctuating waters and

[33] Delta inhabitants from different places told me that since the construction of the dam, the Parnaíba River carried less water to its mouth and the distributaries. Consequently, the salty tidal waters could also flow further inland, bringing salt water to places that had formerly been freshwater areas year-round.
[34] Law n° 9.605 February 12, 1998

sands, mangroves, capybaras, people's practices, and political decisions all interweave to bring about or dissolve specific *tempos*. In this way, *tempos* come close to what Tsing (2015) refers to as "polyphonic assemblages." Tsing (2015) describes assemblages as open-ended gatherings of ways of being that shift over time and in which unintentional coordinations – such as the proliferation of capybaras – develop. Qualifying them as polyphonic, Tsing (2015) argues, points to the multiple temporal rhythms, resulting from human and nonhuman world-making projects, that gather in an assemblage. *Tempos* similarly emerge through the interplay of various human and nonhuman beings' actions, through a temporal coming together, through sporadic coordinations of the rhythms of diverse lifeways, and they may change or dissolve with shifting conditions. *Tempos* thus describe the emergence of specific possibilities of multispecies collaborations, which however are always temporal and elusive. Moreover, by allowing us a glimpse into history from the delta inhabitants' perspective, *tempos* also emphasize that whether opportunities open or close is always also intertwined with local, national and international dynamics on one hand and with larger political, economic and social contexts on the other hand.

Denied *tempos*, or the exclusion from boom-and-bust economies

Exploring people's diverse accounts of the *tempos* of the past and comparing them to the region's official historical accounts provide us not only with insights into the specific possibilities that at one point or another emerged for delta inhabitants but also informs us about denied opportunities. In this way, it appears that delta inhabitants have more than once been excluded from the benefits of the economic booms, sometimes because of the continuous, volatile transformations of the deltaic landscape (e.g., difficulty of access, transport), but more often because the emerging Parnaíban elite either deliberately left them behind or took advantage of their marginal position to exploit them.

Strikingly, for example, for the inhabitants of Passarinho, there has never been a *"tempo* of carnauba" in spite of the abundance of carnauba palms and the economic boom of its wax from the early 20th century onwards. Inhabitants of Passarinho have been using carnauba palm leaves and trunks for a long time for construction and for basketry and a variety of other woven objects. However, only recently, decades after the decline of its boom and increased value, some men have started extracting the wax powder during the dry season. In the past, Passarinho's inhabitants recall, mostly people "from outside" (*de fora*) came to extract

carnauba wax on Canárias Island. For cutting the leaves and extracting the wax, the land had to be rented from large-scale landholders (*fazendeiros*) who owned extensive areas of the islands at that time, restricting access so only wealthier people could benefit from it. Villagers who rarely disposed of the financial means to rent the lands were only sporadically hired as "leaf cutters" (*derrubadores*). Since the declaration of the area as a marine extractive reserve (RESEX Marinha) in 2000, privatization of land is forbidden on Canárias Island. Nevertheless, the extraction of the powder still requires the carnauba leaves to be passed through a sort of shredding machine, which is difficult for villagers to access. Some carnauba traders from the mainland have therefore started providing shredding machines, which they transport to the villages, for the men working for them. Moreover, workers are usually only paid at the end of the extraction period (end of dry season). As most of the men have no other regular income during that time, traders also started selling them basic supplies such as rice, manioc flour, beans and coffee on credit for the whole six-month period. Some villagers' accounts indicate that feelings of exploitation persist. Dependency on the traders remains substantial, allowing them to largely determine the prices both of the wax powder and also of the food supplies sold on credit.

"The times of the large-scale landowners" – *"O tempo dos fazendeiros"*: finding opportunities in dominated spaces

On the deltaic islands, opportunities were – and still are – often to a large extent determined by the more powerful, requiring delta inhabitants – besides being flexible and ready to jump to opening possibilities – also to improvise and learn how to make a living in left-open interstitial spaces. Let me turn to accounts on the "*tempo* of the *fazendas*," also referred to as "*tempo* of the fields (*roças*),"and on the more recently established extractive reserve to illustrate this.

During the "*tempo* of the fields," large-scale landowners (*fazendeiros*) owned huge territories on the islands. Most *fazendas* (farms), including extensive surrounding lands, were owned by the elite of the region. The Cajú Island, the second biggest island of the Parnaíba Delta, situated between Barrinha and Canárias Island, was for instance already in 1729 granted as *sesmaria* probably to a cattle rancher.[35] In 1919 James Clark, founder of the *Casa Inglêsa*, the British trade house in Parnaíba, and main promoter of the carnauba wax export, acquired Cajú

[35] See http://www.ilhadocaju.com.br

Island, which until today remains a private property. The inhabitants remember that the *fazendas* at a place called *"Pé de Brejo"* (Foot of the marsh) southwards of Passarinho belonged to a succession of owners, of whom at least two – Sebastião Furtado and later "Zé Tude" – were at some time mayors of the municipality of Araióses.[36]

The unequal distribution of land indeed dates back to colonialism. In the early years of colonization, the Portuguese were not so much concerned with the appropriation of land as with the extraction of its productive value. The crown thus granted large tracts of land, the so-called *sesmarias*,[37] to nobles who were willing to make the land productive. Over time, more and more large landholdings (*fazendas*) were established, where ranching and agriculture was practiced, using primarily the workforce of Indigenous and African slaves (Andrade 1995; Nelson & Finan 2009). Although the system of *sesmarias*, which dominated throughout the colonial period, only granted the right of possession (*posse*) of the land, and not its ownership (*domínio*), it largely restricted access to land to wealthier people. Hence, in parallel, another form of land appropriation – which would be gradually recognized by authorities – emerged. All those without any legal means to acquire *sesmarias* started occupying lands at the margin of large landholdings (Silva 1997), thus initiating a process of land squatting and occupation (*posse*) that exists until today.

It was to this practice of spontaneous land occupation that Seu Pedro, for instance, referred when explaining that the migrants who came to work in the rice fields "just arrived on the island and built a house." Although first practiced mostly by migrants and small farmers, later large landholdings also began acquiring lands in this way. Especially in the institutional gap that followed the end of the *sesmarias* system (1822–1850), claims for small and large land possessions (*posses*) increased massively (Silva 1997). The absence of strict control and delimitation both of *sesmarias* and *posses* – the limits inscribed in the land register were defined by the *sesmeiros*, respectively *posseiros* themselves – resulted in a real mess, intensifying the illegal acquisition of lands (*grilagem*) for instance through falsification of documents as well as conflicts between *sesmeiros* and *posseiros* (Silva 1997; Figueiredo Lima et al. 2013). The Land Law of 1850, which established that new land titles could be acquired

[36] Canárias Island is part of the municipality of Araióses, State of Maranhão. Sebastião Furtado was mayor from 1957 to 1961 and José Cardoso do Nascimento known as "Zé Tude" from 1977 to 1983, 1989 to 1992 and 2005 to 2008 (see e.g., http://araios.blogspot.com/2011/06/historia-de-araioses.html?m=1 and https://pt.wikipedia.org/wiki/Araioses).

[37] The size of the *sesmarias* varied considerably. Commonly a *sesmaria* was limited to 3 Portuguese square leagues (1 *légua* = 6,6 km), which corresponds to 13,680 hectares. However, many families managed to get bigger grants by applying by the names of various family members (Chasteen 1991). In the Piauían hinterlands the *sesmarias* could extend to 10-12 square leagues, that is up to more than 50,000 hectares (Alves 2003). .

by means of purchase only, was a first attempt to regain control and order the land-tenure system, for instance by setting up the standards through which *sesmeiros* and *posseiros* could become full owners of occupied lands. However, the Land Law remained largely ineffective, in part because it failed to adequately distinguish between public and private lands (Silva 1997). The messy situation thus continued, promoting illegal appropriation of public land, which in some areas persists until today and leads to numerous and often violent land conflicts.

Such conflicts have also repeatedly occurred on the deltaic islands. Barrinhenses have, for example, been threatened with expulsion by a former landowner not so long ago (around 2008). And in Passarinho, villagers remember the appearance of an alleged landowner during the flourishing of rice cultivation, who all of a sudden began introducing a leasing system. First, people say, the landowner demanded a rent of 1:4, that is, of every four bags of rice produced, one had to be paid to the alleged owner. Later, with the strengthening of the rural workers' union, the rent was reduced to 1:10. The declaration of the area as a marine extractive reserve aimed to solve such land conflicts by not tolerating large-scale landowners anymore and instead guaranteeing long term usufruct rights to inhabitants, now considered as "traditional population" (see chapter 3).

Although the extractive reserve largely solved people's restricted access to land, in villagers' narratives, the roles both of the administration of the reserve (ICMBio) and of the former large-scale landowners appear to be contradictory. In the absence of state investments, some of the landowners organized basic infrastructure such as transport services, which facilitated people's mobility and access to the mainland. Furthermore, landowners usually did not live on the islands, but let housekeepers and cowboys take care of their houses, land and cattle, which provided a variety of work opportunities for villagers (in exchange for money or goods). In this way, even if the land was not their property at that time, people remember a certain autonomy and freedom they had in relation to their activities. Seu José, now in his fifties and having worked in a range of different occupations, from planting rice, to crab gathering, to keeping house and garden on a private neighboring island of Passarinho, recalls: "the *fazendeiros* were not controlling us. We could build houses and cultivate our fields where we wanted, we could raise animals and no one bothered us. It was our decision." It is this freedom to decide what to do, where, and when that many of Passarinho's inhabitants see restricted through the numerous rules and regulations of the extractive reserve (see also chapter 7). During my fieldwork, for instance, I was repeatedly told that the "*semibio*," as the

ICMBio is commonly referred to, did not allow the cultivation of swidden fields (*roças*) anymore. I was astonished and wondered about the reasons for depriving villagers of the ability to grow their own food. Only later did I learn that cultivating swidden fields was not directly forbidden, but required passing through an authorization process. Hence, one had to delimit the desired area, travel to the ICMBio's office in Parnaíba and request the cultivation of that specific tract. The ICMBio would then send an employee to check the suitability of the area and only then issue a permit. As swidden fields are usually cultivated in a rotating system, the process had to be repeated every year. Far too time-consuming and administrative, this procedure frightens off the mostly illiterate villagers, who then depict it as an interdiction of their ability to cultivate fields.

The mutual incomprehension that largely shapes the relationship between the extractive reserve and Passarinho's inhabitants became even more evident to me in a conversation I had with Dona Cecília in Dona Alice's home garden one afternoon in early September. Dona Cecília lived in Caiçara, a neighboring village, roughly a 20-minute quad drive from Passarinho. She is the cousin of Dona Alice's mother. That day, she came to visit but also to collect some cashew fruits and nuts, as this year most of hers had been "burnt" (*queimados*) by the moon's eclipse.

"Now, they want to ban livestock farming," Dona Cecília told me, while she bent over to pick a cashew fruit from under the dried leaves. She explained that it was an employee from Parnaíba who had informed her about this when some days ago he had come to the island to interview some villagers. Dona Cecília looked up from the cashews on the ground and added, visibly annoyed: "I told him, 'Only if you give me half of your salary, I'll stop breeding. You are an employee, you have a fixed salary at the end of the month, but I don't, so how am I going to live without raising my animals?'"

As our bins filled up, we went over to the roofed veranda. Dona Cecília sat on the floor, a cast-iron pan between her legs, and started squeezing the juice out of the fruits. Her wrinkly hands moved smoothly, giving a hint of the familiarity and intimacy she had with this work. Later she would prepare a reddish beverage called *cajuína* from the juice. She would send most of the bottles to her daughter in Fortaleza; her great-grandson loved the beverage and Dona Cecília was convinced that drinking one cup before going to school would make him strong. I remembered Dona Cecília telling me earlier that day that she had brought her *cajuína* recipe with her from her home village on the Maranhense mainland, in the *interior* (rural area), somewhere behind the town of Tutóia. It was not the same, she insisted, as that of the

cajuína they sold in the city of Teresina and Parnaíba, appreciated by tourists.

While squeezing the fruits, Dona Cecília recalled her arrival on the island at some point in the 1960s. Young and unmarried at the time, she had not been very enthusiastic about moving to the island: "When a relative of mine told me to come to live on the [Canárias] island, first I did not want to. I told him that the island was for cattle, not for people," Dona Cecília explained with a loud giggle that revealed a glimpse into her nearly toothless mouth. "At this time," she continued, "at the time of the *fazendas*, it was full of livestock here, it was an island of farmers. There were cows, pigs, goats and sheep everywhere. Who ever could afford it raised cattle and who did not have the means (*condição*) raised pigs and goats." Dona Cecília paused, looked up shaking her head, and added, "I can't believe it. Many people were raising animals here and we never had problems, the water was clean. And now an employee from outside (*de fora*) comes and tells me that I have to stop!"

I had visited Dona Cecília in her house in Caiçara before. She had moved there from Passarinho many years ago when she had married her husband. One of the biggest home gardens in the village surrounded the small brick house she shared with her husband and two adult, unmarried sons. Dona Cecília was especially known for her nice coconut palms, but she had also planted banana palms, papayas and cashew trees. Close to the house, she grew tomatoes, peppers, coriander and chives in a self-made raised bed, covered with an old fishing net to protect it from the chickens, ducks and turkeys that freely strolled around. In the rear part of her garden, separated by a wooden fence, she raised cattle, goats and pigs. In spite of her initial reluctance to live on an island of cattle, over time Dona Cecília has become used to island life. Besides developing an affinity with island life and the raising of her animals, she also relied on it to make a living and, now in her 70s, could not imagine life without it anymore.

In comparison to the "*tempo* of rice," the accounts of the "*tempo* of the fields" raise a range of different issues, allowing us to gain a more nuanced understanding of the *tempos* of the past. Dona Cecília and Dona Juliana are both roughly the same age and arrived around the same time on the island. Yet, they do refer to distinct *tempos* – that of fields and that of rice, respectively. Both *tempos* flow into each other; they are not clear-cut periods with a date of beginning and end, nor do they chronologically following one another. Both *tempos* describe a set of characteristics and relations from each woman's point of view. The women lived different lives and the *tempos* they evoke refer to their specific pasts. This does not mean that *tempos* are to be confounded with personal trajectories. Rather, they refer to shared pasts

among a group of people. However, *tempos* might coexist in time with other *tempos*, which illustrates that an opportunity that emerges for or is created by one group of people is not necessarily taken up – either not accessible or not interesting – by other groups within the deltaic landscape and even within the same village. This importantly points to the diversity of realities within the delta and the many interweaving historical trajectories making it up.

Furthermore, the "*tempo* of the fields" highlights that *tempos* do not always correspond to an overall flourishing opportunity, such as rice cultivation, but might also refer to small, sometimes individual, possibilities such as getting work on a *fazenda*, getting access to a pig or goat, or just the freedom of making a living without being controlled. Such opportunities pop up here and there. Sometimes they arise in the interstices of restrictions, of domination by more powerful actors (e.g., large-scale landowners) and often they have to be actively created by people. In order to be seized, they require people not only to actively look for them, but also to be flexible and creative, as I will further explore in Chapter 4.

"The time of the salt works" – "o tempo das Salinas" (I): Fishing at the pipes

"*Os tubos*," the pipes, is one of Maurício's favorite fishing spots. Massive pillars protruding from the river bed secure those aerial tubes; the pillars harbor a diversity of species. Oysters cover the grey concrete walls, and swarms of *carapitangas*[38] and solitary *pacamãs*[39] hide in the submerged structures. Throwing a hand line there often results in successful catches. Maurício described fishing here as a pleasure.

From the 1930-40s, the "Salt and Navigation Company Igoronhon SA," consolidated company of the Belgian Solvay & Cie group, started its activities on Igoronhon Island, west of Barrinha. It became one of the biggest saline companies of Brazil, turning the municipality of Tutóia into the 3rd-biggest salt producer of the country at that time. Many people from the region found jobs there. The company constructed houses and even a church for all their workers. Dona Valentina was one of them. As a young woman, she found work there as a housemaid, cleaning the workers' houses and serving meals. In the 1990s, the company completely stopped all its activities. After the company had ceased operation,[40] Dona

[38] *Lutjanus sp*. (probably Silk snapper (*Lutjanus vivanus*)
[39] *Batrachoides sp.* (probably Pacuma toadfish (*Batrachoides surinamensis*)
[40] Delta inhabitants said that it went bankrupt. According to some the reason was excessive stealing of the workers, according to others, the engineers had made several major errors that made the salt extraction much more difficult.

Valentina moved back to Água Doce on the mainland. Only a few years ago, in her late eighties, when the mainland town was getting increasingly violent, she decided to return to the peacefulness of island life and settled in Barrinha.

Igoronhon remains abandoned until today. The vegetation slowly reclaims the bleak areas of once luxuriant mangroves. The huge abandoned aerial water pipes, which served to pump fresh water from the mainland to the island, ruined pools for salt extraction, vacant houses and an empty church are the only vestiges that remind visitors of the former intensive activities.

***

Conclusion: Looking around

The Parnaíba delta is in many ways a landscape of possibilities. But it is also a landscape of ambiguities. Its possibilities are elusive, opening up and dissolving sometimes abruptly and often unexpectedly. Focusing on historical trajectories, this chapter has illustrated on the one hand that the possibilities of the deltaic area have been tempting for project-making; but at the same time, the difficulties involved in planning, taming and establishing infrastructure have challenged the projects' endurance and expansion, often leading to short boom-and-bust cycles and in the end to the complete abandonment of trade. From this perspective, the inherent, volatile changes of the deltaic landscape are perceived as frustrating and as hindrance to development and progress. This chapter has also drawn attention to the entanglement of seemingly "natural" changes with other dynamics. Hence, not only fluctuating waters, emerging sandbanks and siltation, but also political decisions and neglects, as well as fluctuating prices and vanishing markets have contributed to abruptly declining booms and the gradual cessation of trading activities.

On the other hand, this chapter has focused on delta inhabitants' narratives and perceptions of the past, which have tended to be excluded from the "official" historiography of the region. Current inhabitants' accounts and life stories indicate that the abundance and opportunities of the deltaic islands have attracted many people from the region but also from further away in search of better livelihoods. They, too, soon got to know that although the possibilities of the delta were manifold, they were also unpredictable and ephemeral. When possibilities closed, many moved out, leading additionally to sometimes considerable social fluctuations. Others stayed however; they learned to reorganize and to look out for new ways of making a living. Hence, living in the deltaic landscape required – and still requires – people to be attentive,

flexible and creative in switching between and finding new opportunities. The way people speak about and perceive past periods, or *tempos* as they call them, reflects this constant arising and vanishing of possibilities. Their conception of *tempos,* however, acknowledges the active participation of other-than-human actors in the coming and going of *tempos*, that is, in the making of history, and thus also considers volatile dynamics as part and parcel of how the deltaic world works and not as external and disturbing. People's accounts of the *tempos* of the past are often not chronological or linear; they interweave and interrupt each other, they are messy and patchy, and in this emphasize the multidirectionality, the multiple pasts of the deltaic landscape and the multiple human and nonhuman beings composing and creating it.

Not only past projects, but also these beings and their lifeways have left traces in the deltaic landscape. As Tsing points out, "history is the record of many trajectories of world-making, human and not human" (2015, 168). In the deltaic landscape, however, traces and contributions to history, especially those of nonhumans but also of people making a living from improvised, informal and interstitial livelihoods, easily tend to be forgotten. Some even describe the Parnaíba Delta as a "rare case of pristine deltas essentially unaffected by human activities worldwide" (Szczygielski et al. 2015, 1). Certainly, the continuous movements of the deltaic islands erase, wash off and bury many marks of the past. Other traces, however, are neglected because they require knowledge and skilled perception to be recognized. Dona Alice was the first person to teach me that. On the excursion described in the vignette with which I opened up this chapter, she read the landscape to me. By identifying the presence of plants that had been planted by former inhabitants, she unveiled part of the history of Passarinho's other side to me. To put it differently, Dona Alice showed me how to look around. Looking around instead of looking ahead (Tsing 2015) appears to be important not only to make a living in the delta, to orient between volatile changes, opening and closing possibilities, and to find new opportunities, but also to recognize the delta's history, the traces of past human and nonhuman lifeways that contributed to the making of the deltaic landscape.

Chapter 3. "I don't know what I am" – *"Não sei o que sou"*

"You know, I don't really know what I am. I am not really Evangelical, nor only Catholic. I believe in God, that's for sure, but I also strongly believe in the *donos* (owners) and the *mãe d'água* (mother of water[41])," Dona Joana reflected after a visit from several Evangelical missionaries in Barrinha. Indeed, most delta inhabitants whom I met neither restricted themselves to a single religion, nor articulated a unique ethnic affiliation. Similarly to Dona Joana, Seu Titico, resident of Caiçara, a neighboring village of Passarinho, explained in a conversation we had about the newly established Evangelical church[42] in some villages of the Canárias island: "You know, I don't restrict myself, if there is a *festa* in the Catholic church, I go. If there is a *festa* in the Evangelical church, I go, and if there is a *festa* in *macumba*, I go too." In Barrinha, it was common among shrimp fishers to show respect to the "owner of the sea," but also perform offerings to the "mother of water," to ask for protection of the Afro-Brazilian Yemanjá and to pray to the Catholic São Pedro to give abundant catches.

With the exception of some men coming from the mainland to fish for shrimps in Barrinha, people I encountered also rarely described themselves solely in terms of a single profession, such as fishermen, shellfish gatherers, traders or farmers. Such singular categories, I started to realize, failed to acknowledge their multiple past and present practices. Moreover, besides references to village names – "from Barrinha"/ *Barrinhense*, "from Passarinho"/ *Passarinhense* – people neither used a collective group name nor a collective identity, but instead employed different references that usually varied according to circumstances (e.g., location, seasonality, person/institution addressed): "*Nós do interior*" (we from the rural areas/hinterland), "*nós da ilha*" (we from the island), "*nós do mato*" (we from the forest), "*nós pobres*" (we the poor), *Cearenses*,[43] *Maranhenses,*[44] *"povo rodado"* (people on the

[41] References to similar beings such as "owners" and the "mother of water," are found in several Indigenous groups in Brazil and are also widespread among river dwellers (*ribeirinhos)*, especially in Amazonia.

[42] It is probably not a coincidence that both reflected on their multiple, mixed religious beliefs in the context of the rather newly arriving, sharply increasing Protestantism, which in many ways menaces openness and mixture. See also chapter 7.

For an excellent discussion of differences between popular Catholicism and Protestantism (of being Catholic or *crente*) among Amazonian floodplain dwellers see Harris (2009). Harris indeed shows that whereas popular Catholicism integrated stories of enchanted beings, the power of shamans, herbal medicine, accusations of witchcraft, etc., becoming Protestant required a rejection of all of these, and additionally no drinking, no smoking and restrictions on food. Harris hence sees conversion to Protestantism as a threat to people's existence, for it requires a break with and refutation of the floodplain dwellers' whole way of life.

[43] From the Federal State of Ceará.

[44] From the State of Maranhão.

move[45]), fishermen, *marisqueiras* (shellfish gatherers), "extractivists" or *ribeirinhos* (river dwellers), were some of them.

This malleability and elusiveness, the difficulty of defining delta inhabitants using single terms, proved to be challenging in some situations. Whenever I spoke about my research, whenever I wrote an abstract for a conference or a chapter for discussion, I was confronted with the need to introduce delta inhabitants in a few sentences at most. At one point, I thus opted to describe people as "Portuguese-speaking" and "of mixed Indigenous, African and European descent," and enumerated some of their multiple practices. This is certainly true, but not really satisfying. People I worked with of course share many similarities with other rural inhabitants of the Northeast, with so-called "traditional populations," or with *ribeirinhos* (river dwellers) and *caboclos*. However, as I will further detail below, all of these categories seemed somehow problematic to me because of their heterogeneity, their underlying assumptions, or their associated negative connotations, and I had the impression that they failed to adequately characterise delta inhabitants.

The more I got to know people, the more I delved into their stories and everyday socialites, the more I realized that "being" or identifying oneself in singular terms did not make much sense to them. The many expressions and self-references I heard reflected a world in continuous transformation: elusive, short-lasting possibilities, unstable historical developments, booming and busting economies, intense migrations, fluctuating markets and a fluctuating environment, all requiring people to be flexible and creative to adjust, reorient, and reorganize to changing circumstances and affordances. In such a context, openness and embracing change (Harris 2009), rather than restrictions – whether to single practices, skills, beliefs, religions, or identities – are indeed crucial.

Whereas I will further develop how the continuous movements of the deltaic world relate to people's multiple and flexible practices, as well as the acquiring and readjustment of skills and knowledge in some of the following chapters (see Chapters 4 and 5), in the current chapter, I want to focus on five expressions relating to people's terms of identification or self-reference that I frequently heard during my fieldwork: "we the poor," "*carambola*," "lazy *ribeirinho*," "extractivists" or "traditional population," and "*povo rodado*" ("people on the move").

[45] *Rodado* literally translates as rotated or turned; it is however probably better translated as "people on the move" or "travelled people."

Indeed, rather than through ideas of "being" in terms of bounded concepts of identity, culture, and society, I explore delta inhabitants' trajectories and their somewhat multiple, at once malleable, shifting, and elusive identities through a lens of becoming. Following Ingold (2013) and Biehl and Locke (2017), a focus on becoming allows me to emphasize the always entangled, unfinished, and complex realities of ethnographic subjects: humans become humans in relation to other becoming humans and nonhumans, whose becoming is equally entangled and transforming; they are constrained by but also shape social, material, and structural forces (see Chapter 1). This chapter is thus structured along what can be seen as five different lines of becoming. These lines of becoming are not totalizing, nor do they reflect some kind of essence, they all in some sense describe people, allowing us to better grasp them, but they are neither stable nor do they stand alone. Delta inhabitants' differential employment of these lines of becoming reflects both changing situations and circumstances (e.g., historical legacies, power relations, experiences of marginalization, changing legislations) – including how delta inhabitants understand and experience these – but also reflects how delta inhabitants creatively readjust, revalorize, and strategically move among or oppose themselves to definitions, meanings, and impositions.

"*Nós pobres*" – "We the poor"

The first time Dona Joana served me fried *ovas* – fish ovaries full of roe – I sat at her kitchen table and she put a plate with something that resembled a strange yellowish sausage in front of me, and, amused at my facial expression, started singing the refrain to one of Zeca Pagodinho's sambas: "*Você sabe o que é caviar? Nunca vi, nunca comi, eu só ouço falar*" (Do you know what caviar is? I've never seen it, I've never eaten it, I've only heard speaking of it).[46] Poor people, the song goes on, do not know what caviar is. The poor people's foods "are more of fried eggs, *farofa* (fried manioc flour) and crackers," they "are curious" what caviar is, but it's "rich man's food"/ "on the table of a few/ a mad abundance," while next to it you "encounter hunger" everywhere.

While I looked a bit hesitantly at the plate in front of me, Dona Joana encouraged me, "go ahead, it's delicious, you'll see!" She then told me that until a couple of years ago, she had not known that caviar was fish roe. She had of course known Zeca Pagodinho's song and she had

[46] The song was composed by Luiz Grande, but became famous after being played by the musician Zeca Pagodinho.

known that caviar was for rich people, much too expensive for "poor" people like her to buy. But then she had found out that caviar was nothing other than fish roe, that the fried ovaries they ate frequently in Barrinha were rich people's food. Ever since, she added, she could not resist singing Zeca Pagodinho's samba when she prepared fried ovaries.

The incident reminded me of an afternoon some weeks earlier, when Dona Júlia had invited me to come and taste some freshly harvested maize. While the maize was cooking in a big pot on the clay stove in her kitchen, Dona Júlia had told me: "you know, we are poor, but we have everything." After a pause, she had added, "except money maybe." During my fieldwork, I heard numerous variations of such statements by other inhabitants.

The self-identification as "we the poor" (*nós pobres*) was probably the most widespread among my interlocutors.[47] This is not surprising as many of them, especially older inhabitants, shared stories of precariousness, hardship, and privation, recalling moments when they were "going hungry" (*passando fome*) or "experiencing need" (*passando necessidade).* Women in particular frequently described their past lives in terms of "struggle" (*luta*) rather than living.[48] Yet what struck me was the apparent contradiction that arose from people's emphasis on the abundance of their islands, often immediately following their self-description as "poor." Hence, while identifying as "poor," my interlocutors simultaneously distanced themselves from this category.

Delta inhabitants commonly described the deltaic environment as fertile and abundant. On the islands' sandy ground, they insisted, anything that one plants will grow, and with only a few hours of work, one can have fresh fat fish, some kilos of shrimps, freshly caught crabs (*caranguejo*, *siri*) or shellfish (*sururu*, *marisco*) on the table. Stories about people's amazement at the environment's richness also permeated narratives of arrival on the deltaic islands. Some of the delta inhabitants related their descent to migrants from the state of Ceará, south of Piauí, who started migrating northwards along the coast in search of better places to live, after having experienced several harsh droughts from the 19th century onwards. On this journey, a group of fishermen found Canárias Island and decided to stay, amazed by the great abundance (*fartura*) of fish, crabs, and seashells, as well as freshwater they encountered on

[47] As I mentioned above, the emphasis of a "line of becoming" over others also relates to the context and circumstances. Thus, these situations, both Dona Joana offering me fried ovaries/caviar and the frequent articulation as poor, are of course not independent of my relations with people and my own positionality (white, Euopean, rich in relation to delta inhabitants).

[48] The idiom of "struggle" (luta) is widely used in Northeast Brazil, in particular in rural areas. See DeVore (2014) for the wider meaning of "struggle," for instance the relation between suffering and struggle, as well as struggle and hunger, and how struggle relates to concepts of good living.

the islands. Initially living in simple fishermen's huts (*barracos*), they were later joined by their families and spread over the whole island, founding the five villages that exist today: Canárias, Passarinho, Caiçara, Torto and Morro do Meio. Later, some of these families would have also moved to other deltaic islands where they mixed with migrants mostly from rural villages from the Maranhense mainland, who, attracted by the rich possibilities the deltaic islands seemed to offer, came mainly in search of working opportunities and better living conditions.

Barrinhenses generally proudly and willingly displayed the abundance of their islands, especially to visitors from outside the delta, including myself. It was quite common for visitors to stay for lunch, the most important meal of the day, and hence lunchtime was often a moment when the delta's richness would not only become apparent, but also literally be celebrated. Dona Joana, for instance, would already start preparing the food for such festive lunches around 9 o'clock in the morning, helped by her twelve-year-old daughter or other women. Instead of one dish, she prepared a whole range of different dishes. For example, she would put a big pot of crabs, freshly caught in the mangroves in the early morning, to cook on the clay stove in her garden. On her kitchen stove, she would cook a stew with *maxixe* (maroon cucumber), *quiabo* (okra), and green beans from her own garden, along with a pot of rice, which, together with *farinha* (manioc flour), formed the basis of every meal. And with the *bagre* (catfish), *carapitanga* (vermilion snapper), and *peixe espada* (largehead hairtail) that her son had caught the afternoon before, she would prepare a delicious fish stew.

The deltaic islands are certainly fertile and productive, providing a variety of fresh food that may appear as strikingly rich, especially in comparison to many villages along the mainland, where fish, crabs, and shellfish are hard to come by, and people often struggle to survive by cultivating *roças* – swidden fields – mainly of manioc, which they process into different kinds of manioc flours. However, the narratives of abundance, and their *mise en scène* during lunches, on one hand contradict their self-identification as "poor", and on the other hand neglect common struggles of everyday life. For example, shrimp fishers in Barrinha sometimes in fact made relatively large amounts of money in a short amount of time. At other times, however, they were hardly able to fish enough to come up for their "*farinha*" – that is, their weekly basic supplies (see also chapter 7).



Figure 11: Celebrating abundance

Moreover, relations with outside actors, in particular buyers and middlemen,[49] were often characterized by unequal power and dependency. The latter not only largely decided on prices of shrimps, crabs, and cashew nuts, but they sometimes also disappeared suddenly, leaving delta inhabitants with the difficulties of quickly finding other "exits" (*saídas*) for their gathered and fished products.

Delta inhabitants' somewhat contradictory self-identification as "poor," and their simultaneous narratives and celebrations of abundance, thus partly relate to the deltaic islands' characteristic of open becoming, which I have described before (see chapter 1). Their seemingly contradictory self-identification as "poor" also reflects the tensions or oscillation of possibilities that are manifold in the delta, but also highly fluctuating and elusive. Rather than being fixed or permanent, things frequently change – sometimes abruptly and unexpectedly. People are often flexible enough and willing to migrate to another opening or more rewarding activity in time, but sometimes they struggle or get things wrong, and thus have to rely on social assistance, on help from other family members, or on shop owners' willingness to sell basic supplies on credit. But their self-identification as "poor" also relates to wider social contexts, in particular, reflecting experiences of marginalization, stigmatization, exploitation, and domination that delta inhabitants have often undergone, both when relating to more powerful actors (middlemen, administrators of the natural reserve, or (local) politicians), and when traveling for visits or jobs to the mainland and other regions of the country. In this context, the narratives of abundance can also be understood as a rejection not only of the marginalization of *Nordestinos* (inhabitants of the Northeast) in general, and the *sertão*[50] and *Sertanejos* – the northeast's dry hinterlands and its inhabitants – but also of mainland urban middle-class and elites' views of the deltaic islands and people dwelling on them.

Nordestino, Maranhense, Sertanejo

In early 2018, Seu Gabriel, who was in his late forties, lost his job as a construction worker in São Paulo and decided to return to Barrinha together with his wife Dona Miralva, after having spent more than twenty years away from the deltaic islands. Born on a neighbouring island, he

[49] In contrast to buyers (*compradores*) who purchase goods in towns and cities on the mainland, middlemen (*atravessadores*; from *atravessar* – to cross) move to the islands to buy products from delta inhabitants, or are themselves island inhabitants who transport the products to the mainland to resell.

[50] Early Portuguese settlers used the term for all the unexplored inland territories or backlands. However, by 1910, the term *sertão* was increasingly used, and reserved to refer to the drought zone of the Northeast in particular (Buckley 2017).

had spent most of his childhood and youth in Barrinha. On the island, Seu Gabriel explained, he felt at ease. He could rely on the support of his sister, Dona Joana, and fish for shrimps with his brother's shrimp-fishing team. After some months, he had enough money to begin the construction of their own house on a plot of land his sister had ceeded to him. In May 2018, however, Seu Gabriel and Dona Miralva returned to São Paulo, as his former boss offered him temporary employment. Their plan was to come back to Barrinha in December of the same year and invest the money they earned in fishing equipment (e.g., outboard engine, nets).

In Barrinha, such a back-and-forth between island and mainland towns is not uncommon. Most of the people I encountered in Barrinha had ties of some sort (e.g., relatives, place of birth, or having spent their childhood) either on neighboring islands, or places along the Maranhense mainland. However, none of the adults had been born on the island, and most had lived in two or more places during their lives. For instance, many people had at one point or another in their lives spent shorter or longer periods either in northeastern cities, such as São Luís and Fortaleza, in the northern city of Belém do Pará, or in southeastern cities such as São Paulo and Rio de Janeiro. There, they usually joined either relatives or acquaintances, and often found jobs through these networks. As was the case with Seu Gabriel, who was working informally, without a signed worker ID (*carteira assinada*), many people's employment was, however, highly precarious and did not accrue any benefits from social security or other programs. Moreover, especially in the metropolitan areas of the south, people not only found themselves in socially marginal positions, but also felt the disparities between the "poor" north and the wealthy, modern south, and experienced additional exclusion and stigmatization for being both Nordestino and Maranhense.

The likelihood of droughts, high infant mortality, illiteracy, economic stagnation, scarcity, periodic famines, and various unmet needs are only some of the factors that led Josué de Castro (1996) to describe the region of the Brazilian Northeast as "600,000 square miles of suffering." Often, the precariousness of the Northeast is related to its harsh climatic conditions, including the periodic droughts that regularly ravage great parts of the region. As I have mentioned before, stories about precariousness and droughts also permeate delta inhabitants' memories, especially of those whose parents or grandparents were part of the stream of migrants to the islands that fled the recurring droughts that affected the state of Ceará.

Buckley (2017) points out that it was during the so-called "Great Drought" of 1877–1879, one of the region's most devastating droughts, that national attention was for the first time drawn

to the Northeast's recurrent disasters. Even if Brazil's federal government established the first national agency to combat droughts[51] – which aimed at reducing the rural inhabitants' vulnerability and stemming the streams of migrants towards coastal cities – only a few decades later, in 1909, the Great Drought still marked an important turning point in the perception of the Northeast. If before, the region, ranging northwards from Bahia, was simply called "the north," now two different sub-regions started emerging: the "Amazon," fertile and economically flourishing with the rubber boom on one hand, and the "Northeast," associated with drought, famine, and chronic poverty on the other hand. During the rubber boom,[52] many of the drought migrants, referred to as "*flagelados do Nordeste*" – the scourged of the Northeast – moved, often making arduous journeys, towards the Amazon in search of temporary jobs. Later, during the industry boom in the South (1950s-1970s), a result of state-led development efforts, north-eastern migrants increasingly started to move to south-eastern cities such as Rio de Janeiro and São Paulo in search of better living conditions and working opportunities (Millar, 2018).

Although there were various development and modernization efforts in the Northeast during the 20th century, these recurrently failed to address the region's problems, which instead increased its contrast with the economic prosperity of other regions (Buckley, 2017). In this way, southern and costal urban elites' imaginations of the *sertão*, in particular, and the rural Northeast in general, as inextricably linked to hardship, scarcity, and hunger not only further consolidated, but, as Buckley (2017) argues, were also joined by concerns about racial degeneracy and cultural backwardness. The *sertanejos'* – and by extension the *Nordestinos'* – poor education and illiteracy, as well as their racial mixture (between native Indigenous Brazilians, European settlers, and black or *mestiço* refugees from coastal plantations), were increasingly perceived as indications that they were hopelessly backward and thus as hindrance to development and modernization. Indeed, at that time, many elites were convinced that blending Black or mixed-race Brazilians with white Europeans through marriage, the so called "whitening" (*branqueamento*) of the population, would advance the country to higher levels of civilization, and therefore the government started subsidizing European immigration to Brazil (Buckley 2017).

Droughts are thus important to understand not only the *sertões*, but also to shed light on the whole region of the Northeast. As Arons (2004) emphasizes, the droughts of the Northeast are

[51] DNOCS (Departamento Nacional de Obras Contra as Secas – National Department for Works to Combat Drought).
[52] The first rubber cycle (1879) and second rubber cycle (during World War II).

not merely "natural" disasters or problems of climatic harshness. It is not the droughts alone, he argues, but their combinations with sociopolitical realities that cause hunger, high infant mortality and rural-urban migrations. Arons convincingly points to the inherent contradictions of droughts: "Northeast Brazil has terrific droughts, of this I am certain, yet when the droughts end, people still do not have enough water to survive. So, when there is no drought, there is still drought. When there is drought, however, there in fact is enough water – if fairly distributed – to prevent people from dying of thirst" (2004, 14). In her foreword to Arons' book, Scheper-Hughes further emphasizes that local politicians have for generations made profits from the droughts by means of buying votes, for instance, through the exchange of assistance for loyalty, by maintaining dependencies, and also by diverting the money intended to help rural families into their own pockets (Arons 2004).

The inhabitants' contrasting self-identification as "we the poor" and their celebration of abundance reflect these various dynamics. When living in the wealthier south, it is impossible for delta inhabitants to escape being identified as "poor *nordestinos.*" Elite and local politicians from the nearby mainland often see the deltaic islands as marginal spaces and their inhabitants as backward and poor; they frequently abuse their power and try to exploit or deliberately cheat delta inhabitants. In contrast, the histories of older inhabitants and their antecedents tell of droughts and struggles elsewhere along the mainland and of the deltaic islands as refuges of abundance and possibilities.

Islanders, from the "interior," "from the forest"

Both Barrinha's and Passarinho's inhabitants have a longstanding relationship with the city of Parnaíba. Dona Joana, for instance, vividly remembered the *lancha* – a covered wooden boat – regularly leaving from Tutóia to Parnaíba during the "time of Zé Tude":[53]

> "It was so good. There was enough space to put up hammocks, it was a big boat that came crowded with people and merchandise. We would wait here [at Barrinha's shore], go by canoe to the middle of the river and from there to the *lancha*."

The *lancha,* which took about 8 hours to reach Parnaíba, stopped operating in the 2000s. Indeed, with the construction and improvement of roads on the Maranhense mainland, and the associated growth of Maranhense towns, fluvial transport shifted more and more to these new

[53] Former Mayor of Aráioses (see Chapter 2).

roads. Ever since then, Barrinhenses thus increasingly take care of their affairs in the nearby towns of Água Doce and Tutóia. However, most still regularly travel to Parnaíba – by canoe to Água Doce (around 1 hour), where a bus leaves to the Piauían city daily at dawn (around 3 hours).

Passarinho's elder inhabitants particularly remembered the difficult access to Parnaíba in the past. At a time when middlemen did not yet come to the islands, Passarinho's inhabitants had to undertake long and arduous journeys to sell gathered, cultivated, and fished products in the city. Seu Mateus, in his early seventies when I met him, for instance, recalled accompanying his father to the market from the age of 7 or 8 years to sell *murici* fruits:

> "At the time I got to know (*alcancei*) Parnaíba, it was already a city, but it was very different. One could count the cars on the fingers of one hand. Those old cars, you know. The journey took us an entire day. We would leave in the afternoon and arrive there in the afternoon of the next day."

Seu Mateus remembered that they used different ports than today, for neither the road from Tatus across the Ilha Grande, nor the bridge connecting this island to Parnaíba, existed at that time. They would walk to Canárias, hire canoes, row to a port on the Ilha Grande, walk across the island, and then still had to cross the Iguaraçu River to reach the city. Seu João Miguel, also in his seventies when I met him, recalled similar difficulties:

> "When I was young, I used to fish a lot. I salted the fish and went to Parnaíba to sell it. In Parnaíba, that bridge didn't exist. At that time, the bridge didn't exist yet. We had to push [the boat] with a wooden stick (*vara*) to get to the other side. Oh yes, I remember the day they built the bridge, it's more than forty years of bridge [since the bridge was constructed]."

Especially in winter, which was the rainy season, travel was arduous. Seu João Miguel remembered walking through mud and water to cross the Ilha Grande before the construction of paved roads:

> "When it rained, it was a lot of mud, mud up to the chest. We would fall with our clothes into the water, with the donkey through mud and water, helping to carry the cargo, and once we arrived in Fazendinha, we would change our clothes to go to Parnaíba. *Rapaz* (guy), it was very difficult, it was really difficult…when someone got sick, we would carry him in the hammock, a hammock tied on to sticks, to carry to

Parnaíba."

These difficulties with regard to access and transport led Seu João Miguel to describe that time as the "time of slavery" compared to the current days that were "like heaven." "Today everything is easier," he explained. "You are here at 7-8 am and when it's 9-10 am you are already in Parnaíba. You don't have to salt the fish. You catch a *camurim* fish, put it directly on ice, and off it goes to Brasília." For Seu João Miguel, easier and faster transport also brought about better visibility compared to the past: "Today you don't live hidden, everywhere you are seen."

However, if Passarinhenses generally agreed on the improved access to Parnaíba, many continued feeling forgotten or deliberately deceived by public policies, the government in general, and the local politicians in particular. When travelling to or otherwise relating to Parnaíba's urban areas and their inhabitants, they still frequently experienced marginalization and stigmatization.

One afternoon, when waiting for the quad driver to take us from Canárias back to Passarinho, for instance, Seu Juzé told me: "You know, people from the city easily recognize us as islanders." We had been to Parnaíba for the weekly shopping of basic supplies and Seu Juzé had also resolved some issues with his bank. Often Dona Alice, Seu Juzé's wife, undertook these trips alone, but on this day Seu Juzé and the two granddaughters who lived with them had accompanied her. For such trips to the city, they commonly dressed up in their nicest clothes. Despite the heat, Seu Juzé had traded his shorts for jeans and his flip-flops for meticulously cleaned tennis shoes. Dona Alice had put on lipstick, perfume, and a necklace. She had put more cream than usual in her granddaughter's hair, to comb and bind it tightly at the back. "Do you know how? Do you know how they recognize "us from the forest" (*nós do mato*) when we go to the city?", Seu Juzé now asked me. I said that I did not, and he explained that it was not the clothes, nor the skin color or other physical features, but the way of walking. He laughed and said: "Even when we are in the city, we continue to walk in lines, one behind the other, the same way as we walk on the trails through the island, through the forest." As was so often the case in conversations with Seu Juzé, we straddled a fine line between joking and seriousness. Nevertheless, his words reflected feelings and experiences shared by a number of other delta inhabitants.

From a geographic point of view, it is in fact not clear whether to include or exclude Parnaíba from the delta. Parnaíba extends along the Iguaraçu river, an eastward-flowing distributary of

the Parnaíba's main course. The city, especially the urban elite, however, clearly distances itself from the deltaic area, which from their point of view only comprises the islands. In recent years, additionally, tourism companies have started promoting Parnaíba as *the* entry door to the delta. They thus situate the city at the *edge* of the deltaic area; as a place where visitors can stay in hotels, and *from* which they can undertake different types of guided excursions *into* the deltaic landscape.

Parnaíba has a long history of trade. Already in the mid-16th century, the Parnaíba Delta's commercial opportunities attracted European explorers. French and English pirates roamed the area in search of valuable goods (Napoleão do Rego 2010). A series of economic boom-and-bust cycles followed between the 18th and 20th centuries: first of cattle, then of dried meat and leather, and later of several plant-derived products (cotton, ceará rubber, carnauba wax, etc.), of which some became highly valuable export commodities (see chapter 2).

The prospering trade also attracted more and more foreign traders; besides the Portuguese, English and French traders established their own trading houses that, in addition to their export activities, also started to import European products (Napoleão do Rego 2010). Parnaíba thus established itself as a city of progress. Benefiting from the trade, a social elite emerged that set itself more and more apart from the workers and poor of the urban periphery and the inhabitants of the deltaic islands (Oliveira 2017).

As Oliveira (2017) points out, despite their important function as "*celeiros,*" – that is, as the breadbaskets, supplying Parnaíba with agricultural products, fruits, and fish – the urban elite considered the islands overall as spaces of emptiness, social backwardness, and poverty. In the 1970s, a time marked by the developmental euphoria of the so-called "Brazilian miracle" (Oliveira, 2019), two important changes took place. First, the Símplicio Dias bridge, connecting Parnaíba to the Ilha Grande, was constructed with the aim of integrating and improving the conditions of the islands. Oliveira (2017) describes how the newspapers of the time portrayed the bridge as "progress," symbolizing Parnaíba's alignment with the military dictatorship's discourses of development. Secondly, around the same time, tourism also began to be developed.[54] Considered as an economic activity of the future, tourism should, after the decline of *carnaúba* wax exports, restore economic growth to Parnaíba. Consequently, the deltaic area's natural features began to be valorised, and – in contrast to the images of poverty and misery – the islands were also increasingly thought of in terms of natural beauty, beaches,

[54] By the end of the 1970s, Parnaíba was named the "Third National Tourist Centre" of the country (Oliviera 2017).

sand dunes, and sun. However, as Oliveira (2017) points out, even if the access, and to some extent working and living conditions on some islands improved, especially the Parnaíban urban elite maintained and steadily reinforced a clear separation between themselves – the urban civilized – and the poor rural islanders. This contrast, together with the valorization of the island's natural features, proved to be beneficial for national tourism, as tourists were promised to visit rather "exotic" realities.

Such observations echo delta inhabitants' experiences that I outlined above. Thus, the inhabitants of Barrinha and Passarinho not only experienced stigmatization when migrating to southern cities, because of their *Nordestino* origin and the region's considerable differences in wealth, but were also exposed to similar marginalization when visiting, living, or working in the urban centers of the region's mainland. Poor education, the impossibility of acquiring regular employment (e.g., through access to worker IDs), uncertain or oscillating access to governmental programs/benefits, and a general absence of the state further consolidated people's feelings of being forgotten, at the margins of society.[55]

Additionally, many delta inhabitants felt cheated by the government in general, and by local politicians in particular, which was a feeling that stemmed mainly from the many unfulfilled promises and unfinished projects.[56] Dona Terezinha, in her 70s among the oldest inhabitants of Passarinho, for instance, had countless experiences of never-finished projects. "My world here is full of pipes," she remarked during a conversation we had in her home garden, pointing to the useless white PVC pipes exposed here and there in the sandy soil. Together with the white cement structures that were standing like several-meters-high skeletons in the village, the PVC pipes bore witness to the unfulfilled promises that are all too familiar to the inhabitants of the Parnaíba Delta. The water tanks, from which pumped-up groundwater should have been distributed to the households, had never been placed on the cement structures and consequently the network of plastic pipes buried in some residents' gardens never took up their function either. Dona Terezinha explained that the money dedicated to the project passed through too many hands before arriving in the village. Some inhabitants, she said, sold their PVC pipes, but she decided to leave them in the ground, not willing to give up

[55] In contrast to people who sometimes deliberately avoid documents such as worker IDs or even birth certificates to keep the state – and taxation, conscription, etc. – at a distance (DeVore 2014), delta inhabitants do not reject such documents, but rather see them as representing yet another potential possibility (e.g., to get access to benefits, projects, bolsa familia or a fixed salary). This, however, does not mean that they completely subject themselves to those documents' logics or constraints; often they try to avoid the commitments these documents or benefits bring along (see chapter 4 and chapter 7).

[56] Unfinished projects and broken promises are common in other parts of Northeast Brazil. See for example DeVore (2019).

hope that one day they might serve a purpose after all.

Delta inhabitants' frequent self-identification as "poor" thus reflects these experiences of marginalization, which they had and continue to have when travelling to the mainland and relating to outsiders. On these same journeys, however, people often also observe the value of many of the deltaic products. Many people, for instance, repeatedly emphasized, with a mixture of amusement, astonishment, and pride, the high prices for shrimps, crabs, oysters, and cashew nuts that they observed in the urban areas they visited. The prices of these products – highly valued especially by tourists – could indeed easily reach four or more times the value that delta inhabitants received for selling the same products.[57] This often leads to conflicting feelings of exploitation, an appreciation of the islands' richness and a sense of being privileged to live in such an abundance of fresh and valuable products that could be acquired with relatively little effort.

Self-identification as "poor" by the delta inhabitants, as well as narratives about experiences of marginalization and of "being forgotten by the state," should not be misread as indicating passive endurance, nor as reflecting their overall desire to be included by the state. As I will further elaborate in chapter 7, delta inhabitants also speak of the islands as a place where a "peaceful life" is possible, in contrast to life on the mainland, which is often full of schedules and obligations. A "peaceful life" relates to the possibilities the islands offer both in terms of abundance and also in terms of avoidance of commitments, and the power to decide on one's own time and way of life. Taking advantage of the difficult access and the shifting materialities has become a fruitful strategy for delta inhabitants to keep control over their space (e.g., keep unwanted visitors at distance) and maintain a "peaceful life."

Becoming "*carambola*"

In addition to her feeling of "being poor" in an abundant environment, Dona Júlia had come to know another ambiguity in recent years. Both Dona Júlia and her husband Seu Sebastião were born in Itaperinha, a rural village on the *Maranhense* mainland. They had arrived in Barrinha seventeen years previously and immediately liked the island way of life, so that they

[57] For example, a crab gatherer sells 4 crabs (one cord) for 2R$ to middlemen in the delta; in Fortaleza's beach restaurants the same amount is sold for 12 R$. In Barrinha a shrimp fisher gets around 10-15 R$ for a kilo of shrimps, while in the markets in São Luís the price is 40 R$. Cashew nuts are sold for 2-3 R$ per kilo (with shell) to middlemen in the delta; after being roasted they cost 45-55 R$ per kilo in the markets in Parnaíba, Fortaleza or São Luís.

decided to construct a secondary home there – a simple mud house (*taipa)* covered with carnauba palm leaves. However, they regularly returned to their home village on the mainland, where their children and many of their relatives continued living. Especially during June and July, when manioc was harvested and processed into the widely consumed and appreciated *farinha* (manioc flour) – the mainland villagers' main source of income – the couple often stayed for longer periods in the village on the mainland. Recently, however, their relatives had begun reaffirming their Afro-Brazilian descent, and initiated a legal process for recognition as "quilombola community," which succeeded in 2017 and granted them land rights and access to social benefits. In spite of her close relationship to Itaperinha, Dona Júlia struggled to identify as *quilombola*; neither did she like the "noisy drums" played in the increasingly performed Umbanda festivities. Already shortly after his arrival in Barrinha, Seu Sebastião had received a nickname making allusion to his dark skin. Since the official recognition of their home village as a quilombola community, some people in Barrinha also started to refer to the couple as "*carambola*" – their own adaptation of the unfamiliar "quilombola" term. Dona Júlia not only felt unfamiliar with this new identity, but also experienced a stronger emphasis on her black skin and African traits that at times made her feel uncomfortable.

The use of multiple shifting identifications, differently employed according to contexts, is not uncommon in Brazil. Boyer (2015), for instance, points out that the use of a variety of distinct terms shows how today's rural Brazilian population receives, understands, and reinterprets the various categories of identity that are now legally recognized. The binary conception of "white" as opposed to "Indian," dominant during the period of conquest, she argues, gradually gave way to a multi-categorical conception of identity, which allows the naming of the social formations resulting from colonization and the slave trade. During the last two decades of the 20th century, certain identity categories including "Indigenous," "quilombola" and "traditional" have been institutionalized. Following the official recognition, these groups received territorial rights and specific health and educational programs, and consequently, in the years since the official recognition, identity (re)affirmations have multiplied (Boyer 2015). It has therefore become a common situation that within a family, some members assert a quilombola identity, others an Indigenous one, and still others don't explicitly emphasize any ethnic identity at all.

Dona Júlia's example is illustrative of the conflicts and ambiguities of identities. Shifting identities are indeed also expressive of "competing political projects, census paradigms, and

pedagogical norms that have emerged in Brazil during recent decades," shaped and contested through wider transnational fields of power (DeVore 2021, 507). Some of these projects attempt precisely to purify and eliminate shifting identities. Turning away from becoming, they focus on fixed, essentialist and racialized categories of being (Collins 2007; Baran 2007; DeVore 2021), which often implies forgetting the very history through which categories emerged (DeVore 2021). [58]

As in the case of Dona Júlia, the affirmation of some family members can have effects on other family members and categorize them unwillingly into particular identities. Moreover, the example also highlights the shifts in perceptions following certain identity emergences. Let me illustrate this with a second short example.

One afternoon, after I came back from a visit to Dona Juliana, Seu Juzé commented: "You know, she's really a *carambola*, she has this *carambola* hair and black skin, and she likes playing the drums and sometimes her people come, and then it's *macumba* the whole night, drum sounds the whole night."

Indeed, Dona Juliana told me that she had brought practices and beliefs from the Umbanda religion with her from the villages on the Maranhense mainland where she had lived before moving to Passarinho. However, she also affirmed being Catholic, the dominant religion in Passarinho, and participated in Catholic events and celebrations. Yet, after nightfall, she habitually withdrew in the small "Umbanda house" in her backyard, her "refuge" (*refúgio*), as she called it, to sing, dance, and play the drums. When gathering shellfish in mangroves or fruits in the forests, she occasionally encountered *caboclos* and other entities from the Umbanda spiritual world. Some fellow villagers, Dona Juliana told me, did not appreciate her practice of Umbanda, fearing her involvement in black magic, even if she insisted on working uniquely with the "white line" (*linha branca*), as the good line was called.

First, Seu Juzé's comment somehow puzzled me. Unlike him, I could hardly see how Dona Juliana's brown skin and curly hair would distinguish her from the mixed Indigenous, African, and European descent of other Passarinhenses. If one wanted to meticulously compare the curliness of their hair, I would have probably said that Seu Juzé's hair could be classified as

[58] DeVore (2021), by analyzing practices of eating by hand in Brazil, looks at how the category of whiteness was, over the course of a long social history, actively invented, instituted and made distinctive. He argues that modernist stories about race not only have in common similar claims about origin and ancestry but also the forgetting, erasure and suppression of other histories that would trouble origin stories. Baran (2007) looks at how in a Brazilian municipal high school a newly introduced essentialized racial ideology – defining everyone not purely *branco* (white) as *negro* (Black) – conflicts with popular beliefs in a mixed race *moreno* (brown) identity.

even curlier, and hence more *carambola*, according to his criteria for categorization. Dona Juliana also did not particularly insist on "being quilombola." Obviously, through her affinity and practice of Umbanda,[59] which played an important role in some of the quilombola re-affirmation processes, she became *carambola* for fellow villagers, and this also shifted their perception of Dona Juliana's physical appearance – her skin color became apparently darker and her hair curlier.

This echoes observations that race in Brazil, and skin color as its proxy, is not something stable and fixed (Harris 1970; Sansone 2003), but rather "can be a language and a becoming" (Schwarcz 2017, 187). Indeed, research on race has often compared Brazil and other Latin American countries with the United States. These regions, despite sharing a history of European colonization, enslavement, and intense miscegenation between white, Black and Indigenous people – sometimes also enacted through state laws and policies – have adopted and instituted very different racial ideologies. In the United States, fear of race-mixing prevailed, leading to a relatively rigid and binary system of racial categorization. Brazil, in by contrast, embraced miscegenation (*miscigenação*, also referred to as *mestizagem*) as a central pillar of nation-building, not only encouraging but also glorifying racial mixing (Telles and Sue 2009). Especially the state ideology of the Estado Novo – Getúlio Vargas' dictatorship (1937–1945) – promoted the idea of a "racial democracy", a country free of racism, where people lived together in harmony (Schwarcz 2017).

However, these ideas, suggesting that intense racial mixing resulted in weaker racism, were challenged later. An example of earlier studies comparing Brazil's multifarious to the United States' dichotomous race definition is Degler's (1971, 178) argument describing the intermediate space (between black and white) ceded to mixed-race individuals as a "mulatto escape hatch." Degler suggested by this an advantage for mixed-race individuals in Brazil to "escape the disabilities of blackness," for instance, to access upward socioeconomic mobility through "whitening." Research hence not only showed that race mixing coexisted with racial hierarchy and ideologies of whitening, but that racism could even thrive in such a context (Telles and Sue 2009).

The perceptions of skin colors in Brazil, then, are highly ambiguous and always circumstantial (Harris 1970; Sansone 2003; Roth-Gordon 2017; Schwarcz 2017). If the

[59] Some of my interlocutors used the negatively connoted term "*macumba*," which they also frequently associated with black magic. Dona Juliana used the term Umbanda. Note, however, that some activists view Umbanda as less "purely" or "authentically" African than Candomblé, and propose eliminating those elements of Umbanda that are less African (see also Sansone 2003).

official census has five colors: white, black, yellow, red (for Indigenous) and *pardo* (mixed or brown), then the reality, as Schwarcz points out, is much more complex. For her discussion Schwarcz takes up the results of the PNAD, a national survey that asked people to describe their skin color, where respondents came up with 136 different terms. Schwarcz indeed notes in this list a prevalence of terms describing partial or changing rather than final and stable situations – describing for instance colors with "heading towards," "quite," "almost," "somewhat" or "half" (2017, 188). Color is thus something temporary or situational – it depends on circumstances, especially one's social situation, which means that where one lives or to whom one is married, for example, may have an influence on one's perceived color (Schwarcz 2017). [60] Despite this diversity and emphasis on process, beliefs in whiteness as a sign of superiority remain, and therefore becoming white remains aspirational (Dávila 2003; DeVore 2021; Roth-Gordon 2017).

Dona Júlia's statement, the nickname Seu Sebastião received, and the comments on Dona Juliana indeed illustrate this ambiguity and complexity that goes along with mixture.[61] At first sight, the above examples may appear to stand in contrast with the common malleability and elusiveness of identities among delta inhabitants, their emphasis on mixture and permeability, rather than bounded and static categories, and people's openness and willingness to embrace change (Harris 2009).

However, mixture and openness should not be confounded with harmony, nor with an equal welcoming of everyone and everything. Comments on appearing "*carambola*" or certain nicknames that were often slightly negatively connoted, reflecting the very deeply rooted racist structures governing Brazilian society, establishing that power and privilege go along with one's skin color. Indeed, being white-skinned myself, with green-brown eyes, I repeatedly experienced the value attributed to white skin. The prevailing idea of beauty, I realized, was commonly associated with white skin, blue or green eyes, and "delicate" features. Incessantly disseminated through mass media, these beauty standards also influenced some villagers' values. In this sense, neither being "*carambola*" nor being Indigenous was anything to aspire to.

[60] It is important to note, as Sansone (2003) highlights, that self-perception and perception by others does often not coincide.

[61] Of course, mixture does not always bring about ambiguity and complexity. It depends on the ideological-institutional situation. For example, in the U.S., in contrast to Brazil, the "one-drop rule" attempted to eliminate ambiguity: mixed-race persons were unambiguously "black" according to the law and treated as such interactionally.

Elusive, shifting and malleable identities therefore do not mean that delta inhabitants can change between identities without restrictions and impositions or escape certain identities. Delta inhabitants frequently experience marginalization, in particular when relating to more powerful outside actors, as I have outlined before. Seu Juzé's example illustrates that when travelling to mainland cities, delta inhabitants could often not avoid being directly identified as island inhabitants. In such relations with outsiders, delta inhabitants were often deliberately cheated. At times the complexity and ambiguity of their mixed origins and their flexible – and often interstitial – lifeways also accentuated their feelings of marginalization and invisibility, and at other times people were forced into unwanted categories, including by one another.

"*Ribeirinhos acomodados*" – "Lazy ribeirinhos"

"You know, *ribeirinhos* are like that, they are often very *acomodados* [accommodated, lazy, but also satisfied]", Seu Zé told me, shaking his head. It was in the early afternoon; we had eaten lunch under the big cashew tree in the garden behind his home, and were now chatting a bit while swinging in the hammocks that were attached to the tree's lower branches. Seu Zé was obviously annoyed about some of "his" shrimp fishers, who had not gone fishing the night before, although shrimps were abundant and prices good. "The first nights, they go without any problem, but then when they have to leave later, when they are tired from the previous days, when it gets more difficult, some just quit," he explained. "They are too *acomodados*!" For my part, I had to repress any comment about laziness, since I knew that after our conversation had come to an end, Seu Zé would very probably take an extended nap in his hammock himself. It was not the first time, however, that I had heard people talking about or describing fellow villagers as lazy. Elderly people regularly complained about younger people being lazy, for instance, because they no longer wanted to cultivate swidden fields.

This practice of "naming the other," as well as the negative connotation attendant to the term *ribeirinho*, resonates with other works, especially concerning Amazonian peasant societies of mixed descent – sometimes also referred to as *caboclos*. Rather than a self-description, the term "*caboclo*," as Lima-Ayres (1999) argues, is often an exonymic category of representation, usually designating alterity and otherness. In the Brazilian Amazon, the *caboclo* is indeed a category of complex social classification, including geographic, racial, and class dimensions. For instance, inhabitants of Amazonian cities often use the term to

speak of rural inhabitants. Constructed in opposition to the urban, white, and civilized, the term *caboclo* carries an overall pejorative connotation, identifying someone's inferior social position in relation to the speaker. It is thus a relational category that does not refer to a fixed social group, but rather can be used to designate anyone who, relative to oneself, is poorer, more rural, more Indigenous, more backward, or more illiterate (Lima-Ayres 1999). Therefore, no clear *caboclo* identity exists; *caboclo* is rather the construction of a person through other references[62] (Lima-Ayres 199).

Since *caboclo* is not a term of self-designation, and because of its negative connotations, some anthropologists such as Harris (e.g. 2009) and Machado (e.g. 2012) use the term *ribeirinho* (river dweller) instead, partly because it is less connotatively dense, but also because, in addition to highlighting the geographic situation of settlements alongside bodies of water, the term especially emphasizes the important role that rivers and other watery environments play in these people's everyday lives.

In the region of the Parnaíba Delta, it is common for outsiders, especially residents of Parnaíba and other regional urban centers, to refer to delta inhabitants as *ribeirinhos.* Given the experiences of marginalization and stigmatization that delta inhabitants commonly have with these outside actors that are often more powerful, this may explain Seu Zé's and other delta inhabitants' devaluation of the term *ribeirinho,* for example, using it to highlight negative habits of fellow villagers.

Ribeirinhos are a very heterogeneous group, and it can thus be problematic to use the term without specification. In spite of their differences, however, they also share some commonalities that are also relevant for the inhabitants of the Parnaíba Delta. One of these common characteristics, beyond the above-mentioned mixed descent, the location of villages along bodies of water, and people's everyday relations with rivers, is their relative socio-political invisibility (Adams et al. 2009). [63]

[62] For example, related to poor social conditions, to economic activities such as artisanal fishing, small-scale agriculture and gathering (e.g., of nuts), to life in riverine environments (floodplains, *terra firme*, riverbanks), to an organization in small communities related by kinship, to religion and beliefs linked to popular Catholicism and the world of enchanted beings.

[63] This does not mean that invisibility is always passive and imposed. People might also actively keep the state at distance, as pointed out above. Nugent 1993, Adams et al. 2009 and other works on Amazonia draw attention to the "invisibility" of *caboclos*/*ribeirinhos* mainly related to their mixed descent – being neither one nor the other – and, in particular in Amazonia, a consideration of the natural as primary and the social as secondary and invasive.

As racially mixed descendants, *caboclos* and *ribeirinhos* were indeed commonly seen as "artifacts" of historical Western interventions such as European colonialism and the destruction of Indigenous societies (Harris 1998b). Compared to the latter, they were considered as "culturally poor" and "without history" and thus received little attention for a long period of time, including from anthropologists (Harris 1998b, Adams et al. 2009). Such populations were also portrayed as "falsified other," both because they derived from European conquest, and because their very existence bore the spoiling effects of "civilization" (Nugent 1993, as cited in Adams et al. 2009: 2).

Especially in the Amazonian context, as Harris (1998b) observes, *ribeirinho* culture has mostly been analyzed through the perspective of cultural ecology, which viewed their cultural practices as adaptations to an unstable and harsh natural environment (e.g., Moran 1974). Allied to the vision of the Amazon as a natural domain par excellence, into which the social domain is invasive (Nugent, 1993), this perspective saw *ribeirinho* societies as contained in "wilderness" and limited by natural rather than historical factors (Harris 1998b, Nugent 1993). Cultural ecological analysis considered their culture as defined by adaptation to natural constraints, and contributed to ribeirinhos invisibility, portraying them as passive in relation to their social and cultural development, dominated by an inhospitable environment and subjected to external commercial oscillations (Nugent 1993).

Recently, these assumptions have been challenged. Raffles (2002a), for instance, shows how Amazonian rivers and streams have been systematically managed and manipulated by humans for a long time. Emphasizing the historicity of environmental management, Raffles (2002a) not only sheds light on people's activities, previously largely invisible, but also questions common assumptions of the Amazon as an exemplar of pristine "nature." Along similar lines, Harris (2009) points out that *ribeirinhos*' historical agency remained undocumented and thus largely underestimated because of the invisibility of their informal economy, which did not appear in official historical accounts that rather focused on boom-bust economies (e.g., rubber, jute).

Harris (2009) suggests that their flexibility – the skill of being "*sempre ajeitando*" (always adjusting) – is far more than a passive accommodation to external demands (2009, 77). The *ribeirinhos*' modernity, he argues, lies precisely in their ability to constantly renovate the past in the present, which allows them not only to accommodate to unstable historic developments, fluctuating markets, and a dynamic environment, but also to reorganize and reproduce each time without wiping out their way of life. Building on Lima and Alencar's (2001) work,

Harris further suggest that in their lives, *ribeirinhos* tend to stress attention to an ever-changing present, what he calls "mastery of the present" (2009, 76), rather than the past.

In their work on Amazonian floodplain dwellers, Lima and Alencar highlight the continuous beginning anew, the restarting of life each year when floods recede and new lands emerge, showing that "to be a *vargeiro* [floodplain dweller] means to live in the present" (2001, 44). As the floodplain changes and reforms each year, Lima and Alencar (2001) further observe, people's memories are continuously disconnected from fixed references, and because of intensive migration, they do not share the same pasts. Therefore, the floodplain dwellers' most important temporal reference is the present. Group identities consolidated around collective memory or origin myths are mostly absent; the past is discontinuous. In similar ways, that people start anew each year; after each flood, people's stories also start anew, and thus take on a cyclic rather than a linear chronological form.

A willingness to embrace change (Harris 2009) and flexibility to adjust, and jump onto newly emerging possibilities, is also crucial for the inhabitants of the Parnaíba Delta. They are skilled in reorienting when possibilities dissolve, as well as improvising and creating new opportunities – sometimes in the interstices of restriction or domination – either because of "nature's making and unmaking," or because of seasonal transformations, boom-bust economies, or their exclusion from these, as well as to exploitative or disappearing traders (see Chapter 2, or Chapters 1 and 4 for nature's transformations). Moreover, and probably not so surprising in light of their flexible lifeways, delta inhabitants also have histories of intensive migration.

Indeed, migration did not stop once the initial wave of Cearense and Maranhense migrants set up more permanent settlements on the islands in the late 19th century. New people kept coming, either to join their relatives, or in search of new opportunities and better living conditions, or simply out of curiosity, while the already settled inhabitants moved on for similar reasons to other villages, back to their home villages, or to the towns on the mainland.

Seu Cicero, currently among the oldest inhabitants of Passarinho, remembered:

"*Rapaz* [guy], I was born in Curva, from there I went to Coqueiro, from Coqueiro I

went to Quebra Pote[64], I spent two more years there in the surroundings. Then I spent another two or three years in [the city of] Parnaíba. From there I came here to Passarinho. From Passarinho I went to Coqueiro again. Then I left Coqueiro and came back here to cut rice with my father."

In Passarinho, the flourishing rice cultivation attracted a large number of people from places along the mainland, and when the cultivation ceased, many moved, either further on in search of new opportunities or back to their home villages (see chapter 2). In Barrinha, trajectories of intensive migration are not only a crucial part of most inhabitants' biographies but also, as Seu Gabriel's example above shows, very much part of present everyday island life.

If many of today's delta inhabitants link their own history to a Maranhense, a Cearense, or a mix of both regional origins, underlining a rupture rather than continuity with the Indigenous Tremembés – the first inhabitants of the deltaic islands – their narratives, however, often express a certain vagueness and uncertainty about their origin:

"My father, his family, they say he comes from Ceará. But the older people have already died, so I cannot tell you about my origin." (Dona Terezinha, in her 70s, Passarinho).

"My grandmother told me that when she got here, there were already inhabitants living here in this community. Now, I don't know, she also didn't tell me who these people were, right? I can tell you what my grandmother told me, right? According to the comments, as far as I know, some of these residents had come from Ceará and some from Maranhão. My grandmother came from a place near Barreirinhas, over there [pointing towards the west], next to the Lençois Maranhense." (Seu Mateus, in his 70s, Passarinho).

Generally, if people remember having moved to a variety of places before coming or returning to the islands, the sequences and especially the dates of these past events were often vague to them and hazy, somewhat blurred through their intensive moving around. This became especially explicit in a conversation with Dona Helena one morning, when I joined her in the muddy waters in front of Barrinha to catch shrimps by hand. After she had briefly explained to me how to comb the mud with my hands to find the buried shrimps, we started a conversation during which I inquired about her origins. "I don't know where I was born," Dona Helena simply said, lifting her head so that she could see me under the rim of her large

[64] All villages on the Maranhense mainland.

straw hat. As I looked at her a little puzzled, she continued searching for shrimps in the mud and recalled part of her past trajectory. Dona Helena had moved to Barrinha as a young girl, probably around the age of seven. Since then, however, she had lived in a variety of places. She especially remembered Paragominas in the State of Pará, a town in the Amazon Forest, notorious for its widespread illegal logging activities and for being a violent place; and Góias, in the Centre-West of Brazil, where some of her children still lived today. A few weeks after our conversation, Dona Helena decided to leave with her youngest, 12-year-old, son to join her daughter in Goiás. However, as the date of departure approached, she postponed the move. Maybe she will be leaving next month or the month after, she said, leaving the outcome open.

Dona Helena's forgetting about her place of birth, and the often vague, uncertain and blurred accounts of personal histories more generally, resonate with observations by Harris (e.g., 2005; 2009) and Lima and Alencar (2001) on the mastering of the present and the circularity of narratives. The exclusively oral transmission, as well as people's continual moving around, certainly partly explain the blurring of some inhabitants' past histories. Like the *vargeiros* in Lima and Alencar's work, few Passarinhenses and especially Barrinhenses share the same pasts. Moreover, remembering, dating, and ordering past events on a linear timeline is not of given great importance.

Moreover, on the deltaic islands, past traces are usually not long-lasting – they are either buried, washed away or otherwise erased through nature's continuous making and unmaking. Indeed, rather than memorious, the deltaic islands are a "forgetful landscape" (Harrison 2004).[65]

Through the interplay of the manifold movements going on in the deltaic world – people's back and forth movements, nature's making and unmaking, seasonal transformation, migrating fish and shrimp, economic volatilities – and people's attentiveness to these cycles, the present indeed becomes thick and "pregnant" with multiple constantly emerging futures. The past is constantly being wiped out or dissolved, the future – through non-linear and often abruptly changing becomings – remains largely open and difficult to predict. This is not to be confounded with *ribeirinhos* and delta inhabitants being "people without history" (Wolf 1982). Rather, as Harris (2009), based on Wolf (1982) argues, the perception of history – such

[65] I will further explore the relations of memories and landscapes in Chapter 6, focusing especially on practices of planting and caring for plants as a way of leaving traces in an ever-changing environment and perpetuating stories to future generations

as the cultural ecology view – seeing *ribeirinho* society and culture as formed in a linear sequence reaching a climax before demising, is too neat. He calls for a resituating of ribeirinho histories across and in relation to these fluctuations: "history, from the *ribeirinhos* point of view, has been a series of upheavals, each of which have left their imprint, often changing radically the social context." (Harris 2009, 75). The value that delta inhabitants, similarly to *ribeirinhos*, put on "successfully negotiating the contitions of the present" (Harris 2009, 89; see also Lima & Alencar 2001) neither means that future and past narratives and trajectories are completely absent, nor not valued at all. Yet, the group's collective past is often negligible. As I will further elaborate in Chapter 6, in the constantly changing environment remembering the past and maintaining traces of the past requires an effort and specific strategies; pasts are often remembered and transmitted through personal or family (hi)stories (Lima & Alencar 2001). Delta inhabitants' temporal orientations, then, are more complex than linear, chronological patterns. A rather fuzzy, muddled moving back and forth between places, a seemingly uncertain and vague leaving and coming back for a time, leaving again and perhaps coming back again or not characterize people's pasts and likewise orient plans for the future – a non-linearity that bears some similarities with nature's movements of "making and unmaking."

Furthermore, rather than distant and bounded, past and future may at times permeate or seep into the present, which results in a peculiar co-presence of past, present, and future. The narrative of the sand dunes that buried mangroves and rivers and thereby made the islands inhabitable, which I mentioned in Chapter 1, involves co-presence in this way; even if it refers to past events, they continue to have effects in the present. People who told me the story commonly pointed to the dunes, and showed me their direction of movement, emphasizing that this process continues to take place. Other examples are narratives about enchanted beings (*encantados*) and enchanted, mysterious places (*encantes),* such as the one Seu Severino told me about one morning when I encountered him at Barrinha's beach.

That morning, I was walking down the sandy slope towards Barrinha's beach, when Seu Severino waved me over. It was a bright morning; there was no fog and not a single cloud in the blue sky. Barrinha emitted an air of tranquillity: the fishermen of the last tide had left a few days before, and those of the next tide had not yet arrived. Even the water in the bay was particularly calm. Like a giant mirror, it stretched out in front of us, reflecting the sun's rays. "Now you can see it," Seu Severino said without even greeting me, delightedly pointing far across the bay towards the neighbouring Cajú Island. I could hardly discern the island's shore,

when he already started explaining: "You see, over there? That's the 'dune of the Indians [*o morro dos indios*]. Sometimes you can see it from here, sometimes not. It appears and disappears, it builds and unbuilds. It is an enchanted place (*encante*), you know, sometimes a fire appears there." Seu Severino, the oldest inhabitant of the island in his 80s, added that when he came as a young man to Barrinha from Cajueiro da Praia, a fishing village on the Piauían coast the "Indians" were already long gone. However, the elderly inhabitants had passed on the story to him and had shown him the piles of shells – remnants of the shellfish the *indios* had eaten – that could be found in the surroundings of the dune.

Also the stories about the "mother of water" (*mãe d'água*) and about the mermaid (*sereia*), that fishermen especially enjoyed telling, were not related to a distant past. Similar to Lima and Alencar's (2001) observation regarding stories of the *cobra grande* (big snake), the *boto* (Amazon River dolphin) and other *encantados*, these stories usually involved people, either living nearby or known by everyone, who had directly experienced and witnessed their encounter or the actions of the enchanted beings. Barrinhenses, for instance, told a story of a girl living nearby on the mainland who could not approach the water because her father, while going through hard times, had promised her to the "mother of water." If the girl was to approach the water now, the "mother of water" would very likely take the girl to her realm at the bottom of the river, the story says. Thus, the stories are not set in a distant, bounded past, but rather emphasize the continuous actions and interferences of these beings in the present.

Becoming "extractivists" or "traditional" populations

On the deltaic islands, as described in the previous chapter, conflicts over land are a common issue. Similar to the alleged land owner who suddenly appeared in Passarinho when rice cultivation started flourishing (see chapter 2), some ten years ago, another purposed land owner – who had, however, never paid the land tax[66] – also appeared in Barrinha and threatened to expel the villagers. When the conflicts intensified – a house was burnt down, for instance – villagers, under the leadership of Seu Zé, filed a suit against the alleged owner, and established a residents' association, the APAMEX[67] (Association of Artisanal Fishermen and Shellfish Extractivists[68]). As described in the "becoming carambola" example, under current

[66] Not paying the land tax (Imposto sobre Propriedade Territorial Rural or ITR) can jeopardize a potential landowner's claim
[67] Associação de Pescadores Artesanais e Marisqueiras Extrativistas.
[68] "Extractivist" (*extrativista*) is commonly used in Brazil (related to the "extractive reserves" mentioned before)

Brazilian legislation, the distribution of land rights is based on identity criteria. Therefore, officially affirming an identity linked to traditional activities (fishing, extractivism) became necessary for Barrinhenses to gain more visibility in the territorial conflicts, enabling them to legalize and guarantee their right to remain on and use the land as a "traditional population" within the protective area (APA).[69]

Inhabitants of both Barrinha and Passarinho have thus become recognized as "traditional populations" in recent years, albeit through different processes. Whereas in Barrinha, the formation of the residents' association and the identity linked to traditional activities emerged from the inhabitants' initiative, the people of Passarinho experienced the establishment of the "marine extractive reserve" (RESEX marinha), with the twofold aim of protecting the natural environment and simultaneously guaranteeing long-term usufruct rights for the existing "traditional" groups, as a process largely decided and determined by external actors (see also chapter 2).

In a critical analysis of the term "traditional population or people," Barreto Filho (2009) points out that it has been plastered over historically specific and socially different groups. The term emerged in a very specific context, specifically in relation to the international discourses on "sustainable development" and the debate on human presence within protected areas (see Barreto Filho 2009; Pace 2004) and takes for granted a series of underlying assumptions.

From the 1980s onwards, with the emerging global discourse on sustainable development, *ribeirinhos* and other largely marginalized and invisible "traditional" groups were gradually assigned a new role in "defending nature," as they were supposed to be intuitively conservationist and leading sustainable lives. If previously these groups were seen as hindrances to economic development, or at best as "candidates for development" (Cunha and Almeida 2000, 315), they suddenly moved into a strikingly different light: "their lifestyles were re-interpreted as 'naturally conservationist' and their images recast as 'rainforest guardians'" (Pace 2004, 231). Different groups appropriated this new label for their movements against governmental projects and programs (e.g., the Belo Monte hydroelectric

---

and refers to populations living off traditional activities such as hunting, fishing and gathering of animals and plants, which are subsumed under the term "extraction." As the term is not very common in English and neither used in local everyday language, I instead use "fishing" and "gathering" in this text. The Brazilian use of "extractivist" is not to be confused with the English use of "extractivism" that designates unsustainable resource use including mining, hydrocarbon expoitation and industrial forestry.

[69] Since 1996, the entire deltaic area has the status of an Environmental Protection Area (APA), which however still lacked an official management plan during my fieldwork in 2017-2018.

dam) threatening their territories and ways of life (Cunha and Almeida 2000; Barreto Filho 2006). Rubber tappers, supported by these movements, for instance, demanded "extractive settlements," or areas for the exploitation of forest products where they could live and work without fearing expulsion and deforestation (Chartier and Nasuti 2009). The murder of the emblematic figure of Chico Mendes accelerated the process of institutionalization of this demand, and, in the beginning of the 1990s, the first so-called "extractive reserve" (*reserva extrativista*) or RESEX was created as one of the first models of "sustainable development". Officially recognizing the RESEX as an instrument of territorial policy, the Brazilian government extended its application from rubber tappers to all sorts of extractivists. Thus, Brazil-nut collectors, babassu coconut breakers, artisanal fishermen, and mollusc pickers among others (Chartier and Nasuti 2009; Barreto Filho 2009), now referred to as "traditional peoples," were granted long-term usufruct rights for collectively and sustainably managing natural resources (Pace 2004).

The definition of "traditional populations" remains vague and ambivalent. It often excludes Indigenous and quilombola communities that are regulated by their own legislations, but sometimes also incorporates them (e.g., Barreto Filho 2009). The sociologist Antônio Carlos Diegues, who probably contributed to and influenced the discussions and conception of "traditional populations" the most (for discussion, see Vianna 1996; Barreto Filho 2009), highlights various aspects that would characterize the "non-indigenous populations and traditional cultures," who according to him are "peasants and small scale fishermen" and "a product of intense racial (ethnic) mixing between the white colonizers, the Portuguese, the Indigenous population and the African slaves brought by the colonizers" (Diegues 1998, 8). Diegues highlights, for instance, their "relative isolation." On one hand, this led them to become small producers in interstitial, peripheral areas, often in the gaps between the dominant economic cycles (e.g., sugar cane, cotton, coffee, cattle ranching). On the other hand, it meant that they "developed distinct ways of life that depend to a great extent on natural cycles, a profound knowledge of biological cycles and natural resources, inherited technologies, symbolism, myths and a specific language, with accents and many words of African and Indigenous origin" (Diegues 1998, 8). Thus for Diegues, "the traditional cultures are associated with a pre-capitalist mode of production characteristic of societies in which labour has not yet been commodified, where there is a great dependency on natural resources and natural cycles, and in which dependency on the market may already exist, but is not total" (1998, 39). He further explains that "these societies develop particular forms of management of natural resources that are not aimed directly at profit, but at social and cultural

reproduction" and therefore, they would "*preserve* the natural resources on which they depend for survival" (1998, 40; my italics). Indeed, Diegues emphasizes that "(t)hese traditional systems of management are not only forms of economic exploitation of natural resources, but also reveal the existence of a complex knowledge, acquired by oral tradition from the elders, which consists of myths and symbols that *lead to the maintenance and sustainable use* of natural ecosystems" (1998, 42; my italics).

Many of these aspects described by Diegues are commonly taken up in discussions and conceptions of traditional populations, presupposing and perpetuating some underlying assumptions. For one thing, it is possible to observe that, unlike in international discourse where "traditional people" usually comes down to "ethnic populations," in Brazil this label is often related to the so-called "rustic societies/cultures"[70] (Vianna 1996, 107-109), which is based on a "narrative of miscegenation" at both the cultural and biological levels among people of Indigenous, European, and African origin (Barreto Filho 2009, 113). Moreover, the definitions of "traditional people" usually take for granted continuities with Indigenous societies, and, maybe most importantly, they strongly accentuate the "positive" effects that these groups would have on the environment (Vianna 1996, Cunha and Almeida 2000, Barreto Filho 2009), that is, that they would be intrinsically conservationist. As Lima (2001a in Barreto Filho 2009, 116) points out, they are often considered as "islands of socio-environmental harmony surrounded on all sides by a market-driven society." This is not only problematic because it idealizes and naturalizes these groups, but also because it expects them to remain "traditional," somehow frozen in time, in immutable contexts and situations (Vianna 1996; Barreto Filho 2009), countering in particular the autonomy of the group to decide on their own future (Lima 1997 in Barreto Filho 2009).

The expression "traditional people," as Cunha and Almeida point out, is thus a "product of the metropolis, generated by encounter" (2000, 316), and one whose members – and obvious candidates for membership – in addition to their "positive" effects on the environment, mainly share an interest in keeping or regaining control over the territory they live in and, hence, are above all willing to accept a compromise: "in return for control of the territory, they commit themselves to providing environmental services" (Cunha and Almeida 2000, 317).

[70] The "rustic-cultures" model is based on Darcy Ribeiro's thought. For Ribeiro, Brazilian diversity is eminently rural, and he typifies five historic-cultural regions, all variations of the same rustic Brazilian culture. The five types are: (1) the criolo, from the coast; (2) the caboclo, from the Amazon; (3) the sertanejo, from the northeast (dry grasslands); (4) the caipira, from the southeast and center of the country (backwoods) – or caiçara on the coast; and (5) the southern, both gaúchos (treeless plains), and italo and teuto-Brazilians.

Some of these problematic assumptions are reflected in the rather conflictual relationship that many Barrinhenses and Passarinhenses have with the administration of the protective reserves in their vicinity, the APA and RESEX, respectively. Many delta inhabitants not only feel overwhelmed by the numerous rules and regulations, but they also have a hard time comprehending their usefulness. They often have the impression that they are the easiest targets for enforcement, and hence suffer unequal sanctions when compared, for example, to big shrimp trawlers or rich fishing "entrepreneurs" (*empresários*). Moreover, they particularly feel that their decision-making power is compromised by the dictates of external actors (see also chapter 2 and 7).

For example, in a conversation about restrictions that came along with the establishment of the RESEX, Seu Juzé was clearly annoyed as he pointed to one of the cashew trees in his garden: "Look at this tree, I planted it some years ago. So, if I planted it, why can't I, if I need to, cut it again and replant a cashew tree elsewhere? I cannot understand that." His words quite accurately expressed the feeling of being deprived of decision-making power. The prohibition against cutting cashew trees was indeed based on a very specific perception of "nature" and the natural environment: an environment that is not only considered as neatly separated from surrounding people, but is also perceived as fixed and in need of preservation in a stable state.

Seu Juzé did not share this view. As we know from the previous two chapters, for him and many other delta inhabitants, *natureza* (nature) is anything but fixed – it continuously transforms. And in this transformation, both nonhumans (e.g., sand dunes, the sea, mangroves, crabs, etc.) as well as humans actively take part. Parts of the forest that may appear as "natural" are in fact former home gardens that people maintain; people not only plant many trees, especially cashew trees, but they also take care of them to help them flourish (see also Chapter 6). Moreover, rather than commanding and controlling *natureza*, people try to go with its flow, moving with and within this continuously transforming world. For this, however, they need flexibility, they need the ability to make decisions and act, to move houses, gardens, or fields, to cut down trees, if needed, and replant them elsewhere.

Constraints on people's decision-making power is not limited to the management of the environment and natural resources, but also extends to other areas. For example, following the establishment of the protective areas (APA, RESEX) and the subsequent conception of delta

inhabitants as "traditional populations," new projects arrived on the islands with the aim of documenting and safeguarding the rich and exceptional natural patrimony as well as the ancestral skills, knowledge, and culture of the residing inhabitants. Some argue that it was the relative isolation of the deltaic islands in the past that would have contributed to the emergence and maintenance of this ancestral knowledge (Alves and Querol 2018). Consequently, this ancestral knowledge has recently begun to be threatened by the advancement of the "strong winds of modernization and modernity" (Pinheiro et al. 2011, 10), by processes of globalization that tend to homogenize "local lives and experiences," by modernization that "changes habits developed over generations," and by rapid transformations that would result in "a world in which almost everything is forgotten, almost nothing is kept" (Pinheiro et al. 2011, 2). Such a context therefore, arguably, requires intervention and urgent actions (e.g., a community museum, workshop-museum) in order to prevent the ancestral knowledge and culture from being "extinguished in silence" (Alves and Querol 2018, 102).

The advocators of these projects commonly stress the continuity of the current delta communities with pre-colonial societies: they argue that remnants from pre-colonial societies could be felt (Alves and Querol 2018), and their ways of life would "reveal knowledge and skills inherited from indigenous ancestors" (Pinheiro et al. 2011, 9) – populations that, as these authors continue, "preserve a natural and cultural landscape" (2011, 9). These assumptions not only portray both the natural landscape and people's ways of life as stable and immutable, somehow frozen or prisoners of the past, but they also assume that delta inhabitants lead an intrinsically conservationist way of life, that they *should* continue doing so, and, finally, suppose that *only* traces of pre-colonial societies are interesting, or rich and valuable enough to be documented and maintained. This forces people to remain "traditional"; it dismisses people's creativity and flexibility, and deprives them once again of their decision-making power and of their autonomy to decide on their own way of life and on their own future.

"Povo rodado" – "people on the move"

When I met Seu Fernandinho, Seu Gabriel's and Dona Joana's brother, he had been back in Barrinha for about three years. Born on the Ilha Grande do Paulino, a neighboring island of Barrinha, he and his siblings moved as children to Barrinha together with their mother. From his twenties onward, he started traveling to various places, doing the most different jobs. Now

in his early fifties, however, he intended to stay for a longer time on the island. Seu Fernandinho loved to narrate and describe his adventures. He remembered, among other things, without being sure about the order: a job in a Japanese-owned alumina[71] refinery in the state of Pará; adventures in the Free Trade Zone (*Zona Franca*) of Manaus; work in waste removal in the city of Belém; employment in a golf club in another part of the State of Pará; and more recently, construction work in São Paulo. Now and then, Seu Fernandinho had returned to Barrinha, where he would spend several months fishing, before going back on his journeys. He had never learned to read and write, but he had learned a lot in the "school of life," as he put it.

Moving back and forth between the island and the mainland is, as I suggested previously, a routine part of Barrinhenses' everyday life. People leave and have left the island for a variety of reasons. They often left to join family members in cities such as Fortaleza, São Paulo, or Rio de Janeiro, and, through these networks, they frequently found a job for several months. From there, however, curious to see and explore other parts of the country – or, as some Barrinhenses put it, "to win the world" (*ganhar o mundo*) – many people continued their journeys to other places, to other people, to other jobs.

People told stories about jobs in the construction of the Tucuruí dam, in sugar cane plantations, in the Navy, or working as brick and floor layers. They recounted tales about smuggling on the bridge between Brazil and Paraguay, about being cheated and robbed, about losing jobs, but also about friendships and falling in love, and of course about "*saudades*," homesickness, and longing for Barrinha. Most often these stories underlined people's own choice and curiosity to undertake journeys, rather than a necessity.

In this context, yet another self-description came up, as Barrinhenses often referred to themselves, with a bit of pride, as "*povo rodado.*" The term *rodado* literally translates as "rotated", "spun" or "turned" – in this context, referring to spinning tires. The expression thus refers to people on the move, those who have moved around a lot, or "traveled people." With this expression, Barrinhenses thus emphasized both their experiences of traveling to and working and living in various places – including some that lie far beyond the deltaic islands – as well as their knowledge of and ability to traverse and navigate different worlds. These experiences, delta inhabitants insisted, not only enriched them, teaching them how to make a living and to get by in very different settings, but they also somehow contributed to their

[71] Also called aluminum oxide. Alumina is produced form bauxite.

identity, to who they are, and how they see themselves nowadays. Especially those people who had attended very little school – the majority of Barrinhenses are illiterate – underlined how much they had learned "on the road."

"*Povo rodado,*" in this sense, contrasts with some of the other designations commonly ascribed to delta inhabitants. By highlighting their own choices to leave and come back, Barrinhenses opposed themselves to other imageries of "poor" people, which commonly attribute the reasons for people's migrations, especially to the wealthier southern cities, to necessity – for instance, to earn money that they can send back to their families on the islands. Similarly, the emphasis on knowledge and skills acquired during traveling contrasts with the perceptions of backwardness, ignorance, and illiteracy that are commonly associated with the labels "poor" and *ribeirinho.*

Indeed, Barrinhenses portrayed themselves through their self-descriptions as a "*povo rodado*," as actively deciding on their present and future lives, rather than as people passively determined by external dynamics and the decisions of outsiders. Together with the emphasis on flexibility and an embrace of change (Harris 2009) that the expression "*povo rodado*" equally conveys, it is thus also an opposition to dominant conceptions of "traditional people," who are viewed as local and bounded, as immutable or "frozen" in time, and essentially as continuous with or remnants of pre-colonial Indigenous societies.

In this sense, through their self-description as "*povo rodado*," Barrinhenses urge us to see them through a lens of becoming rather than being. "*Povo rodado*" thus reflects an understanding of themselves not as some sort of heirs of, for instance, a fixed and stable set of "ancestral" practices, skills, and knowledge, but rather accentuates people's continuous learning and readjustment of skills and knowledge, while moving and navigating through a transforming world.

Conclusion

This chapter has focused on delta inhabitants' identities, some of which are self-designations while others are externally imposed, while highlighting interactions and interrelations of these identities with other ongoing projects in the region. I have pointed out that both Passarinhenses and Barrinhenses rarely defined themselves in terms or categories of a single profession, ethnic or geographic origin, or religion, and neither used a collective group name

or identity. They rather employed different references that commonly varied according to circumstances and conversation partners. In this chapter, I explored people's identities along five "lines of becoming," each starting from an expression of identification frequently employed. I proposed that delta inhabitants' malleable, shifting, and elusive identities can be better grasped through a lens of becoming rather than bounded, fixed concepts of identity, culture or society.

Whereas a focus on being would see people, their identities, and culture as bounded and stable, a focus on becoming attends to people's transformations and agencies (e.g., Biehl and Locke 2017). It moves beyond seeing delta inhabitants' mixture in terms of a "lack of" what would be "pure" and bounded categories – not entirely Indigenous, not entirely African (*quilombola*), not entirely European. And hence it also moves beyond a preoccupation with finding and defining people in terms of continuities and remnants of, for instance, pre-colonial Indigenous societies. Becoming, as Biehl and Locke (2017, 18) suggest based on Deleuze's thinking, "happens 'in the middle': people moving along and amid multiple lines, pushing the boundaries of forms, escaping and inventing new forces, and combining with other fluxes." In this sense, a lens of becoming acknowledges people's agency and creativity. They are certainly constrained by diverse forces (e.g., historical legacies, outsider's impositions, legislations etc.), but these are not the only forces at play. They also act and decide, they creatively reshape, and reinvent, they oppose and resist, strategically move and transform, sometimes in unforeseeable ways.

This resonates with Harris's (2009) work, who, distancing himself from previous work portraying *ribeirinho* culture in terms of a gain or loss of cultural traits (either from Indigenous groups or Portuguese invaders), suggests that the *ribeirinho* is best understood as "a way of being in time" (2009, 70), rather than a bounded and immobile ontological reality. The *ribeirinhos'* way of life, he argues, "can be compared to riding on the crest of a wave. To conserve this identity, to draw a boundary around it, would run counter to its nature. The non-reifiable aspects of *ribeirinhos*, such as immigration, economic cycles and environmental flux, conspire to give continuity to the momentum of the wave" (2009, 89; see also Harris 2005).

Indeed, "being" or identifying oneself in terms of singular, bounded and stable concepts would not make a lot of sense in the deltaic world, a world of continuous movement and open becoming. Becoming instead emphasizes unfinishedness (Biehl and Locke 2017). Embracing the unknown, embracing change, flexibility, creativity and improvisation – in regard to one's

activities, but also in regard to one's self-definitions, identification and religion – seem crucial for living and continuously readjusting to an environment that constantly changes through seasonal transformations and "nature's making and unmaking," to booming and busting economies, to unstable historic developments, to fluctuating markets and middlemen, to possibilities that appear and vanish, to groups that fluctuate through intense migration.

Moreover, whereas a focus on being tends to perceive temporality as a linear sequence, where a neatly bounded and separated past, present, and future follow each other, the non-linear time-space of becomings, that remains open to the unknown, unforeseeable, and unexpected (Biehl and Locke 1017), allows moving beyond such patterns. Becoming then "occupies its own kind of temporality that unfolds in the present: a dynamic interpenetration of past and future, actual and virtual" (Biehl and Locke 2017, 6). And therefore, in addition to destabilizing the "primacy of being and identity" and shifting attention to transforming sets of relations, attending to becomings acknowledges non-linear temporalities, and allows to see for example what happens in "meantimes and interstitial spaces" (Biehl and Locke 2017, 6-8). Such non-linear patterns resonate better with delta inhabitants' conceptions and perceptions both of change and time (see also chapter 1), with the importance they seem to attribute to the present, and with their fuzzy, muddled, and vague trajectories, narratives, and future plans.

Nevertheless, this chapter also points out that some of these lines of becoming, and the identity labels going along with them, while opening up certain scopes of actions, also close others. Some lines tend to be totalizing and "fix" people (e.g., color, race, and also "traditional"). Delta inhabitants are not completely free to choose the identities that they switch between: they know very well that they will hardly get rid of some, like "poor," and will never be able to access others, like "white." Maybe, the most "becoming" or liberating of these lines is that of defining themselves as povo rodado – "people on the move."

II. Rhythm

Chapter 4. "Everything has its time" – *"Tudo tem seu tempo"*

***Bicho de pé* – Foot bug**

One day in the beginning of July, just after having lunch, Dona Joana told me to sit down in a hammock and show her my feet. As usual, we had eaten under the big, lush cashew tree in the garden behind her house. It did not surprise me that she had asked me to stretch out in one of the hammocks attached to the low-hanging branches of the cashew tree. In Barrinha as in other villages in the Parnaíba Delta, it was part of the daily routine to take a nap after lunch, preferably swinging in a hammock in the tree's shade. But why did she want to see my feet?

"It's the *tempo* (time) of the *bicho de pé*. I have to check your feet and take them out," Dona Joana announced as I frowned; she was waving with a crab pincer in her hand.

The *bicho de pé* (lit. foot bug), is a small parasitic flea known in English as jigger or chigoe flea (*Tunga penetrans*). It is so small, that when it embeds under your skin you can barely see it. Only after some days, it starts growing as the abdomen fills with eggs, eventually reaching up to one centimeter across.

"It prefers to stay just next to your toenails," Dona Joana explained while closely examining my toes. She told me not to worry, the *bicho de pé* was not dangerous if you did not wait too long to take it out. The crab pincer, unlike a metal needle, prevented infections. The *bicho de pé* loved to stay in the small reddish flowers of the cashew tree. At this time, the cashew tree was starting to flower and thus the parasite proliferated.

"Here," Dona Joana suddenly exclaimed, "I think you have one." While I looked a bit disgusted at the small black dot in the right corner of my big toenail, Dona Joana giggled, amused, and eagerly started scraping it out with the crab pincer.

Dona Joana seemed to be satisfied about finding a *bicho* in my foot. For me, however, it was nothing more than a little parasite, so that I did not pay any more attention to the incident until some days later when Dona Joana's mother came to visit. Dona Rosa had lived in Barrinha for a long time until she had married again and moved to the closest town on the mainland. She missed the island life but her new husband did not want to live on the island.

"I heard you already had a *bicho de pé*," she said, just after giving me the usual greeting hug. I nodded in response, not very surprised that the information had already reached her town. "I hope that this time I will have one too," Dona Rosa continued. I looked at her in astonishment. The last weekend when she had visited, Dona Rosa explained, she had gone home without a single *bicho de pé*. That felt strange. "My mother came to visit because she had *saudades* of the *bichos de pé*," Dona Joana, who had joined our conversation, added jokingly "so, don't take away all the *bichinhos*!" Her use of the term s*audade,* which expresses a feeling of nostalgia, a deep emotional state of longing for something absent, and the affective diminutive *bichinhos* made me realize that the *bicho de pé* represented more than a nasty little parasite.

From a medical or biological point of view, this incident is even more striking, as the infestation by the female *Tunga penetrans* is described as a parasitic skin disease (Heukelbach et al. 2005) causing illness, discomfort and secondary microbial infections which can, in certain cases, even lead to amputations and death (Michael *et al*. 2018). At first glance, Dona Joana's and her mother's satisfaction about the parasite's presence and its embedding in my toe therefore seems bizarre. However, this contentment as well as Dona Rosa's feeling of absence can be better understood in relation to what people commonly refer to as the *tempo* of particular things. *Tempo* translates as "time," but can also mean "weather."[72]

In Barrinha, it is common to explain occurrences by saying "*tudo tem seu tempo"* – "everything has its time." *Tempo* usually refers to annually or monthly recurrent happenings of different durations that arise amidst a range of seasonal and tidal changes. In the same way as the appearance of this parasite is referred to as the "*tempo* of the *bicho de pé,*" the ripening and harvest of a fruit would be called the "*tempo* of this fruit" and the passing of a migrating fish in the waterways around the island would be referred to as the "*tempo* of such-and-such a fish." Together these different *tempos* form a sequence of happenings, a recurrent and to some extent also a reliable pattern of cyclic changes in a world characterized by transformation and open becoming. The way Barrinhenses conceive and speak of the *tempos* of particular things evokes both embodiment and relationality: *tempos* involve specific intimate interactions with a transforming environment. Indeed, rather than externally imposed frames of change or impositions of a distant, surrounding environment, *tempos* can be seen as more-than-human temporalities that emerge rhythmically through people's activities and engagements with the

[72] I use the term "tempo" both to refer to past times, as well as to present times. In both cases, *tempo* is about time as "kairos" rather than "chronos" – time, hence, as specific moments rather than chronology.

deltaic landscape.

To explore these relations with environmental fluctuations, I first focus on how people in the Parnaíba Delta attend to some of the seasonal as well as tidal fluctuations, and specifically on how they conceive the "*tempos* of particular things" amidst these various changing conditions of their environment. I then more precisely examine the achievement of "resonance," a term Ingold (1993) uses to refer to the harmonious attunement of interweaving rhythms emerging from mutual attentiveness.

As temporal alignments are evanescent and resonances rarely remain the same, I further explore the importance of flexibility and readjustments of practical skills and knowledge, or what people refer to as *conhecimento*. Parnaíba Delta inhabitants have flexibly shifted between practices according to changing circumstances, but the practices themselves, and their temporalities, have also been changing.

Rains, tides, winds: changing seasons, fluctuating waters and shifting practices

Before coming back to the notion of *tempo,* let me first draw a more general picture of some of the seasonal and tidal changes on the deltaic islands and the ways in which they interweave with people's movements and practices.

Seasonal changes and tidal fluctuations bring about different affordances, for instance by influencing the materiality of the deltaic terrain, by enabling or restricting access to specific spaces, through the ripening of certain fruits or the migratory movements of fish and shrimps. People know from experience as well as continual observation how things around them change with the passing of time, and accordingly shift between practices, orient towards specific spaces and species, and often also engage in specific socialites.

Delta inhabitants commonly name the period of abundant rain (January to July) "winter" (*inverno*) and the subsequent dry period, when rainfall completely ceases and strong winds prevail, "summer" (*verão*). In winter, people dedicate more time to their swidden fields (*roças*) of various sizes either located in their home gardens or in parts of the – previously cleared and burned – nearby *caatinga* (tropical dry forest, type of savanna). Thus, in this period, freshly harvested green beans accompany rice and fish, *maxixe* (maroon cucumber) and *quiabo* (okra) give the stews a special taste, and people enjoy snacking on roasted maize

in the evenings.

After the first weeks of intense rainfall, lower-lying areas turn into swamps, and temporary lakes start to form all over the island. Although the rains soak extensive areas, the sandy ground prevents serious flooding because the water continuously seeps into the sandy substrate and flows away beneath it towards rivers and the sea. As soon as the transitory lakes are deep enough to shelter a variety of fish, people turn to lake-fishing activities. While fishing on the river is mainly a men's activity, often the whole family participates in lake fishing. Villagers perceive these moments of children playing in the water, of bathing together and laying fishing lines as joyful and pleasurable. On other winter days, heavy rainfalls make it difficult to work and be outside. Life however rarely takes place indoors and these moments of sudden confinement sometimes lead to isolation, but – paradoxically – also to very dense gatherings, and moments of intense exchange and gossiping, especially when women come together in another woman's small kitchen space. Generally, whenever the typically short but heavy rainfalls start, a vibrant bustle takes over the village as people open covered water tanks and (re)position all kinds of receptacles under improvised gutters to collect as much as possible of the fresh rainwater.

Towards the end of winter, rain becomes sparser and eventually completely ceases. When strong winds start blowing and the landscape gets drier and drier, villagers say that summer is about to begin. Lakes and swampy areas dry up, and previously fervently sprouting herbaceous plants, called *matinho* (small forest), shrivel and die. Women now spend several hours a day pulling out dried weeds, raking, sweeping and burning withered *matinho*, which they consider an ugly, unpleasant presence in the surroundings of their houses. Only when the garden's sandy soil resembles a white sheet stretching between selected plants (e.g. coconut palms, cashew trees, papayas, banana palms, acerola, ornamental succulents) do people feel satisfaction and a sense of beauty when contemplating their gardens.

As the rains are becoming sparser, water in Barrinha is now – thanks to the infrastructure funded by an evangelical pastor a few years ago – pumped up from the groundwater table into a five-thousand-liter water tank and distributed through a network of plastic tubes to the surroundings of most houses. Rather than keenly watching for dark rain-filled clouds, people are now more attentive to the rattling noise of the generator, switched on every two to three days and prompting the bustling water bucket activity.

















Figure 12: Changing seasons, fluctuating tides and shifting practices

Summer is also the time when soccer playing gets more intensive. The drying up of the landscape makes it easier to find suitable areas for the games. During the summer months, competitions between village teams are regularly organized. It is also the time when most villages organize their *festas,* annual parties held in honor of the village's Catholic saint. Barrinha no longer has a Catholic church, but visits to other *festas* in surrounding villages are common. In Passarinho, the *festa* for Sao Luís Gonzaga is celebrated with a Mass in the church, a soccer tournament, a prize draw, and lots of drinking and dancing to booming loudspeakers. All these events are occasions of encountering friends and kin from neighboring islands or mainland villages, of celebrating, dancing and drinking together.

Another festive moment is the period of *farinhada,* right in the beginning of summer*,* when the appreciated manioc flour (*farinha*[73]) is produced in artisanal, family-run *farinha* houses with special mud ovens. In Passarinho, some older inhabitants still have a *farinha* house in their home garden. Barrinhenses, however, no longer run their own *farinha* house, but some villagers travel to *farinha*-producing villages in the surroundings where they exchange small dried fish (e.g. sardines) of little market value for freshly roasted *farinha* with kin and friends during this time.

In addition to these seasonal transformations, people remain attentive to the lunar cycle. The power of the moon, delta inhabitants commonly say, is immense. It not only moves masses of tidal waters, but additionally influences a variety of other activities such as the cutting of wood, the hatching of chickens and ducks, and other animal behavior, and it regularly "burns" (*queima*) numerous cashew fruits. Over the course of a day, two high and low tides alternate, and twice a month – at new and full moon – spring tides occur; that is, high tides are higher and low tides lower than average.

High tides completely flood mangroves, making the gathering of crabs and seashells impossible. During the lowest low tides, many waterways, especially creeks, become too shallow for canoeing and in Barrinha – which unlike other deltaic villages has no floating dock adjusting to tidal levels – an extensive field of mud stretches out between the village and the river, making transport difficult. According to delta inhabitants, some fish can be more easily fished during "breaking tides" (*maré de quebramento*)[74] and others during "launching" tides (*maré de lançamento*).[75] Moreover, the direction of flow, reversing from high to low tide,

[73] Farinha, together with rice, constitutes the basis of meals on the deltaic islands and many other rural villages.
[74] When the amplitude variation between the tides starts to decrease.
[75] When the amplitude variation between the tides starts to increase.

is of crucial importance for most fishing techniques, and hence fishing activities follow the daily pattern of high-low tides.

In Barrinha, so-called "shrimp tides" (marés de camarão) may occur twice a month during spring tides, created through coordinated movements of tidal waters, shrimps and fishermen. During these seven-day periods, fishermen from mainland villages travel to Barrinha, sometimes doubling the number of its inhabitants, and activities around shrimp fishing largely rhythm[76] everyday life.

Inhabitants, and fishers in particular, therefore observe daily the time the moon rises and its position in the sky in order to anticipate the strength of a tidal flow, decide whether it is a "good" or "bad" tide for a certain type of fishing and calculate the coming and going of high and low tides, and accordingly adjust their practices and their own movements to tidal fluctuations and the specific affordances they bring about.

Tempo (time/weather) as rhythm

The interweaving of social life with seasonal variations is not a new focus in anthropology. Analyzing the different intensities of social life in the course of a year, Mauss (1979) for instance argued that seasons were more than natural phenomena in that they also emerged through people's practices, rituals, taboos and other social dynamics. Evans-Pritchard (1940) described the differences in Nuer social life during the dry season, when they lived in dispersed camps, and the wet season, when they were forced to gather in the villages on higher points that were not flooded.

However, these earlier classical works commonly differentiated between seasonal activities in a natural cycle, on the one hand, and a social cycle on the other hand. Building simultaneously on an ecologically determinist and a socially constructivist view, they hence got caught in contradictions as they considered that humans construct their world prior to inhabiting it, but simultaneously are determined by this world (Harris, 1998; Krause, 2013). To avoid this contradiction due to a Durkheimian framework, Harris proposes a "dwelling perspective of seasonality" (1998a, 66) that, though inspired by Mauss's work, builds on Ingold's (1993) understanding of temporality. In his work on the interplay of seasonality and sociality in an

[76] Throughout this thesis, I use "rhythm" also as a verb; mainly, to emphasize that people's activities, tides and other rhythmic phenomena play an active role in everyday life.

Amazonian floodplain, Harris shows that the rhythmicity of activities making up social life is constitutive of seasonality and not simply expressive of it. Seasonality, he argues, is an "embodied periodicity, produced in the attendance of people to their environment" (Harris 1998a, 66).

Such observations are also pertinent for everyday life on the deltaic islands and resonate especially with what people refer to as *tempo* of particular things. The commonly uttered expression "*tudo tem seu tempo*" is most often used to explain or refer to recurrent – usually annually or monthly coming and going – happenings such as the migration of fish or shrimp or the ripening and harvesting of fruit. In this sense, *tempo* can be translated as time, and the expression accordingly as "everything has its time." However, in Portuguese, as in other Romance languages (e.g., Italian, French, Spanish), *tempo* has a double meaning and can also mean weather. And indeed, it is in relation to the seasonal changes and tidal fluctuations, which I outlined above, that what people refer to as *tempo* of particular things arise and vanish and hence should be understood.

For example, soon after the beginning of the dry period, the first reddish flowers appear on the cashew trees. A restless excitement commonly spreads in the village as the preparation of the appreciated "*tempo* of cashews" is about to begin. People start to attend to their trees – often planted in more distant parts of their home gardens. Especially women now spend great parts of their day beneath cashew trees, raking and sweeping the ground, which will later facilitate the gathering of fruits and nuts. Besides their joyful anticipation of the "*tempo* of cashews," the women know that the "*tempo* of the *bicho de pé"* is also about to begin. This is a time when the parasite, which is said to like the cashew trees' flowers, proliferates and more frequently embeds in people's feet, hence prompting women to check daily on their own feet and those of their family members.

During the flowering period, commonly a brief and light rainfall occurs. People call this unusual happening in the ever-drier landscape the "rain of the cashew trees." It provides the final impulse for the fruits to ripen. When finally the first yellowish-red fruits appear between the dense green leaves, especially women and children start spending several hours a day collecting fruits and nuts. While acidic fruits now give the fish stew the desired sour taste and the juice of the sweet fruits offers a pleasant refreshment, women sell the nuts to traders, some of whom live in the same village. As an important temporary source of income, cashew nuts are indeed often called "the women's salary."

Some months later, when the fruits become sparser and the cashew time's end approaches, women start observing the *murici* shrubs (*Byrsonima sp.),* as this small yellow fruit's *tempo* begins shortly after that of the cashews. Unlike cashew trees, people say, *murici* shrubs cannot be planted in home gardens. They sometimes spontaneously grow near people's houses, but are more abundant in the nearby *caatinga* forests. During this time, women therefore undertake longer and more frequent journeys into the forests to gather the fruits, most of which they sell to middlemen. Back home, children help to sort the fruits heaped onto spread blankets, and women process some fruits into much-appreciated juice and desserts for their own consumption.

Towards the middle of the rainy season, after the first months of rain, the *guabiraba* – a small black fruit – ripens in the *caatinga* forests. The fruit is not sold, but highly appreciated by many people. However, the "*tempo* of the *guabiraba"* is particularly fleeting, so that those who want to snack on the fruits usually hurry to undertake trips to the nearby forests.

Not long afterward, huge swarms of sardines migrate through the deltaic waterways. Shrimp fishers generally do not appreciate this "*tempo* of sardines" but rather find it annoying because sardines have little market value, but require a lot of time to untangle from nets, and through their frantic movements make many of the valuable shrimps drop out of the net back into the water.

Ingold (1993) introduced the concept of "taskscape" to emphasize that landscapes are not a container or backdrop to social life, but an inherently temporal phenomenon intimately entangled with humans as well as nonhumans dwelling in it. Whereas "tasks are the constitutive acts of dwelling," the taskscape refers to "the entire ensemble of tasks, in their mutual interlocking" and is thus "an array of related activities" (Ingold 1993, 158). In the performance of their tasks, people – or more broadly, beings – however "also attend to each other," Ingold points out, and hence the temporality of the taskscape is inherently social (Ingold 1993, 160). Drawing on Gell's (1992) reflection on time, Ingold (1993) further points out that the temporality of the taskscape is not perceived from the outside, from the viewpoint of a distant observer, but rather in the very performance of tasks. The time of the taskscape, then, is based on action, rather than on a series of discrete events or chronological time, and social temporality is a form of multiple temporalities that emerges in interaction with the world, with other beings, and therefore is essential to our social being (Ingold 1993).



Figure 13: Time of cashew, time of murici and time of sardines

In her research with Aboriginal people of the Victoria River region, Rose (2012) draws attention to the temporal patterns of sequence and synchrony. These patterns are integral to life and thus embodied and lived forms of time that differ from the abstract, absolute and disembodied conception of Newtonian time. "The web of life," Rose argues, "can be understood as the complex interactions of sequence and synchrony, as these patterns play out across the lives of individuals, species, country, climate, and years" (2012, 129). Rose points at the importance of the intersections between sequence and synchrony, sites of "encounter and nourishment" where "embodied knots of multispecies time" form (2012, 136).

On the deltaic islands, sequences and synchronies matter in many ways. After the dry season, the first months of rains for instance set off a sequence of flowering and ripening of fruits in the forests. On swidden fields, the sequence of cultivated crops is crucial. According to the location of the field, the cultivators have to find and play with the appropriate sequence according to the crops' cycles: lower-lying fields would be flooded faster, thus affording crops with shorter cycles, higher-lying fields would be drier but could be cultivated over longer periods. But also the sequence of clearing, cutting, burning, cultivating, and lying fallow matters, as well as the rotation or sequence of the fields' emplacement in the forest. Moreover, after abandonment, the forest regrows in a certain sequence or succession of different plants.

Synchronies too come to be in different ways. Some emerge through efforts of humans and nonhumans in aligning with other temporalities. For example, when fruits ripen in the forests, not only do people venture there more frequently, but so also do a range of nonhumans (e.g., birds, pacas) arrive to feed on them. When the first cashew fruits appear, more birds come to home gardens and become interested in ripening fruits. Remaining attentive to synchronies can provide valuable indicators about *tempos* or other recurring patterns to come. Shrimp fishers, for instance, know that when the water of spring tides gets dirtier, red shrimps are about to arrive at the islands' beaches. But not all synchronizations are "processes of multispecies nourishment" or a "story of desire" (Rose 2012, 131-133). Some happen rather coincidentally or even have negative effects. The synchronization between shrimp movement and the *tempo* of sardines is one such example. Or, when the moon is in a certain position and ducks or chickens hatch at the same time, their hatchlings are often weak. People hence also remain attentive to avoid certain synchronizations (see also chapter 6).

When asking delta inhabitants about a particular *tempo*, they generally put it in relation to other *tempos* rather than attributing it to a specific month or date. A *tempo's* coming and going may vary from year to year or month to month, but together with other *tempos,* it still forms a

sequence of happenings. *Tempos,* then, are not stable and fixed to calendar dates, but an ordering of movement. This takes on particular significance in the context of open becoming and the often abrupt and hardly predictable transformations such as nature's "making and unmaking," which I described earlier, and that often take people by surprise (see chapter 1). In comparison to the latter, *tempos* are, through their repetitive aspects, far more reliable patterns of change, which allow – at least to some extent – for anticipation and preparation. *Tempos* are hence important in rhythming everyday social life. Besides anticipation and preparation, there is often also a longing for upcoming *tempos* – for the taste of specific fruits or fish, or especially pleasurable activities. The repetitive and intimate engagement with *tempos* then brings about familiarity, which, as Rizvi (2015) points out, allows for a sense of belonging and can also bring about forms of nostalgia. This explains, for instance, why for Dona Rosa the lack of interaction with the *bicho de pé* provoked an emotional state of longing for something absent, even if this interaction by itself was not especially pleasant. Indeed, the absence of experience of a particular *tempo* may engender feelings of unfamiliarity and discomfort.

For Ingold (1993), such a successive building up and resolution of tension that arises when movements build on previous movements and prepare for upcoming ones is an essential characteristic of rhythm and distinguishes it from other recurrences, such as metronomic or clock-like movements that always reproduce the same segment. Rhythm, then, is "repetition with difference" (Lefebvre 2004: 90); rather than an externally imposed monotonous structure, rhythm is never quite the same, and is "intrinsic to the movement itself" (Ingold 1993, 60). Social life, Ingold (1993) argues, has an essentially rhythmic character. However, compared to music, for example, "in social life, there is not just one rhythmic cycle, but a complex interweaving of very many concurrent cycles" (1993, 160). Developing these ideas further, Harris (1998a) comes to the conclusion that "the periodicity of social life on the Amazon floodplain is neither due to pressure and necessity, nor to an environmentally-imposed social structure to which individuals conform. Instead, for Parúaros the annual rhythm is inherent in the process of social life. Seasonality is intrinsic to people's engagement with, and perceptual alertness to, a changing environment which, in turn, is integrated with the changing constellations of their social relationships" (Harris 1998a, 79).

Similarly, the local conception of *tempos* illustrates that these are not understood as external changes happening somewhere "out there." Rather than imposed frames of environmental change that determine social life, *tempos* emerge rhythmically through people's activities and

their attendance and adjustment to other human, as well as nonhuman, movements (e.g., tides, fish migration, seasonal fluctuations), and interweave with other – sometimes concurring – rhythms. Indeed, many fruits ripen in the forest, but only through relations of gathering or harvesting do their ripenings become conceived of as *tempos*. Many kinds of fish are present throughout the year. Still, at certain moments – during their *tempo* – people fish for them more frequently because they are particularly fat and tasty or because the fishing technique only allows them to be caught during these moments. Also, *tempos* are not always enjoyable relations but might be an "uneasy being with" (Whitehouse, 2017); as much as some arrivals please, others, such as the *tempo* of sardines, might disturb and be uncomfortable.

Moreover, and as I will detail further below, *tempos* may vary considerably over time. For a long time, cashew fruits and nuts were only occasionally gathered in the forests, only a few trees were planted in home gardens and most fruits rotted on the ground. There was, of course, a flowering period of cashew trees, followed by the ripening of fruits. Older inhabitants remember that what is referred to today as the "*tempo* of cashews" only arose with increased tourism in the region and the resulting development of cashew nut markets, as well as improved transport facilities. It is therefore not the seasonal cycle of cashew ripening, the fluctuation of tides, or the migrational movements of fish and shrimps that determine people's lives and practices; rather, the inhabitants' observational skills, ability to anticipate, and readiness to seize opportunities are what makes the *tempo* of particular things in relation to these movements. *Tempos* and other rhythmic phenomena indeed come about in relation not only to tides, precipitation, growth cycles and people's practices but also relate to broader socio-political and economic dynamics such as price fluctuations, festivities, infrastructures, *bolsa familia* and pension payments or environmental legislations, as well as to personal skills, preferences, dispositions and opportunities.

I will come back to the variation of tempos and the continuous readjustment of practices later. Before this, let me elaborate a bit more on the "making" of resonance and the significance of ordered movement in the context of the sometimes quite unpredictable and abrupt transformations characteristic of the deltaic islands.

Making resonance

Besides referring to and explaining recurrent happenings, the expression "everything has its time (*tempo*)" is also frequently employed to emphasize that things have a particular timing and that consequently, there is a "right" time to do things. This implies, on one hand, that one should not desire things "out of time." For example, when I ignorantly asked for specific fruits or fish, delta inhabitants sometimes quite brusquely reminded me that it was no good to ask for things out of their *tempo*. But the importance of timing goes beyond such incidents. For most practices, the right timing is not only crucial for smooth working and successful outcomes, but it also avoids serious risks such as getting stuck on emerging sandbanks, for example. In other words, the "achievement of resonance" that Ingold defines as "rhythmic harmonization of mutual attention" (1993, 163) is crucial for a successful performance. To Ingold, resonance captures the intersection of rhythms resulting not only from human and other living beings' activities but also from a range of other rhythmic phenomena like seasons, tides, and winds. People achieve resonance through "attendance" – a perception that fully and actively involves the senses – and an adjustment of their own movement to other movements (Harris 1998a). Let me illustrate this further with the example of a two-day fishing trip we went on with a fisherman from Barrinha.

One morning, Maurício invited Daniel and me to go fishing for white shrimp. It was mid-May, and there seemed to be a lot of white shrimps in the rivers around Barrinha. We left around 9 o'clock in the morning when the tide was lowering. Maurício had observed the catches other fishermen had brought home the day before and decided to go northwestwards into the tidal channel halfway between Barrinha and the open sea.

Our wooden canoe, powered by a *rabeta*, a 5.5-horsepower outboard engine, glided smoothly through the water. I sat in the boat's bow on the front thwart and Daniel on the middle thwart while Maurício sat in the boat's stern, carefully steering the boat with one hand. With his free hand, Maurício threw a sliced plastic bottle to the front and advised me to scoop out the water that had started seeping into the canoe between the two middle thwarts.

Maurício carefully scanned the river for other boats. I followed his finger but could not identify more than small, undifferentiated dots floating on the water. While I could hardly make out the fishers' shapes, Maurício already informed us who they were, where they came from, and what they were fishing. Later, I learned that this identification was important for our fishing success. No explicit rules existed on access to fishing spots. In principle, anyone

could fish where they wanted. Maurício had to be attentive to the position of other nets. Accidentally cutting one by driving over it would certainly lead to a dispute. So would enmeshment of his net with other nets through the movement of the tidal flows. Keeping his net at a safe distance from others, especially other shrimp fishers, thus certainly helped to avoid problems.

Moreover, carefully observing other fishers was also a means of obtaining valuable information about the presence and abundance of certain species in a spot. This required abilities to analyze the fishers' posture, how they took the catch out of their nets, and their body language. Maurício focused particularly on other shrimp fishers. The kind of nets they used caught fish by their gills; fish thus had to be untangled and squeezed through the meshes. Shrimp, on the other hand, just hung between the meshes, pressed together in an inverted U-shape; they fell out by shaking the net or tapping on it. Maurício, therefore, searched the water for shrimp fishers, people pulling out their nets with little effort and whose posture showed animation and enthusiasm.

With all this information and calculations, as well as the movements of the tides in mind, Maurício decided where to cast first. Maurício used a gill net called a *caçoeira,* a curtain-like single netting wall held vertically by an upper floating line (*bóia*) and a lower weighted bottom line made with lead (*chumbo*). The net hung in the water like a wall and caught fish according to the mesh size. Large fish bounced off small mesh sizes, and small fish slipped through wide openings.

Maurício cast a nylon filament net with openings of three centimetres (*malha*/mesh 3). Unlike others, he confidentially cast with a running motor. Most fishermen feared this because the net easily got caught in the engine. They thus preferred to cast the net while rowing, which was much more time- and energy-consuming. Indeed, at twenty-nine years of age, Maurício was already known among other villagers for his fishing skills and knowledge. In rapid motion, he now threw the lead line out in the water, manoeuvring the boat in a straight line with the other hand. Throwing out the float line, I attempted to follow and synchronise with his movements. The last parts of the net and the attached big floater splashed into the water; it would now be the only sign to trace and follow the net's movements. "If you lose sight of your floater, you lose your net," Maurício explained. The lowering tidal current would carry the net towards the canal's mouth, where we would wait for it. The force of the water flow put the lighter float line ahead, inclining the net. By dragging over the muddy ground, the weighted line made the shrimps hidden under the mud jump up; the inclined upper net part trapped them.

Around thirty minutes later, the net arrived at our spot; it was time to haul in the net. Hand over hand, Maurício on the float line, Daniel and me alternating on the weight line, we lifted the net out, folding it on the middle thwarts. There – something was sparkling. A sardine. Another one. Another two. Three, four, five. It was full of entangled sardines; Maurício explained that it was the "*tempo* of the sardines." They were migrating in huge shoals through the deltaic waterways. We had trapped part of a shoal. Maurício was not very happy about the sardine catch. Sardines had little market value, and besides all the work to take them out, they shook the net in attempts to free themselves, making some of the caught shrimps fall back into the water. Then, we noticed the first shrimp, a white ball, squeezed into the net's meshes. Towards the net's end, suddenly, a lot of shrimps. Maurício smiled; his mood lit up. He advised us to take care and haul gently; the shrimps might fall out.

Combining the net's movement in the water, the position of the shrimps in the net and observing the tidal flows again, Maurício could now better determine where in the canal the shrimps stayed. Accordingly, our next three casts caught more shrimps than sardines. With a good 5-kilo catch, we returned to Barrinha in the afternoon.

The next morning, we left around one hour earlier, according to the tidal rhythm. We cast the net right in front of Barrinha. The first cast was promising: white shrimp, red shrimp, and only a few fish. If the first cast is good, most of our successive casts will be successful, Maurício confidently announced while driving towards the spot we had been the day before. He was right. After some more casts, we returned shortly before nightfall with a 15-kilo catch.

Unlike the movement of red shrimps that closely relates to the rhythm of spring tides, white shrimps follow a more irregular pattern. Fishers hence attend to various changes that could indicate the presence of white shrimps. White shrimps are known to "jump" (*pular*) out of the water when frightened. Fishers almost continuously – even when engaged in other practices, or simply traveling on the rivers – monitor the water surface. But also the behavior of other animals – like birds, for example – the catches of other fishers, and exploratory fishing trips are important to detect periods of white shrimp abundance. Once such a period arrives, fishers closely attend to tidal fluctuations and adjust their movements accordingly. The tidal level and the direction of flow influence not only species' presence in certain spots and the fisher's access to them, but also the net's movement in the water. Besides attending to shrimps and water flows, attendance and attunement to the movements of other fishers and their nets is equally essential. After our fishing trip, Maurício explained to me that a very experienced fisher was fishing next to us on the first day. This limited Maurício's possibilities to cast his

net, as he had to adapt to this fisher's casts to avoid disturbing him. On the second day, only this fisher's much less experienced sons were fishing, which granted Maurício greater flexibility. Moreover, to further complicate observation and attendance, many fishers also use strategic moves to mislead other fishers. For example, on the second day, during some of the best catches, Maurício decided to quickly haul in the net and fold it on the middle thwarts without shaking out the shrimps. He explained that his simulation of an empty catch would keep other fishers away from the good fishing spot he had identified.

Achieving resonance is therefore not a simple undertaking. Even skilled and experienced fishers like Maurício have to make an effort to resonate with other rhythms. In other words, resonance is actively "made"; it is a process of learning that one constantly has to work on in order to, at least partially, reassess and readjust one's own movement to a range of other interweaving movements and their temporalities. On the fishing trip I went on with Maurício, this becomes apparent in the improved performance on the second day, which is far from being an exception in fishing; with the passing of days, there is frequently an improvement in catches. On the first day, fishers have to familiarize themselves with all the complex ongoing movements; they hesitate, explore and analyse the situation. On subsequent days, the fishers are commonly more confident. They have learned from the previous days' experience and know more precisely where the good spots are, how tidal flows and shrimps move, and who else is fishing, which can all contribute to gradually increasing their resonance. Resonance can therefore not be taken for granted. As Harris (1998a) points out, it requires constant work and sometimes discomfort. People's practices, then, are attempts to coordinate with various other intersecting temporalities that might succeed or fail (Harris 1998a). In everyday deltaic life, the achievement of resonance is not a prevailingly harmonious process, but conflicts, struggles and failures to attune are part and parcel of the making of resonance.

"I know a bit of everything, I have done a bit of everything": readjusting knowledge and skills

Temporal alignments matter for everyday life on the deltaic islands. Many practices are performed in a situation of complex temporal "multispecies coordinations" (Gan and Tsing 2018, 116). These coordinations, as Gan and Tsing (2018) point out, may also arise through frictions and contingencies; they are sometimes unplanned, and they are evanescent. Resonances indeed rarely remain the same. For shrimp fishers, as we have seen, the way the

movements and temporalities of shrimps, tides, nets, and other fishers intersect are never the same. But, more broadly speaking, new rhythms also arrive, and existing ones might considerably change. Many practices have, for example, become more tightly oriented towards markets; price fluctuations or appearing and vanishing traders interfere with them. Motors have accelerated fishing and transport; larger and finer-meshed nets increasingly interrupt migratory and reproductive cycles of fish and shrimps. The number of big shrimp-trawling ships along the coast has increased in recent years, interfering not only with shrimps' movements but also with market prices. Fishing moratoriums may temporarily interrupt fishing rhythms. Tied up with globalized processes, some dynamics like rainfall patterns and salinization have become increasingly uncertain or rapidly transforming.

For people to resonate with other temporalities, they require attentiveness, careful observation and a range of quite different skills that can flexibly be employed when things change. Seu Juzé explained that for life on the deltaic islands, it was important to "know a bit about everything." Rather than perfectly performing a single set of skills, flexibility and improvisation are hence crucial to adapt to the changing deltaic environment (Krause 2022). People commonly emphasized that each thing needed a particular "*conhecimento*," or in Seu Zé's words: "It is all about *conhecimento*, you know. And everything requires its own *conhecimento*." *Conhecimento,* in this sense, is a term that people broadly use to refer to the knowledge a practice requires – for example a fisher's knowledge about tidal movements, winds, good fishing spots, the kind of fishing gear and bait to use, the behaviour of fish, price fluctuations – but also includes practical skills like fishing techniques, repairing of nets, maneuvering of boats, etc.[77]

From the delta inhabitants' perspective, *conhecimento* is fundamentally linked to a place and context; it is created by doing, by living and dwelling within the deltaic landscape, for example. This is one reason why Seu Juzé commonly – and increasingly – got annoyed when scientists from outside (*de fora*) tried to explain things to him, such as the behavior of crabs or the movements of water flows. "I know about this place," he then told them, and added half-jokingly, "I just wasn't born in the tidal waters, otherwise I observe everything." To me he said, "how should they know? They can know things of their places, from where they live. But how should they know this place? They have never been here; here, they know nothing at all."

[77] Delta inhabitants rarely use the term *habilidade,* which would be the most direct translation of "skill."

To underline his explanation, Seu Juzé brought up another example: that of tides and tidal calendars or charts. Pointing to a calendar that the Fishermen's Colonies (Colônias de Pescadores)[78] had distributed to households, hanging on his kitchen wall and indicating moon phases and tides, Seu Juzé said:

"They put the moon and tides into the calendars, they throw them in there without knowing. How should they know? In reality for us it's like that: they put a day of the month when the tide will come in, but it never comes in on the day they put there; it comes in either before or after. Look, the tide, maybe only God knows, even on us, the tide plays tricks on us, even on us who live within it."

Seu Juzé's words once again underlined the continuous transformations of the deltaic landscape and the relative unpredictability inherent to many movements. In such an environment, not only constant observation but also a continuous reassessment and readjustment of knowledge and skills became necessary, which is why static, abstract knowledge created outside the place made little sense to delta inhabitants. As an example, almost at any time, even when being in his home garden, from where neither rivers nor the sea were visible, Seu Juzé observed the moon – the time it rose, its shape and its position in the sky – the water level in his well (*podzo*), the behaviour of certain birds and the presence of mosquitos, so to continuously keep in touch with the level of tides and fit his activities into their rhythm.

The knowledge that emerges in such relationships of close attention is indeed an "intimate" one (Raffles 2002b). Seu Juzé's description of "living within the tide" captured this intimacy well; the affective, embodied relations of people with tides. For delta inhabitants, tides were much more than the noticeable – and often striking – rise and fall of sea levels and associated changes in water currents. Tides permeated almost every realm of everyday island life. They were not limited to the shores or the water courses; they were present throughout the village, in home gardens, at kitchen tables, and the nightly telenovela watching. Marcelo, Seu Juzé's son, for example, who was in his thirties when I met him, explained that in spite of the difficulties he often encountered in trying to feed his family by catching crabs, he still would not want to exchange it for work on the land (*terra*). The reason, he continued, was the way

[78] Similar to the Syndicates for rural workers, the Fishermen's Colonies (*Colônias de Pescadores*) are responsible for defending the rights and interests of workers in the artisanal fishing sector. They also allocate fishing licenses, inform fishers about fishing rules and restrictions, and are in charge of paying pensions and social securities, such as the compensation during the annual period during which fishing is prohibited. However, the first colonies, built from 1919 onwards, aimed to organize fishermen as a reserve for the navy, to assist in controlling and defending the coast (Ramalho, 2014a) (see Chapter 7).

he felt when working "in the tide," an indescribable feeling that he had never experienced when working on the land. Many people also told me that the ebb tide (*maré de vazante*) carried away bad things from the body. When 9-year-old Thiaguinho had chickenpox, for example, he was immediately sent to bathe in the ebb tide, and when not long afterwards the itchy, fluid-filled blisters disappeared from his body, his mother was sure that the tide had washed away the disease.

In this context, Raffles' (2002b) redescription of the local in "local" knowledge as "intimate," which brings to the foreground its relation to place, its embedding within fields of power, its affective, embodied and relational aspects, is indeed pertinent. The local is not only often placed in an asymmetric relationship with – that is, seen as subjugated to – scientific knowledge, as Raffles (2002b) points out and as also Seu Juzé hinted at, but it is also often – maybe even more so when termed "traditional knowledge" that is then equated with "ancestral" knowledge (e.g., Alves and Querol 2018) – seen as inherited, self-contained and static, as I have outlined in the previous chapter. *Conhecimento*, however, is far from being understood as a fixed, pre-formed set of knowledge and skills that can be separated from its context, inherited from pre-colonial Indigenous societies and passed on from generation to generation. On the contrary, it is constantly adapted, reassessed and reattuned to changing circumstances. This resonates with Harris's (2005, 199) understanding of skills among Amazonian *ribeirinhos* as "practical, sometimes hybrid, expressions of struggles to constitute oneself in time." Skills in this sense are "improvised abilities" that each generation reinvents and readjusts according to the new and changing conditions they confront (Harris 2005, 197). Let me detail this a bit more by taking a look at Seu Juzé's personal trajectory.

Changing circumstances, shifting practices

Seu Juzé's flexibility and curiosity

When I met Seu Juzé, he was in his fifties and had for some years already been working in a new job that in some aspects differed quite strongly from his previous activities. He proudly told me that he now worked as a housekeeper on the private island of Barreira. During my stay, he invited me several times to accompany him to his workplace. After a twenty-minute walk through *caatinga* forest, along the mangrove and then through an area of dead mangroves to Passarinho's port, we embarked in his canoe and Seu Juzé steered the *rabeta*

through the shallow igarapé, turned left into a side arm of the Canárias river and drove along the mangroves. After a 30-minute ride, Seu Juzé pointed to the left bank and shouted something over the engine noise. Shortly afterward, a blue wooden house on stilts with a covered terrace appeared amidst the mangroves. “Here we are,” Seu Juzé announced, and moored the canoe to the wooden pier he had built with mangrove poles.

Barreira island had passed through the hands of a series of owners. For some time, there used to be saltworks on the island, but they no longer existed. The current owner, Seu Juzé’s employer, lived in São Paulo and only occasionally came to visit. He was planning to invest in tourism, Seu Juzé explained. So far, however, the stilt house was the only infrastructure. Seu Juzé took care of the house and the surrounding land with some cashew trees and a small herd of goats that grazed in the nearby *salgado* and *caatinga*. From time to time, a group of upper-class people from Parnaíba came with their jet skis to spend their Sunday there. Seu Juzé then took care of the guests’ well-being. He hung up hammocks on the terrace, where they could relax, drink and listen to booming music from their loudspeakers. Whenever they wanted, he dived into the water and fetched oysters from the small oyster farm he had set up near the wooden jetty, and he served them fresh crabs that he had previously caught in the surrounding mangroves. Sometimes, Seu Juzé’s wife also came along to cook delicious fish for the guests.

Seu Juzé was convinced that, despite the many things he had done during his life, he had never had such a good job as his current one. In fact, he was the only resident of Passarinho who earned a fixed monthly salary. Moreover, his job had come with one of the sought-after official worker-ID cards (*carteira assinada*), which gave him both rights as an employee and social security, and also a good reputation among fellow delta inhabitants. The only thing that annoyed him from time to time was that he had to withdraw his salary in the city of Parnaíba once a month on pre-fixed dates. If he did not take his salary on those dates, it happened that the bank deducted part of it, Seu Juzé explained to me, rather upset. During the months I stayed with Seu Juzé’s family, it indeed happened that he picked up his money after those dates – not necessarily because an urgent incident prevented him, but rather because such strict time frames did not match with his other activities, and it went against his habit to conform to them. Indeed, maybe the crucial reason why he considered this job the best one was that it granted him at the same time a fixed salary *and* great flexibility to carry out other activities. He hence enjoyed the security of a monthly income but did not have to break with his way of life; that is, he could continue to practice activities such as fishing or gathering seashells and forest products, many of which he had been doing before engaging in the

housekeeper job, and which, as he often pointed out, did not follow "office schedules," but were commanded by the temporalities of tides, seasons or nature's transformations.

Indeed, before the housekeeper job, Seu Juzé had flexibly shifted between livelihoods. He liked to talk about the many things he had been doing in the course of his life and insisted on his broad range of *conhecimento* of a variety of things and practices. In one of our conversations, he told me, "Here, I know a bit of everything, I have already done a bit of everything." At times, Seu Juzé had jumped onto newly opening opportunities. As a young man, for example, when the rice cultivations started flourishing, and workers were needed, he left Canárias, his home village, to work in the rice plantations in the mangroves south of Passarinho. At other times in his life, he had temporally intensified some of his subsistence activities. When the crab market started to grow due to increased tourism, especially along the coast and beaches of Fortaleza (State of Ceará), and many middlemen appeared on the islands to buy crabs from delta inhabitants, Seu Juzé turned his occasional subsistence-oriented practice of crab catching into a major economic activity for some time. When crab catching got more difficult, environmental regulations stricter and traders started looking for better places, Seu Juzé reoriented himself.

From time to time, he also intensified his fishing activities. Together with friends, he then fished for freshwater shrimps in the Canárias River or undertook longer fishing trips towards the Ilha do Cajú, Ilha Grande do Paulino or Barrinha. They slept in the fishermen's huts spread along most islands' sandy shores, caught fish with gill nets (*caçoeiras*) or shrimps with the *puçá* (small trawling net). They returned only after a week to Passarinho and sold part of the fished products to middlemen. But there were also moments in his life when he almost exclusively lived off a combination of subsistence activities. He then made bigger swidden fields, helped his parents-in-law with the cultivation of cassava and its processing into *farinha* in the family's own *farinha* house, raised small livestock, fished with hand lines and his *tarrafa* in the nearby igarapés, lakes and rivers, occasionally caught crabs and seashells and gathered fruits and nuts in the forest. These were practices that most people in the deltaic villages relied on and had knowledge (*conhecimento*) about, Seu Juzé explained. He had learned about many of them as a boy already, by accompanying and observing his father. It was also through constant observation that he kept up with transformations and readjusted practices such as fishing and cultivating to them.

However, during his life, Seu Juzé also tried out practices that he knew little about beforehand. For example, he started trading with cashew nuts and later with murici fruits; he

bought the nuts and fruits from villagers and resold them in the city of Parnaíba. It was one of the activities, he explained, that required a very new set of *conhecimento*. He had to set up a network of buyers; for each product, he had to know beforehand to whom he would sell it, and he had to learn about prices and their fluctuations. This knowledge was still useful to him after he quit trading. If possible, he told me, he never sold all cashew nuts during the "*tempo* of cashews" but kept, or rather hid, some bags in his house. He had observed that the price of cashew nuts climbed considerably towards the end of its *tempo*, around mid-December. At that time of the year, only a few nuts were left in gardens and forests, and most people had already sold theirs. So, when traders passed by looking for more nuts to buy, Seu Juzé demanded around triple the usual price and they would still buy the nuts because the period coincided with the holiday season and tourists highly valued cashew nuts.

It was also through observation and investigation that Seu Juzé came to set up his oyster farm. Previously, he collected oysters in the mangroves, as is customary in Passarinho. However, one day, when returning to the stilt house in Barreira, an oyster fell in the water near the wooden pier, and when he later dived to fetch it, it had taken root. Curious, he started to investigate (*pesquisar*), Seu Juzé explained. He placed other oysters close to it; observed, tried out ideas, and this way discovered how to establish and care for his oyster farm. Yet even once his farm grew, Seu Juzé continued observing and investigating attentively. This became particularly evident one evening when the news on television reported the spread of a disease in oyster farms in the southern city of Santa Catarina, where the oysters were affected by an algal toxin. Obviously worried, Seu Juzé repeatedly asked me about the details of the news report; he inquired, reflected and weighed the possibility his oyster farm could be in danger of catching the disease too. Finally, he came to the conclusion that the risk was minimal, especially because he cultivated his oysters in "nature" (not in the place they were born, but in similar conditions), and he checked on their wellbeing almost daily; if an oyster started to change (e.g., became soft), he immediately removed it from his farm.

This description of part of Seu Juzé's past activities illustrates that delta inhabitants commonly rely on – and take pride in – a broad range of (subsistence) practices, between which they can flexibly shift, temporarily intensifying or turning one or the other into more important economic activities. Moreover, they remain curious to readjust their knowledge and practices or to learn new things and stay attentive to newly opening possibilities. This allows them to navigate amidst, harmonize with and adjust their practices to different temporalities and changing circumstances: seasonal changes and tides, and the particular affordances they

bring about, sometimes unexpected and abrupt changes relating for instance to "nature's transformations" (erosion, moving sand dunes, salinization), but also market developments, appearing and vanishing traders, price fluctuations or changes in technologies or environmental regulations. Indeed, some activities Seu Juzé had been doing became impossible or very difficult. The red saltwater shrimps he used to fish for in Canárias River, for example, decreased heavily due to big trawling ships operating close to the coast. Others, such as trading, he had dropped because of personal preferences, and still others, such as the cultivation of swidden fields, have become more complicated due to stricter environmental legislations.

Motors, ice, calendars and aging bodies

But also the practices themselves have been changing. With increased tourism in the region and faster transport, new "*saídas*" (exits) – that is, new trading and commercialization possibilities – for cashew nuts, fish and shrimps emerged, so that some of the former uniquely subsistence-oriented and occasional practices turned into important economic activities. Within specific "*tempos*" however practices often remain changing and flexible, varying for instance according to people's or families' needs. If a major expense, an emergency or a special event (e.g., disease, birthday, marriage, birth) is imminent, practices (e.g., gathering of cashew nuts, *murici* fruits and seashells, and catching of crabs) can be temporally intensified and more family members may participate (children, men).

The arrival of outboard engines (*rabetas*) from the 1990s onwards greatly improved and accelerated mobility and influenced transport, trading and fishing practices. By rowing, certain areas in the delta were reachable only "in two tides" – a pause had to be made in order to await the next high tide. Some older inhabitants remember with amazement the sensation they had when for the first time their canoe powered with an outboard engine "just passed across the tide," regardless of the direction of water flows. On some islands (e.g., Canárias island), terrestrial mobility accelerated with the spread of quads a couple of years before my fieldwork. These changes also came along with new skills and differentiated access. Some specialized as quad drivers, turning transport into their main source of income, others acquired special skills in repairing motors. Maurício's ability to cast net with a running motor, as pointed out earlier, was outstanding, granting him some advantages, and his curiosity and technical skills also turned him into a sought-after engine repairer. Women in Passarinho,

where at the time of my fieldwork no one could afford a quad, increasingly complained about women from neighboring villages, who encroached ever-further into their gathering areas in the forests due to accelerated transport by quads.

The arrival of electricity in Passarinho was another event that many remember as having caused big changes. Light, fridges, freezers, televisions and water pumps arrived in households one after the other, introducing new rhythms and interfering with older ones. The possibility of storing ice and freezing fish, for example, greatly influenced fishing and the possibilities of selling fresh fish. If before, fish had to be either sun-dried or salted, it could now be preserved on ice, and thanks to accelerated transport it could travel faster and further.

Moreover, practices related to commercialized products have been varying in relation to market developments and price fluctuations, and recently also stricter environmental rules have influenced some practices and their temporalities. For example, inside the RESEX, cultivators are less flexible in clearing swidden fields, because the cutting of certain tree species (e.g., cashew, carnauba palm) is forbidden and a series of administrative tasks is required to get authorization for cultivating fields. Only male crabs with a certain minimum diameter can be sold. During the *piracema* – the time of migration and reproduction of many fish – which occurs during the rainy season, there is a moratorium (*periodo de defesa;* approx. from November to February/March) and fishing is restricted to 5kg/person/day for self-consumption. Professional fishers – that is, those registered at the Fishermen's Colonies – should get compensation (*seguro de pesca*) in the form of a minimum wage. However, many delta inhabitants had not or had only irregularly received the compensation over the past three years. This was allegedly due to failures of the administrative system or invalid registrations, or, as most people suspected, to corruption. The fishing moratorium is of course based on calendar dates. The exact date may vary from year to year and is sometimes changed at the last minute, but it also happens, much to the annoyance of fishers, that it mismatches with the actual *piracema* period.

Other events and obligations are also based on calendar dates: school terms and holidays, for example, and pension and cash-transfer program (*bolsa familia*) payments. Similar to Seu Juzé, who has to pick up his salary, women who benefit from the bolsa familia and older people who receive a pension are given one personal appointment per month to collect their payments in the nearest town. If they arrive too late, their entitlement is cancelled. As described above, such rigid rhythms based on fixed calendar dates are most often incongruous with tidal fluctuations, with the *tempo* of particular things and other rhythmic phenomena, and

can hence limit people's flexibility or lead them to interrupt their practices.

People readjust their practices not only to changing environmental or socio-economic fluctuations but also in relation to their personal situations. Seu Severino, for example, in his early 80s the oldest inhabitant of Barrinha, went almost daily, and hence much more frequently than others, into the tidal waters in front of Barrinha to catch fish and shrimp with his gill net. While younger fishermen tried to adjust their activities more to the *tempos* when big shoals of certain species of fish or larger quantities of shrimps passed by, which allowed them to make good catches in a short time period but with intense work, Seu Severino relied rather on the regularity of a moderate fishing practice. He knew that his body was no longer capable of short-term, intense work anyway, so he decided to count on smaller but constant catches instead.

Seu Cicero, in his late seventies among the oldest inhabitants of Passarinho, started an interesting collaboration with his cows, when he realized that he could no longer walk as far into the *caatinga* forest as before to gather cashew nuts. He raised his cows freely (*na solta*) and had observed that they ate not only the cashew fruits, but also the hard shells surrounding the nuts. The cows did not chew the hard nutshell, but swallowed it whole. However, as they could not digest the nutshell, they spat it out again, usually at night. Seu Cicero had also observed that the cows would more likely return to sleep in the fenced area next to his house if he produced smoke that kept the mosquitos away. In metal pots or calabashes, he hence lit dried carnauba leaves or twigs, producing smoke to lure the cows to the enclosure, and in the morning, he only had to collect the nutshells the cows had eaten, carried back home and spat out. Before selling them, Seu Cicero still had to wash the nuts in "three waters" – that is, three times with water – to remove the smell the nutshells had taken on during their passage through the cow's stomach.

Learning with nature

If Seu Cicero actively started to work together with his cows to adjust to new conditions, others emphasized that they learned with and from nature and nonhumans. Seu Juzé's son, Marcelo, for instance, who at the time was the only one in Passarinho living almost exclusively from catching crabs he then sold to a trader from a neighboring village, explained to me:

"I learned with my father. Before, people here used to work more with crabs. I accompanied my father. I saw his work; I tied the crabs for him. He would throw the crabs to me and I would tie them, I would make the *cordas* (cords),[79] so by watching and doing I learned. I got used to it and then I was already working too, working alone."

Later in the conversation, however, he added: "We learn a lot from her [nature]. When I started here, I didn't know anything, I didn't know how to catch crabs, I didn't know how to fish. And living with (*convivendo*) nature, with people who know about nature, we learn to do what is in nature."

Although accompanying and observing his father had been important for Marcelo to learn about the practice of catching crabs, it had nevertheless not been sufficient. This, on one hand, related to the embodied and intimate aspects of *conhecimento* that I mentioned before. That is, part of the *conhecimento* that certain practices required, such as crab catching, could indeed not be transmitted through observation and explanations. One had to do, feel and be in "nature." Besides interacting with knowledgeable and skilled people, one also had to interact with nonhumans, or as Marcelo put it, "live with nature," to learn a practice. Marcelo similarly told me in this conversation – held in his home garden – that he could tell me about catching crabs, but that this was very different, that there were many things I could not really understand without accompanying him to the mangroves. In other words, without experiencing, engaging in activities and interacting with nature, it was impossible to learn those practices.

But Marcelo's explanation emphasized yet another point: he also had to continuously readjust what he had learned with his father. Not surprisingly, many things had changed and continued to transform. Large parts of the mangrove close to Marcelo's house, for example, had died; probably because the land had risen (*altiou)* but also because the substrate had become sandier, which neither mangroves nor crabs liked. But nonhumans had also adjusted much more directly to crab-catching practices. For instance, capuchin monkeys (*macaco prego*) had learned about the presence and movements of crab catchers. They always accompanied him, Marcelo said, and he had to watch out and keep his crab cords nearby to ensure that the monkeys did not steal them. And crabs had also learned about people's practices and adjusted to them, Marcelo said. While crab catchers used to catch most crabs by extending their arms into the burrows, these days the crabs have started digging ever deeper burrows. Marcelo and

[79] Crabs (*Ucides cordatus*) are sold in *cordas*. One *corda* is a bundle of 4 crabs, tied together with strings made of carnauba palm leaves.

the other crab catchers, in turn, adjusted by using the *cambito* (a hooked rod) to pull the crab out of its burrow. The crabs dug even deeper in response, and therefore crab catchers started using longer rods. When speaking about the crabs, Marcelo described them as clever and brave. This was not an exception. People often described nonhumans as smart, brave, or playfully interacting with them. Catching shrimp by hand often got more difficult on subsequent days because the "clever" shrimps quickly learned and adjusted to people's practices. And equally "smart" fish quickly learned how to steal fish from line-fishing hooks and often played with fishers.

Whereas I will further elaborate on some of these aspects, in particular on relations of "tricking" that involved humans and nonhumans in the next chapter, here I want to emphasize that for delta inhabitants, nonhumans are far from being passive participants in livelihood practices; rather, they actively learn and adjust in their turn. This illustrates once again that resonance is actively made and emerges out of an interplay with other human and nonhuman practices and temporalities. Rather than being one-sided, it implies mutual adjustments in which both humans and nonhumans actively take part.

Conclusion

In the deltaic landscape, seasonal and tidal variations bring about changing affordances, in the rhythm of which people shift between practices. Based on the example of so-called "*tempos* (time, but also weather) of particular things" that arise in relation to seasonal and tidal transformations, I have explored in this chapter how these annually or monthly recurrent happenings such as migrations and catching of fish, or ripening and harvesting of fruits, are not external, imposed frames of changes but rather emerge through people's attentiveness and attunements to the temporalities of other humans and nonhumans. I have thus argued that time has to be approached as embodied and lived rather than as metronome-like structure and have looked in this chapter on how time arises from relations between humans and nonhumans. In an environment that is characterised by open becoming and continuous transformations, *tempos* are important in rhythming everyday social life; it is indeed through their practices that people create a sense of constancy in an otherwise very fluctuating environment.

The observations in this chapter thus challenge some of the prominent strands of Western thought that have for a long time thought of landscape, the environment, and nature as more a matter of space than of time (e.g see Adam 1998). In the deltaic landscape time can neither be

taken for granted, reduced to clock time nor considered an inert container or natural flow (e.g see Bastian et al., 2020) and the separation of time into "time of social life" and "time of nature" does not make a lot of sense. Rather as Ingold (1993) suggests, on the Islands of the Parnaíba Delta, the temporal dimension should be integrated into understandings of landscape.

For the successful performance of most practices, the achievement of resonance, which Ingold defines as "rhythmic harmonization of mutual attention" (1993, 163), is crucial. I have pointed out that on the deltaic islands, resonance is a process one has to continually work on. In fishing and other practices, people attempt to coordinate with many other interweaving temporalities but struggles to attune are part and parcel of everyday life.

Creating resonance and attuning practices to the diverse intersecting temporalities, newly arriving rhythms, transforming *tempos* and changing circumstances not only require attentiveness and careful observation but also flexibility, curiosity and a broad range of diverse skills that can be readjusted and reattuned. According to delta inhabitants, it is important to "know a bit about everything" in order to live in the deltaic landscape. It is also in this way that what people refer to as *conhecimento* is understood: rather than a static, pre-formed set of knowledge and skills, *conhecimento* intimately relates to a place, is made by living and doing, and is constantly reassessed and reattuned to changing circumstances.

Chapter 5. Shrimp tide – *Maré de camarão*

Shrimp tide (I): Expecting a "good" tide

Seu Miguel bent over to starboard to comb the river water with his splayed fingers. "The water is still too clean," he said, while the wooden canoe powered by a *rabeta*, a 5.5-horsepower outboard engine, glided smoothly through the water. We had left the port of Água Doce – a small town on the Maranhense mainland – a couple of minutes before. Going against the rising tide, it would take us still a good hour to reach Barrinha Island. The canoe was heavily loaded. Ice-filled styrofoam boxes and 60-kilogram bags filled with *farinha* (manioc flour) and rice were piled up between the canoe's back thwarts. The gunwale was barely a hand-width above the water surface, but Seu Zé confidently steered the canoe along the mangrove forests. He knew from experience where snags were hiding just below the surface and where, despite the rising tide, sandbanks were dangerously high. Branches protruding from the river bottom could damage the engine if not detected in time, and running the canoe onto a sandbank would have disastrous consequences.

"This tide is going to be a good tide," Seu Miguel, who had visited town to look for fishermen to complete his shrimp-fishing team, had told me with joyful anticipation some hours before, while we were waiting in Água Doce's small port for Seu Zé's provisions to arrive. Both men were expecting a "good tide" (*maré boa*) to start in the next days. Good tides could occur during the spring tides at new or full moon, when the rise and fall of tidal levels were the greatest. During such tides, Barrinha similarly seemed to swell, for the number of people in the village sometimes almost doubled, as shrimp fishers from villages all along the mainland travelled to the island. From tomorrow onwards, they would hang up their hammocks between the wooden bars of the fishermen's huts at the edge of the beach or in one of the permanent inhabitants' backyards, setting up a temporary home for a period of seven days. The bags of *farinha* and rice, together with sugar and salt, as well as gasoline, diesel, tobacco and sugar-cane rum (*cachaça*), were part of the basic supplies Seu Zé advanced to "his" fishers during the shrimp-fishing period. In exchange, the fishers sold all the shrimps they caught exclusively to Seu Zé, their "boss". Nowadays the only shrimp buyer in Barrinha, he then ensured the marketing of the shrimps – either preserved with ice in styrofoam boxes, or sun-dried – in various cities of Maranhão and the neighboring State of Piauí. If the tide, despite

expectations, was a “bad tide” (*maré ruim*) at least the fishers’ basic needs were covered and they could pay back the resulting debt in the form of shrimps during the next tide. If on the other hand the tide was good, but Seu Zé faced difficulties in reselling all shrimps right away or if his buyers in the city delayed the payments, making it impossible for Seu Zé to pay the fishers in cash, the latter would similarly take the resulting credit to the next tide.

We had now made more than half of the journey to Barrinha. Night began to fall. Startled by the engine’s noise, a flock of scarlet ibis took flight. Red crabs stared at us from the muddy banks of the mangrove thickets only to disappear quickly into their holes some seconds later. In front of us, a mullet (*tainha*) jumped out of the water. The men’s eyes followed its movement and attentively scanned the water surface. Frightened shrimps popped up from the muddy river bottom, and with a strong impulse of their tail they propelled themselves over the water surface; blob, blob, and off they went. The movement of a rising school of fish made the water stir. The men pointed to it with excited anticipation, but I was unable to detect all of the quivering and shivering they indicated – wasn’t it just the wind churning the water’s surface? Attentiveness to, and observation of, various kinds of movements in and on the water – including that of fish, shrimps, birds, water currents, changes in water texture and color and also other fishers’ movements and their catches – I would learn during my fieldwork, were valuable in order to be able to anticipate the beginning of “good” tides and to locate good fishing spots for the coming days.

***

This chapter revolves around what Barrinhenses commonly call “shrimp tides” (*marés de camarão*), a phenomenon that comes to be through the coordinated movements of tides, red shrimps and fishers: during new and full moon, tidal flows are stronger, whirling up and carrying more suspended material; sensing with their whiskers that the turbidity of water increases, shrimps leave the deeper canals to feed on the mud off the islands’ beaches; in attempts to coordinate their movements with that of shrimps, fishers from various villages along the mainland follow shrimps to the islands, knowing that they can more easily catch them while they search for food at the muddy beaches.

This chapter builds in many ways on the insights from the previous chapter, adding further aspects to the reflection on rhythms and temporal coordination. In the ethnographic vignettes that run through the chapter, I describe successive days of a shrimp tide, each story picking up a different element that I then explore further. The stories, then, do not represent a particular

week of red shrimp fishing that occurred in exactly that way, but are rather a narrative I have constructed from the many shrimp tides that occurred during my stay in Barrinha to draw out what I consider to be essential dimensions of a shrimp tide.

Attempts to coordinate with tides and the movement of shrimps requires, besides attentiveness, skills to anticipate periods of shrimp tides, but also involves particular kinds of waiting until the fishing period begins. These are the first aspects I focus on. In contrast to situations when anticipation and waiting succeed, when fishers manage to align with other temporalities, in the next two stories situations I explore where things do not run that smoothly. People commonly explain these situations either as relating to fishers' greediness resulting in temporal misalignment or dissonance with movements, or in terms of *enganar* – which can be translated as "tricking" but can also mean to cheat or deliberately deceive. Both cases involve humans as well as nonhumans, including supernatural or enchanted beings. I continue by focusing more closely on Seu Zé's work as a shrimp trader and the particular system of exchange he and his shrimp fishers have established.

Gendered practices and *tempos*

Before delving into the coming and going of shrimp tides, it seems necessary to make some general observations on gender in fishing and other practices, and accordingly in specific *tempos*. Some *tempos* indeed appear to be gendered. Shrimp fishing is a strikingly male world, whereas home gardens (see chapter 6) are commonly managed by women, and in particular the gathering of cashew nuts and murici fruits is mostly a female practice (see chapter 4 & 6). However, divisions between genders appear not only in practices but also in relation to specific environments and particular techniques of a practice (e.g., fishing techniques).

Men are clearly more involved in fishing and more frequently identify as fishers (*pescadores*) – an identification that also relates to the fishing licence (*carteira de pescador*) most of them have. They fish in rivers, creeks and lakes in deep and open water as well as along beaches and in mangroves. They often fish in teams with nets and go to more distant places by canoe and *rabeta*. It is also common among men to go on fishing trips lasting several days, sleeping in simple fishermen's huts along the beaches. Men commonly fish for a variety of fish species, crustaceans such as red and white shrimps and mangrove crabs and oysters. While a

small part of their catches is for subsistence, a larger part is commonly commercialized.

On first sight women are less directly involved in fishing. None of the women I met primarly identified as a fisher (*pescadora*) – yet many secondarily added, and emphasized, "I also fish" (*também pesco*) or "I'm also a fisher" (*também sou pescadora*), and some women also had a fishing licence. If the situation is examined more closely, women did indeed appear to be involved in fishing in various ways; especially if shellfish gathering is included in fishing activites. Yet there are differences in environments, techniques, mobility and the amount of time dedicated to fishing. Women more often fish close to their villages at beaches, on sandbanks (croas) or nearby mangroves. They mostly catch fish with hand lines and catch or collect white shrimps, *sururu* and *marisco* shellfish, and *siri* crabs using their hands and feet. Some women also catch fish and white shrimps with gill nets (*caçoeira*), but mostly in teams together with a man. Seine fishing and red shrimp fishing by night are the only techniques that women do not directly carry out. Women often dedicate fewer consecutive hours to fishing, hence their catches are often smaller and used for subsistence, and their mobility is reduced compared to men. Reasons for this are certainly the many other tasks women carry out in particular in households and childcare. Moreover, women often do not have their own canoes and most do not know how to steer a *rabeta*.

Several authors have pointed out the "invisibility" or "invisibilization" of women in artisanal fishing in North and Northeast Brazil due to public policies but also in the accounts of many researchers (Alencar 1993; Motta-Maués 1999; Maneschy et al. 2012; Freitas Machado 2019). Maneschy et al. (2012) argue that women have always been involved in fishing, but their social identification and self-identification as fisherwomen is more recent. They note that only from the 2000s onwards has the academic production on women in fishing started to increase. This research has shown among other things the importance of women in generating complementary income on a continuous basis, contributing to the pluriactivity of fishing families, flexibly producing either for the household or the market. Alencar (1993) notes that the "gathering" activities of women and children at shores, on *croas* and mangroves is often devalorized and not perceived as "fishing," which is associated predominantly with the work of men, in groups, on the open water. Machado (2019) points out that in Matarandiba (State of Bahia), where she conducted her ethnography, women identify more as *marisqueiras* (shellfish gatherer) and men as *pescadores* (fishers). There is a difference in species that are collected, techniques used and environments engaged with between genders. Men commonly earn more and have more direct access to working tools. Machado (2019) shows that women

take on an important role not only as producers guaranteeing subsistence but also by continually recreating relations with tides and mangroves. Many women take their children with them when gathering shellfish, raising their children in contact with those environments. Even if boys do not continue shellfish-gathering activities later on, the experiences and knowledge transmitted by their mothers are considered important for their future involvement in fishing. Nevertheless, women remain largely invisible for instance because authorities do not differentiate between *marisqueiras* and *pescadores*, referring to men and women as *pescadores*, which has important repercussions on social policies, policies for dealing with risks, social security and access to money (Machado 2019).

The invisibility of women also extends to agriculture. The importance of *quintais*, the diverse agroforestery gardens, managed and cared for mostly by women (see chapter 6) is often neglected. Whereas the *roças*, the swidden fields worked by men, are considered as real spaces of production, *quintais* are dismissed as small help for the family subsistence (Quaresma 2015). Several authors have recently called attention to the importance of women's work in *quintais* to guarantee a diverse and continuous production of goods and services indispensable for family agriculture (Winklerprins & Souza 2005; Rosa et al. 2007; Quaresma 2015).

In general, on the islands of the Parnaíba Delta it is more difficult for women to directly earn money through their practices – one reason why cashew nuts and murici fruits are commonly referred to as "women's salary." In Barrinha the work of women as *catadores* (pickers) during shrimp tides and selling of the valuable white shrimp women catch by hand are other possibilities for women to earn cash. In Passarinho some women have started running small shops selling food or clothes or provide services such as cutting hair and making nails to earn some cash.

Despite these gendered practices, absolute exclusion or prohibition of one gender is rare; there is a certain flexibility in various situations. Men might temporarily gather cashew nuts and murici fruits or collect *marisco* and *sururu* more intensively in times when for example neither crab catching nor fishing are yielding much or if additional cash is needed (e.g., for celebrations; for travels; to buy medication). It also happens that white shrimps are abundant but can temporarily not be caught with nets because the meshes are too big; then it is likely that fishers will start catching white shrimps by hand together with women. Similarly, there are women who temporarily fish more with hand lines or gill nets, and some women have caught crabs in the past or worked in rice fields because they were experiencing need.

I will further explore women's role in creating continuity, in particular through practices of care for plants and home gardens (*quintais*), in the next chapter. However, it is also important to keep in mind women's crucial, but often invisible, contribution to guaranteeing the continuity of shrimp fishing, and thus their involvement in shrimp tides on which I focus in this chapter and which at first sight appear to involve mostly men. Women not only work as shrimp pickers (*catadores*) during shrimp tides, but they also help to organize and maintain networks of shrimp buyers, and take care of their families, households and gardens while shrimp fishers are absent, as well as looking after shrimp fishers who get sick or injured during shrimp tides.

Attentiveness and anticipation on the ever-becoming islands

Barrinhenses are generally decidedly reluctant to commit to fixed scheduling. "Here, there are no commitments" (*aqui não tem compromissos*), they enjoy saying, to praise their way of life and contrast it with life in the mainland's cities, full of fixed plans, schedules and obligations to follow. It is common also to live "according to water" (*por água*), that is, from one shrimp tide to the next, which for instance means that money earned during one tide is rarely saved longer than the beginning of the next tide (see also Chapter 7).

Fixed plans, schedules or forecasts indeed make little sense in the deltaic world of constant transformation and open becoming (see Chapter 1). Flexibility to respond to whatever opening possibility emerges, or to change plans if an opportunity dissolves, is essential. What prevails is a kind of anticipative waiting imbued with attentiveness. Anticipation and preparation do not replace continuous perceptual alertness, because what is expected remains merely one possibility among others. Indeed, following Nuttall (2010), in a world of constant movement and open becoming, what is important is not anticipation in terms of predictions, forecasts and scenarios, but rather anticipation as learning: "A way of orientation, exploration and possibility – a way of imagining, framing, and viewing the world … a way of finding one's way in and around an environment and in and around one's social and cultural worlds" (2010, 24). In this way, as Nuttall (2010) pointedly illustrates, anticipation may complement and broaden many of the discussions of adaptation. If adaptation revolves around responses to past or present phenomena, he argues, anticipation is about shaping an emerging future through agency, intentionality and creativity; it is also about imagination, envisioning possibilities and choice, and about being doubtful, uncertain and fearful. In Nuttall's words:

“Anticipation is also about perceiving the world, relating to it, moving around in it, making sense of it, thinking about what to expect from it, and what possibilities can be gained from it” (2010, 25). Focusing on anticipation therefore emphasizes that people not only follow, adapt and adjust to changes but that they also enact, form and co-create changes, and their futures. It is in this context that I portray the sometimes quite uncertain and abrupt transformations or volatile dynamics (cf. Krause 2017) of delta life as *movements*. This emphasizes not only their materially and spatially grounded temporalities, but also their trajectories, which *Barrinhenses* learn to observe and anticipate. As movements, volatile changes do not appear as the random and catastrophic transformations that casual observers may perceive in the delta, but as the directed and repeating, but never entirely predictable, way delta life evolves for its inhabitants.



Figure 14: Shrimp tide life - arriving and setting up a temporary home

Shrimp tide (II): Waiting for the water to get dirty

Seu Miguel looked up when I approached: "the water is still too clean," he announced, anticipating my question. It was almost eight o'clock in the morning when I met him in the knee-high tidal waters in front of Barrinha. Using the upper part of a sliced plastic bottle, he threw water on his canoe's thwarts, washing off the remnants of yesterday's night fishing. Shortly after our arrival in Barrinha, he had left with his fishing team for a first exploratory trip. These early explorations rarely yielded good catches, but were necessary to find out when exactly the actual shrimp tide began and whether a good or bad one could be anticipated. While the observation of the position of the moon allowed the arrival of spring tides to be calculated, not every spring tide was equally suitable for shrimp fishing and thus what Barrinhenses called a "good tide."

A good tide's waters are turbid. The turbidity of water results from sediments carried by stronger tidal currents from the river's and channels' mouths inwards, and from the interaction of tidal flows with mangroves. Mangroves flourish in areas periodically flooded by salty or brackish tidal waters. Their complex root systems, extending above and below the water surface, slow down currents and trap silt and sediments. As assemblages of plants, animals and microorganisms (Schaeffer-Novelli et al. 2000), mangroves harbor an incredible number of life forms: they provide protected nurseries, hideouts and rich feeding grounds for fish, shrimps, crabs, seashells, microbes and fungi, among other organisms. When the strong spring tides that flow deep into the mangroves retreat, they carry with them considerable quantities of suspended organic and inorganic material – mud, sediments, leaf litter, phytoplankton, algae, etc. – which turn the river's water into the muddy liquid that Seu Miguel and the other shrimp fishers eagerly awaited. Only when the water is dirty (*suja*) enough do the shrimps move from the deeper canals towards the "beaches" (*praias*), the muddy shores in the intertidal zone, amphibious transitions covered during high tide and exposed during low tide. There, the shrimps linger in the *engodo*, a squishy, soft kind of mud – the shrimps' favorite mud, according to the fishermen. It was this soft mud that Seu Miguel had looked for the previous evening when he had left with his team of four men for the exploratory fishing trip. At the beaches, equipped with headlamps, barefoot in hip-high water, he and the other men had dragged the *redinha* – a fine-meshed trawling net – over the muddy ground. "When the net touches the shrimps lingering in the mud, they jump up and get caught in the *redinha*'s fine meshes," Seu Miguel explained. Last night however, they had caught only one kilogram of shrimps, and Seu Miguel deduced that the water was still too clean, and the shrimps had

not moved to the beaches yet. Seu Miguel and the other shrimp fishers were still waiting for the water to get dirtier.

***

Anticipative waiting

It is precisely this kind of anticipative waiting, so characteristic of everyday island life, which characterizes the days preceding a shrimp tide. As Janeja and Bandak (2018, 1) argue, waiting is "a particular engagement in, and with, time," where what is hoped for, eagerly or anxiously anticipated, has not yet arrived. The fishers' waiting for the shrimp tide is neither a "doing nothing" nor a passive enduring, but rather a waiting full of preparation, perceptual alertness and anticipation. While provisions are made, teams organized and nets mended, the fishers' senses are constantly and intently focused on the water's texture, color and movement. Again and again, they check the water's turbidity, walk along Barrinha's beach to see if the first shrimps "jump," and consider whether it is worth making an exploratory fishing trip or not. While passive waiting is characterized by a certain confidence in, or in some cases indifference to, the outcome, active waiting differs in that it keeps the outcome or what is anticipated open and therefore "entails hope as generative of action" (Marcel 1967, 282 cited in Janeja and Bandak 2018, 3). It is the – often uncertain – interplay between such forms of waiting, the "in-between" modalities of waiting, that, according to Janeja and Bandak, opens up to what they call the politics and poetics of waiting. Waiting, they argue, is not only to be found in the absence of action but is often an "uncertain terrain" (2018, 16) full of tensions, where doubt and uncertainty coexist: "it is a form of becoming emergent in the very oscillations between doubting and hoping but also of suspending both" (2018, 5). The anticipative waiting before shrimp tides is such a kind of waiting full of tensions, of impatient lurking and eager expectations as well as, at times, undecidedness and doubt. Whereas all waiting is, to some degree, anticipative of something, I use this attribute here to emphasize how this is not a passive and empty period for delta inhabitants. On the one hand, anticipation addresses the rhythmicity of these processes, part of which is the suspense in people's waiting for a phenomenon's re-emergence in a new form (cf. You 1994). On the other hand, speaking of anticipation signals that this waiting does not entail fixed expectations, but rather people are clear that things may always turn out differently.

Even if everything points to a "good" tide, the tension remains until finally the first good catches are brought home. In Seu Miguel's words: "There are always tides with more and

tides with less shrimps. Sometimes it is the new moon tide (*maré de escuro*) that is better, sometimes the full moon tide (*maré de lua*). One can never know it with certainty in advance. Dirty water is an indication of a good tide but still never completely safe; ultimately, only good catches can confirm a good tide." Even if one knows the movements and habits of animals and tides, and even if one knows how to anticipate these movements (Nuttall 2010), ultimately the outcome remains open. However, this uncertain outcome is not to be confounded with overall negative feelings of doubt, uncertainty or even fatalism, but this same uncertainty of what is to come conveys feelings of enthusiasm and hope. Contrary to a closed perspective, which leaves little space for imagination, the uncertain outcomes of this world of constant becoming allow for actively imagining a range of possibilities. It is therefore not a "waiting *for*," where one is stuck, having little power, but a "waiting *on*," a waiting full of agency, where people are able to choose when to wait and when to act (Schwartz 1974 cited in Janeja and Bandak 2018, 21).



Figure 15: Shrimp tide life - checking the water and waiting for the water to get dirtier

Shrimp tide (III): Greediness

When I arrived at Dona Joana's home garden around 7 o'clock the next morning, a bunch of people had gathered around the table under the big cashew tree. Dona Joana was, although in different ways, as much involved in the local shrimp trading business as her husband Seu Zé. During shrimp tides, her home garden and kitchen were always full of a busy hustle and bustle. They became important places not only for buying provisions but also for gathering, exchanging information about the nightly fishing trips, gossiping and telling news from friends and relatives from the mainland. Moreover, if one of the fishers got ill, had to make a phone call or charge his headlamp or music box, it was most often Dona Joana's house he would be heading to.

I did not pick up much from the agitated chatters but could guess that people were talking about one of the fishers from the mainland, who had not come to Barrinha this tide. Dona Joana took me to her kitchen, and while offering me a cup of coffee and some freshly cooked salted red shrimps for breakfast, she started – as she often did – explaining what was going on. "They were talking about one of the shrimp fishers who regularly used to come here during shrimp tides," she told me. "During some of the last tides, he caught a lot of shrimp, around 150 to 300 kg per night," she continued. "But then he began to tell everyone that he would now only come to fish 3-4 nights; he said 'I am not a fisher who sieves water' (*não sou pescador que coa água*)." As I frowned, not really understanding the expression, Dona Jona explained that the fisher no longer wanted to fish during the first and last nights of a shrimp tide that commonly yielded poorer catches. He said that he did not want to go fishing to catch anything but water, that is, to return with an almost empty net. "So, he came 4 days, caught a lot and left," Dona Joana continued and added "but for some time now, he has been very badly off. It's a pity to see him. He didn't catch anything anymore; last time he couldn't even pay for his *farinha*. So, we told him that this was because of the things he had been doing and saying." More agitatedly, she added: "He didn't respect the owners, didn't respect the mother of water (*mãe d'água*) and was punished."

***



Figure 16: Shrimp tide life - abundant catches: fresh, cooked and sun-dried red shrimp

Dissonance and disrespect

In shrimp fishing, struggles and frictions are quite common. They can lead to a complete abandonment of fishing until the following shrimp tide or lead to bad catches that may result in what people commonly call "difficulties to come up for ones *farinha*" at the end of a fishing period, that is to pay back (in form of the value of fished shrimp) the consumed basic supplies (*farinha*, rice, salt, tobacco, gasoline, etc.) advanced by Seu Zé.

A common difficulty arises for instance from the shift of the tidal rhythm in relation to the clock-time rhythm. This is especially challenging in consecutive days of night fishing during shrimp tides. In relation to clock time, the tidal rhythm, or more specifically the rhythm of ebb-tides with which fishers leave, gets later each day by around 50 minutes. If on the first

day fishers leave in the early evening and return around midnight, with the passing of days, they leave progressively later at night and return to rest only in the early morning when the village is waking up. Their work rhythm thus becomes desynchronized with other rhythms of village life. The conflicts between these rhythms may become so severe that some fishers decide to give up fishing altogether for some days – that is, until a new cycle of shrimp fishing begins.

In the previous chapter, I have pointed out how crucial the "right timing" is, and that people's attempts to coordinate their own movement with other human and nonhuman temporalities may succeed or fail. Indeed, in shrimp fishing, and fishing in general, wrong or dissonant timing most often leads to bad catches that, moreover, require a lot of effort from fishers. This became especially clear to me during one of the occasional seine-fishing trips Seu Zé invited me to accompany. The seine net (*rede de lanço*), similar to the gill net used for fishing white shrimp, consists of a vertical netting wall with an upper floatline and a lower leadline. It is however much bigger and finer-meshed, catching a lot of by-catch. The men cast it in a circle and haul it with four men on each side from the beaches in hip-high water. As master (*mestre*), Seu Zé decided where and when to cast. After the trip, I wrote in my field notes:

> "The first cast completely failed; the huge net didn't catch a single fish. Discontent spread among the men. They complained that the water was too high; they put in a lot of work and effort to only very slowly haul the net towards the beach. Fortunately, the next casts were a bit better and uplifted the men's mood. Later, Seu Zé admitted, 'I cast the net too early, the tide was too high and we had to work against it. The first cast was very bad, because I was very greedy. I quickly wanted to fill the boat with fish. But this is not possible, the sea has an owner (*dono*). I didn't respect him and he showed me that.'"

Despite fishers' attentiveness, and their skills in anticipating and waiting for the right moment, they might indeed at times either get things wrong, or fail to adjust by moving too fast or too slow in relation to other temporalities. Such conflictual adjustments are, however, part and parcel of everyday life and not deviations from prevailingly harmonious situations. This resonates with the observations of Cloke and Jones (2001), who, in a critique of Ingolds' and associated authors' works on dwelling, argue that besides the more harmonious or hopeful forms, dwelling might also take bitter, tragic or contested forms. It also resonates with Krause's (2013, p. 42) work on the Kemi River, pointing out that "behind the resonances of life on the river there lies a host of frictions, conflicts and hardships." To avoid sketching an



Figure 17: Seine net fishing - wrong timing, the tide is too high

overall harmonious or even romantic picture of everyday island life, attention to conflicts and dissonances as integral to life indeed becomes crucial (see also Krause 2022).

Following Whitehouse (2017), dissonances then do not arise only in "modern" societies, because of their detachment from natural cycles (e.g. Harrison 2004b) but equally emerge in societies where subsistence activities and attendance to other-than-human temporalities are a crucial part of everyday life. Indeed, such ideas go back to a separation of social and natural cycles, explaining dissonances in terms of a rupture that could be said to exist in "modern" societies between an "outdoor" world of seasonal change and an "indoor" world of

chronological time (Whitehouse 2017). Opposing this perspective, Whitehouse (2017) argues that being outdoors and indoors are both forms of environmental relations bound up in a seasonal taskscape and thus a distinction between natural and social is irrelevant even in urbanised societies. He shows that, even if in modern societies such as Britain, relations might shift from a more bound-up "being with" to a "being alongside," where human and nonhuman doings are not directly shared and co-responsive, yet they are still part of the same shared world rather than two separate cycles. Regardless of the society, relations and cohabitation with non-humans might at times be characterized by an "uneasy being with" (Whitehouse 2017).

Besides allowing for a smooth fishing process, the above examples point to yet another aspect of the importance of the right timing, and to a set of relationalities that fishers talk much less about when things run smoothly: a successful adjustment to other-than-human temporalities (e.g., tidal flows, movements of shrimp or fish) is also a way of showing respect to enchanted or supernatural beings.

People consider all sorts of environments as domains of "owners" (*donos*), supernatural or enchanted beings that take care (*cuidar*) of their respective environments and all beings living there and that mediate people's relations with those environments. Especially in works on Amazonian *ribeirinhos*, there is an abundance of references to beings with similar characteristics (e.g. Galvão 1976; Tiphagne 2005; Wawzyniak 2012). Wawzyniak (2012), for instance, shows that river dwellers from Pará conceive of the world as transformational, populated by a plurality of human and nonhuman agents who transform under certain circumstances one into the other. Delta inhabitants frequently told me that "everything has an owner" (*tudo tem dono*). Their accounts most often related to the owners of watery environments (rivers, creeks, lakes, sea), who are variously called the "mother of water" (*mãe d'água*), the "mermaid" (*sereia*), or Yemanjá,[80] as well as the "owner of the sea" (*dono do mar*) or "owner of fish" (*dono do peixe*). It is common for fishers to ask for permission and protection before entering the river or sea and from time to time to offer tobacco or sugar-cane rum (*cachaça*) to the owners, most often to the "mother of water" or the "owner of the sea," as far as I witnessed.

These enchanted beings are not evil, but they protect their spaces, they decide whether to give fish or not, and they might interfere if people do not treat them with respect. Dissonance or

[80] In Afro-Brazilian religions (Candomblé, Umbanda) Yemanjá is the Orixá (Goddess) of water (ocean, river, lakes).

incorrect timing is one such form of disrespect, and as the examples above illustrate, this commonly relates to fishers' greediness (*ganância*). Seu Zé indeed accelerated his movements creating a dissonance with tidal flows because he wanted to catch a lot of fish. The fisher from the story that opened this section boasted about his catches and purposely disrupted the seven-days shrimp fishing cycle. Both fishers, albeit in different ways, disrespected more-than-human temporalities, which did not please the owners that therefore punished them by giving them few fish and shrimps. In this sense, attentiveness and the skills required to anticipate as well as to wait for the right timing are also essential for fishers to cultivate good and respectful relationships with enchanted beings.

Generally, relations with enchanted beings remained tacit in everyday conversations. Fishers explained that they asked for permission and from time to time made offerings, and sometimes mentioned strange or mysterious appearances they had encountered during fishing, but most often they immediately added that one should not talk too much about these things. It was hence through narratives of struggles and conflictual adjustments that I learned most about these relations. In this sense, attention to moments where things do not run smoothly may be fruitful in that it reveals aspects of more-than-human relations that would not come up by focusing merely on situations of harmonious resonance.

Shrimp tide (IV): Being tricked

Two days later. The typical smell of raw fish hung in the air of the *barracão* – the central hut – in the early morning. It was one of the few traces still hinting at the nightly hustle and bustle. The *barracão* is the nodal point through which all shrimps fished in Barrinha pass before they embark with Seu Zé on his journeys to different buyers all over the region. It is where catches are meticulously weighed and numbers of kilograms noted, where smaller shrimps are separated from bigger ones. From her kitchen just next to the central hut, Dona Joana signaled me to come over. "The first fishers came back around midnight," she told me as I entered her kitchen. For this tide, she worked with some other women as a *catadora* – shrimp picker. Their work started with the arrival of the first fishers; depending on the catch sizes, it took the women three, four, or even five hours to sort out the shrimps. "The waters are good," she continued, while pouring freshly brewed coffee into my cup, "they caught around 100 kilograms, with only three teams fishing. That's good for the first night." She went on with a detailed account of the amount each team fished. This information would

spread in no time throughout the village and perhaps beyond. In the next few days, it would definitely be the favorite subject of conversation. "Only Seu Adriano's team is not coming this tide," Dona Joana continued after a pause, pointing to one of the empty wooden huts at the beachside. A little surprised, I asked why he would miss one of the "good" tides. Having fished for more than forty years in the waters around Barrinha, Seu Adriano was certainly one of the most experienced fishers, regularly coming for shrimp tides from his village on the Maranhense mainland, sometimes with up to sixteen men. "As the last two tides were bad, he thought that this one would have few shrimps too," Dona Joana responded to my question, "here you have it, this time Seu Adriano got it wrong, he was tricked!"

***

Enganar – Tricking, cheating, deceiving

So far, I have pointed to the anticipative and attentive waiting so characteristic of everyday delta life. Seu Adriano's example, however, shows that people do not spend all the time in such a state of perceptual alertness, ready to jump to take advantage of whatever possibility may be coming. Sometimes, they are annoyed and tired of waiting and checking and instead try to deduce patterns of what is to come. In this way, after having come to Barrinha twice, only to find a bad tide, Seu Adriano was rather sure that the coming tide would be bad, too. If something happens repetitively, people are likely to start to convert their observations into predictions, neglecting the continuous transformations and the fact that things could (abruptly) change. At other times, in spite of continuous observations and attentiveness, even experienced people interpreted things the wrong way or came to the wrong conclusion. It is in these situations that what people call "tricking" comes in.

Tricking (*enganar*) is indeed very common in everyday life and relations on the deltaic islands, and transcends boundaries of human and nonhuman worlds: fishers trick other fishers by spreading false information, trees trick people by pretending to produce nice, big fruits when actually they provide none, and the sea might trick people by arriving at a different time than expected. The way that tricking is understood locally comes close to "pretending something but doing it differently." When someone is tricked, it is usually either because the person was not attentive enough or relied too much on past observations. Tricking emphasizes the dimension of openness of movements and becoming (see chapter 1), and at the same time illustrates that these aspects are not restricted to the nonhuman environment but deeply

permeate all kinds of relationships on the deltaic islands. Tricking might be a reminder that one can never really rely on the anticipated. It might even turn into a sort of game, a playing with each other's observations and attentiveness, continually reintroducing uncertainty and openness into relationships.

A second short example of a line-fishing trip should make things clearer. The incident



Figure 18: Shrimp tide life - catadores sorting and sieving shrimps

happened a few weeks after the shrimp tide that tricked Seu Adriano and helped me to better understand the various aspects of tricking, and its role in everyday life. One morning in mid-June, Maurício invited me to go line fishing with his younger brother and their aunt who was visiting. Just before leaving, Seu Severino, an older and experienced fisherman, came by and indicated a good fishing spot to us. Maurício, in spite of being much younger (twenty-nine years), was respected and considered a good fisherman in the village, and of course had his preferred fishing spots, too, but this time he decided to check out the spots indicated by Seu Severino. It turned out that the spot was no good for line fishing, so that we continued on to Maurício's preferred spots, but because of the detour we arrived there quite late, when the tidal flow was already pushing too much.

In the end, Maurício was convinced that Seu Severino had intentionally directed us to the wrong spot, that he had tricked us. Shortly after we came back to the village, Seu Severino passed by to ask how much we had fished. I first expected that Maurício would react angrily or accuse him of having tricked us. Contrary to my expectation, Maurício however thanked Seu Severino for the indication and greatly exaggerated the amount we had caught. Knowing that later in the evening Seu Severino would visit a couple of other fishers, who were planning to go line fishing the day after, Maurício continued playing the game. Indeed, the next day these other fishers went to the same bad fishing spot that we had; Seu Severino had spread the information as anticipated by Maurício, who of course was amused that his trick had worked out.

It was common among fishers in Barrinha to trick each other, for instance by playing on the quick spreading of information or, during fishing, by pretending to be making poor catches in good spots. Usually, the aim was to keep other fishers out of preferred fishing spots. As the incident with Maurício shows well, it was part of everyday life to trick and be tricked; rather than getting angry, people usually continued the game and tricked someone else in turn. Tricking worked best in a context of uncertainties, as a person never knew for sure whether she was tricked or not and whether a trick was intentional. Maurício in this way did not know for sure if Seu Severino really tricked him – was it intentional or a coincidence? He assumeed that he was tricked, and the continuation or counter-trick only worked because Seu Severino too could not know if his trick – if it was a trick – had worked. Similarly, Maurício was amused that Seu Severino spread his false information but the wide range of possibilities made it impossible for him to know beforehand if his trick would work – that is, if these people were going to make bad catches, too. Tricking in this sense is similar to stumbling: one only notices that one has stumbled after or during the stumbling; the same goes for tricking – you cannot know beforehand that you are going to be tricked.

Tricking requires not only agency, but also intentionality. In the deltaic world, such characteristics are not limited to human beings. As I pointed out in the previous chapter, nonhumans are often described as smart or brave, and they sometimes play with people. Plants are “living beings as we are” that, for example, sleep and appreciate it if one takes care of them. Some cashew trees that pretend to make good fruits when actually they provide none are described as “liars.” Animals, plants as well as enchanted beings are indeed considered as beings endowed with power, agency and intentionality and, as Seu Adriano’s example illustrates, they might also at times trick people. Tricking, in the deltaic world, is one way

among others of relating to other beings, transcending boundaries between human and nonhuman – including spirit – worlds.

The word *enganar* translates not only as tricking, but also as cheating or deceiving. Depending on the context, tricking, which is a playful rather than harmful interaction, easily slips into negative feelings of being cheated or deliberately deceived. This is the case, on the one hand, when too much alcohol or drugs are involved. For instance, crack, one of the most addictive forms of cocaine, has recently become available on the island and has turned into a serious problem, especially for some of the younger fishermen, who are rapidly drawn into vicious cycles. To get money and satisfy crack cravings, it thus happens that dishonest cheating gets out of hand and eventually leads to mistrust between inhabitants. On the other hand, feelings of deception are mostly apparent in uneven relationships to more powerful outside actors, including local politicians, ICMBio and Fishermen's Colonies. As described before, delta inhabitants have abundant experience of repeatedly unfulfilled promises and unfinished projects, or of outsiders coming for lunch and leaving without paying. Therefore, distrust is dominant in these relationships and *enganar* is no longer considered as a reciprocal, playful interaction. Instead, delta inhabitants feel that these actors abuse their power and always want to deliberately deceive the "poor" and less powerful people (*eles só querem enganar nós pobres*) (see Chapter 3).

Interestingly, if tricking leads to stumbling, it also brings about continuity. This happens, on the one hand, through the systematic continuation of tricking: if people are tricked, they will not wait long to trick someone else. On the other hand, continuity emerges from extending tricking relationships to the most varied spheres. On the sandy islands, not only seasonal and tidal movements, but also all sorts of relationships are characterized by an openness of becoming and therefore require the same attentiveness and flexibility. Tricking constantly reminds people that becoming is not fixed, be it the becoming of environmental fluctuations or of relationships – between humans as much as between humans and nonhumans. What is seen, observed or heard is only one possibility among others; what people expect based on their observations might happen, but they might also have been in the process of being tricked.

Shrimp tide (V): Chasing after money

Most fishers were satisfied with the catches of the previous nights, they continued to consider this shrimp tide a "good tide." The expectation of good catches kept them motivated to fish on this seventh night in a row, when they would only leave around 11 pm and, depending on the catch sizes, would not return before around 5 am. During the day, fishers cleaned their canoes and nets, bought some additional supplies from Seu Zé if necessary, met with other villagers, cooked simple meals in pots on the fire or grilled some fish, sat around the fishermen's huts to chat, and above all spent large parts of the day swinging and relaxing in their hammocks to gather their strength for the night fishing. Fishers reduced their daily activities, and mainly attended to tasks geared towards night fishing; during good tides, the overall atmosphere was usually peaceful and relaxed.

When I strolled through Barrinha in the early afternoon, however, a visibly upset and annoyed group of younger fishermen were about to leave the *barracão*. I continued on my way and encountered Seu Severino at the beach. After some chatting, he began to comment on the reasons for the discontent of some of the shrimp fishers. He said that it was not because the tide was bad; they were not annoyed because they had made bad catches. "At the moment," he explained, "there is another difficulty. There is shrimp but there is no money." The group of younger fishermen had decided to stop fishing for this cycle; they had made enough catches, and they planned to go to the mainland town that night. As usual, on the day after their last night of fishing, they had met with Seu Zé in the *barracão* to calculate and receive in cash the difference between their total amount of catches and their expenses. However, this tide, Seu Zé had difficulties to pay his fishers the whole amount in cash because some of his buyers had delayed the payments. This of course annoyed the younger fishers, who needed money for their trip to the mainland town. The day before, Seu Zé had gone to Parnaíba to "chase after money" (*ir atrás de dinheiro*). One of his buyers owed him 3,000 R$. However, at the moment there was a lot of shrimp arriving at the local markets. The fishers in Barrinha, moreover, had fished mostly small shrimps, which were not very appreciated. Seu Zé's buyers asked for bigger shrimps. The buyer owing money to Seu Zé had not managed to sell the shrimp and hence could not pay Seu Zé either. To the annoyance of some fishers, Seu Zé returned with empty hands; new negotiations on cash payments had to be made between Seu Zé and his fishers.

***

Aviamento, absence of money and mutual obligations

Such an absence of money was not an uncommon situation. It happened quite frequently that Seu Zé had to go to the mainland to "chase after money," as he put it. The problem related both to the long chain of buyers and the fact that Seu Zé sold at least part of the shrimp to his buyers on credit. Most of them however in their turn sold on credit to the next buyer in the chain. Because of the high number of intermediate buyers, it could take a long time for the money to come back to Seu Zé and his fishers. Moreover, some of the buyers – commonly the wealthier ones who could afford it – immediately invested part of the money they gained from selling the shrimps, which further delayed the reimbursement in the chain. "That's really bad for us," Dona Joana remarked in this regard; "the rich only want to trample on us, the poor."

However not all of the fishers got annoyed when cash was temporarily unavailable. Often, the system of exchange Seu Zé and his fishers had agreed on could absorb the problem of unavailable money. As outlined throughout this chapter, Seu Zé advanced supplies on credit to the fishers during a fishing cycle. Aditionally, he had established and maintained some basic infrastructure: a generator to produce electricity and to pump up groundwater, and a network of buried plastic tubes to distribute water to households and fishing huts. Fishers who availed of the supplies on credit and the infrastructure, in their turn, obliged themselves to sell the fished shrimps exclusively to Seu Zé. With many of the fishers, Seu Zé had a long-standing relationship. Some had been coming for thirty or forty years to Barrinha to fish – one reason why Seu Zé and Dona Joana affectionately called them "our" fishers. If Seu Zé could not pay the whole amount to one of these fishers, he would either pay them the rest during the following tide, or travel to their homes to pay them as soon as the money arrived. The fishers accepted this because they knew that in case they, on their part, made really bad catches, Seu Zé would still provide them with basic supplies for the fishing cycle and they could equally pay the debt from their expenses back to him during the following shrimp tide.

Other fishers, however, got annoyed when they were paid with a delay. Most of them came more irregularly to Barrinha. Many were younger men without families to take care of, and some led a rather erratic or opportunistic way of life. They worked some months here, some months there, spent some time in town or in cities further away, and occasionally came to fish in Barrinha – in periods of unemployment, for example, when no other opportunity popped up, or when a "good" shrimp tide was expected. They were therefore less dependent on the guaranteed provisions Seu Zé provided during bad tides and in turn also demanded their money in cash at the end of a fishing cycle.

The system of exchange between Seu Zé and his fishers bears many similarities with the *aviamento* system widespread in the Amazon. *Aviamento* derives from the Portuguese verb *aviar* meaning both "to prepare" or "to dispatch." As Furuie (2020) points out, the credit relations and debts characteristic of the *aviamento* system – even though they preceded the 19th-century rubber boom – were nevertheless crucial to maintaining rubber extraction and hence proliferated during this period throughout the Amazon. The credit relations used to be established between a *patrão* ("patron" or owner of rubber estate), who supplied food, clothes, ammunition, and other goods throughout the year and the *freguês* ("client" or rubber producer) who paid him back in rubber at the end of the harvest (Furuie 2020). Current exchange relations in the region, for instance those Furuie (2020) studied on the Iriri River, still follow the same basic principles: river traders (*regatões*) supply the goods they transport to the villages along the river on credit and are repaid in Brazil nuts, fish, cocoa, gold, and other commodities. Nevertheless, as Furuie (2020) convincingly shows, the *aviamento* system between river traders and river dwellers should not be understood only in terms of asymmetric relations of exploitation and dependency; nor does it simply consists of trading relations. It is better approached in terms of a moral economy (e.g., Thompson 1971; Carrier 2018 in Furuie 2020). Indeed, Furuie (2020) describes the complex web of mutual obligations and demands that emerges from the seemingly straightforward exchange and that makes river traders and river dwellers interdependent. For example, besides providing supplies, river traders take on important roles of mediators between riverside communities and the outside world (e.g., urban centers of power), this ranges from securing people's rights and welfare to making loans in case of an emergency (e.g., disease, hospital stay) to representing people's interests among local politicians. In those relationships, the establishment of trust and the meeting of moral expectations is crucial and therefore also central for maintaining the circulation of goods (Furuie 2020).

While many of these observations are also true for the exchange system in Barrinha, there are also some differences. The distance to the nearest mainland town is relatively short compared to the journeys of several hours or even several days that resident along many Amazonian rivers have to undertake to reach urban centers. Island inhabitants themselves regularly travel to the mainland for shopping and to resolve administrative issues, for example, and therefore the dependency on traders for supplies and purchases is less important. Furthermore, the cycle of a shrimp tide is much shorter than seasonal harvests. It does sometimes happen that successive shrimp tides are "bad" – that is, yielding poor catches – but such situations are

rarely long-lasting, so that fishers generally do not get indebted for longer periods of time.[81] While fishers' dependency in this sense is weak, on the other hand their choice of traders has decreased considerably in recent years, which some fishers considered a disadvantage, for instance in negotiations of shrimp prices.

Maybe the most substantial difference, however, is that Seu Zé and his family were not outsiders but have lived most of their lives on Barrinha Island. Even tough shrimp fishers in some situations referred to Seu Zé as *patrão*; he was still considered a member of the village community. He was neither much wealthier, nor more powerful than his fellow villagers, and, especially in the periods between shrimp tides, he engaged in the same activities as them; he frequently went mullet fishing or line fishing, for example. This had several implications. It meant, for example, that shrimp fishers could not directly rely on Seu Zé in case of emergencies requiring bigger loans, and that he did not primarily assume a position as mediator or link to more powerful outside/urban actors that would enable him to resolve problems and bring benefits (*benefícios*) or welfare and social assistance projects (*projetos*) into the community, as some of the riverine communities in the Amazon did. But it also meant that Seu Zé and his family had an affectionate and intimate relationship not only with many fishers but also with Barrinha and the island's way of life.

Seu Zé repeatedly talked about his strong bond to Barrinha, which he considered a special place, where he lived out of choice. And this close relationship also led him in some situations to stand up and fight for the villagers, and for shrimp fishers' interests, needs and rights. In this sense, Seu Zé occasionally took on a role as "community leader" or mediator. For example, when he filed a suit against the alleged landowner who wanted to expel villagers, or when he negotiated the use of fishing nets and techniques with the administration of the environmental protection areas. Dona Joana, in her turn, had managed to get funds for a literacy project allowing her to teach reading and writing to fellow adult villagers. She also cultivated relationships with an evangelical mission (MEAP), not because she wanted to convert people but rather because they could provide assistance in some cases. The five-thousand-liter water tank from which water was distributed to most households had been

[81] This is different for instance in the case of carnauba powder extraction. Recently, some men in Passarinho have started engaging in a similar *aviamento* system with carnauba traders from the mainland. The palm leaves have to be dried (spread on the ground) to extract the powder, which is possible only during the dry season. Traders provide the men with the machines needed to shred the leaves and with basic supplies on credit during a six-month period, and are payed back in powder at the end of the dry season. I did not work closely on this topic, but the few accounts I heard on this type of work and the relationship with traders from outside differed considerably from that of shrimp fishers in Barrinha, particularly in that they reflected feelings of dependency and exploitation (e.g., in relation to prices of powder and supplies on credit) (See also Chapter 2).

donated by one of the evangelical pastors, and they had guaranteed to her that in case of a medical emergency they would come with their speedboat from Parnaíba to transport sick persons to the hospital. This additional provision in the form of mediation and advocacy for villagers' needs, although perhaps not originally requested directly by the fishers, is still central for maintaining and fostering the close relationship and trust between Seu Zé and his fishers, the continuation of villagers on the island, the regular return of mainland fishers and valuable protection from some more recent threats (e.g. tourism investor, privatization of islands), and thus essentially contributes not only to the continuation of the shrimp trade, but also to the village itself.

Oscillating prices and risky journeys

Besides the absence of money, the volatility of shrimp prices was another major difficulty of the trading business, Seu Zé pointed out. The price of shrimps fluctuated seasonally, but also in relation to holiday times and particular events, and in relation to the catches of big trawling ships: around easter (*semana santa*) prices commonly rose due to increased demands; in summer strong winds made it more difficult to fish the shrimps, and prices were higher because fewer were available on the market; in winter shrimps were abundant, but they were smaller and had less value; big trawling ships sold their shrimps more cheaply, so when they made good catches, prices immediately dropped. In spite of a certain regularity, these price fluctuations were often difficult to know in advance. "The price of shrimps varies a lot and when it drops, it drops a lot, it drops suddenly," Dona Joana for instance explained. Yet Seu Zé of course had to indicate the price at which he would buy the shrimps from his fishers at the beginning of a shrimp tide and therefore in cases when the price dropped until he resold the shrimps, he had to pay the difference from his own pocket. Also, if the demand of his buyers decreased in relation to the amount of fished shrimps, he had to either quickly find new buyers or tell his fishers to stop catching shrimps, which of course annoyed them.

Besides establishing trust and fulfilling obligations towards shrimp fishers, Seu Zé also had to build up and maintain networks and good relationships with his buyers. The negotiations and relationships with buyers were often asymmetric – many were richer and more powerful – and hence could be risky. As the delta inhabitants often pointed out, richer people liked to trick (*enganar*) poorer ones. Seu Zé had to be very careful with whom to engage in commercial relations. This form of tricking, as mentioned before, went beyond a playful interaction and

towards the intention to deliberately cheat. It could be relatively harmless, for example if a buyer did not respect verbal sales contracts or refused to pay back borrowed money, but it could also have more serious consequences. Shrimps are a valuable commodity, and Seu Zé mostly travelled alone by bus to resell them. He was hence a relatively easy target. Although delta inhabitants commonly described the rural northeast as somewhat less *brabo* – wild, harsh and barbaric – compared to past times (*antigamente*), it was, for instance, still a fairly common practice to pay an – often rather affordable – *pistoleiro* (gunman) to resolve a problem. Before entering into a trading relationship, Seu Zé hence carefully studied and checked out the potential buyer, which as he explained required a lot of *conhecimento* about people. I encountered Seu Zé as a funny and playful person who liked to make jokes and took particular pleasure in misleading or confusing other people. This was not meant maliciously, but rather appeared to me as a constant exploring of people and hence practicing of skills valuable to his shrimp-trading business.

Seu Zé had learned and taken over the shrimp-trading business from his father and continued working with some of the same buyers and fishers. But he had also adjusted to new circumstances, had dropped some of the networks and established others. For instance, he ceased to trade with buyers in Bahia much further down the coast. Although he still liked to narrate the adventurous journeys, he had gone there by bus to resell the shrimp, constantly watching out and with a knife in his trousers – just in case; and he had dropped those networks not least because they were logistically complicated and particularly risky. Accelerated transport due to the arrival of outboard engines, together with the generator producing electricity, allowed for new trading possibilities. Before, Seu Zé and his father had sold larger amounts of the so-called “beaten shrimp” (*camarão batido*). This type of shrimp is first cooked, then sun-dried, put in a bag and beaten on a stone to lose the head and tail and finally sieved to separate head and tail from the body. The price of “beaten shrimp” was good and it could be preserved longer; however, besides being rather laborious, part of the shrimps was lost, for to produce 1kg of this type of dried shrimp required 5kg of fresh shrimps.

During the last years, the amount of fresh shrimp preserved on ice that Seu Zé traded had steadily grown. Although at the time of my fieldwork Barrinha was one of the last deltaic villages still using a generator, it had for a long time been ahead of others in using electricity, and Seu Zé’s father was considered a pioneer when in the late 1980s he brought a generator to



Figure 19: Shrimp tide life - fetching ice at the ice factory

a deltaic island. According to the rhythm of shrimp tides and the amount of catches, Seu Zé undertook two-hour boat rides to the ice factory in Tutóia to fetch ice that he transported back in big styrofoam boxes and then stored in freezers running from dawn to the last telenovela (around 11pm). Despite the relatively short time frame during which electricity was available, the combination of accelerated transport (outboard engines) and the slowing down or "dormancy" (Gan 2017) created by freezing allowed him to trade larger quantities of shrimps preserved on ice – especially of the bigger white shrimps.

Altogether these factors led Seu Zé to speak about the practice of trading with shrimps as requiring a lot of differentiated *conhecimento* (knowledge and practical skills)[82] – to anticipate "good tides," to negotiate and establish relations of trust with fishers as well as buyers, to mitigate volatile prices, to avoid getting cheated by buyers and much more. Maybe this was a reason why he was the only remaining shrimp trader in Barrinha at that time.

[82] See also Chapter 4

Shrimp tide (IV): Moving on

Last night was the seventh consecutive night of shrimp fishing. Tonight, if they still have the strength, some of the shrimp fishers living – more or less permanently – on the island will probably return for a last fishing trip. Most of the shrimp fishers from the mainland, however, already left Barrinha in the early morning, returning to their homes and families. The morning air is thus filled with an unfamiliar calm, contrasting remarkably with the bustle of the last days. No more hammocks in the backyards, no queue for filling plastic bins with water, no loud songs resonating through the wooden poles of the fisher huts. With the expectation of dirty waters just over a week ago, Barrinha, one could say, literally swelled with busy preparations, net repairing, team building, with fishers' arrivals, meeting and socializing, with the shrimps arriving, with excitement, eager anticipation and lively chatter. Now, a week later, as the dirty waters become clearer and shrimps start moving on, followed by fishers and other villagers, seizing the quiet days to visit or get things sorted in town, Barrinha shrinks again, calms down and takes a moment to rest, only to swell again with the next shrimp tide. It is as if the village breathes – inhales and exhales – with the rhythm of shrimp tides.

***

Conclusion

In this chapter, I have argued that observation and attentiveness as well as flexibility in order to take advantage of opening possibilities are crucial for everyday life on the deltaic islands where movements are ever-present and characterized by open becoming. If observation of various movements allows anticipation and preparation for upcoming events, these are never really sure to happen; they constitute only one possibility among others. This leads to a kind of waiting that is both anticipative and attentive. People do wait for something to come, but whether it is going to arrive, and if so when exactly, remain open.

I have further pointed out that despite delta inhabitants' skills, knowledge, continuous observation, attentiveness and anticipation, getting it wrong and failing to adjust to movements, too, is part of everyday life on the deltaic islands. One common reason for temporal misalignment or dissonance with movements is greediness. Greediness often results in an acceleration of one's movements and constitutes, from a delta inhabitants' perspective, a disrespect of supernatural or enchanted beings, who, consequently, punish by giving few

shrimps or fish. In other cases, difficulties are explained in terms of *enganar*, which means to trick, but can also take on meanings of cheating or deliberately deceiving, and involves human as well as nonhuman beings.

Further exploring relations of tricking, I have elucidated that the particular kinds of open movements permeate all sorts of relationships between people as well as between humans and nonhumans. Tricking emphasizes that not only do environmental fluctuations follow a becoming that is not definitive, but so also are all relationships based on similar dynamics, and therefore people need to remain attentive, never knowing whether a trick is being played.

I have described everyday life in Barrinha as unfolding in the rhythms of shrimp tides, which confers to this place a particular dynamic, a sort of "breathing" or "pulse." This pulse should not be understood as fixed and eternal, happening always in the same ways. Rather, shrimp tides can be thought of as what Tsing (2015, 24) refers to as "polyphonic assemblages" – that is, the gathering of temporal rhythms of divergent lifeways (e.g, fishermen, shrimps, tides, mangroves, shrimp buyers). These lifeways, be they human or nonhuman, as Tsing (2015) points out, shift historically, and assemblages coalesce, change and dissolve. For fishermen, for example, it is getting more and more difficult to catch shrimps, both because of increased numbers of big shrimp-trawling ships, which drag their huge nets over the seabed in front of the coast, depleting the stocks, and also because of a change in their own fishing techniques. The *redinha* nets used nowadays are much bigger, with finer meshes, catching smaller shrimps without allowing them to grow up and reproduce. Also, oscillating market prices, the availability of shrimp buyers and the work of the local shrimp trader exert a crucial influence. Relations of exchange between Seu Zé and shrimp fishers, I have pointed out, go beyond cash transfers; trust and mutual obligations equally play an important role. In the face of recent threats, Seu Zé's mediation with outsiders and advocacy of villagers' needs has been central to the continuation of shrimp fishing, shrimp trade and the continued presence of villagers on the island.

Moreover, stricter environmental regulations also affect shrimp tides. The *redinha* net is already forbidden in the area of the extractive reserve in the delta, and the protected area administration currently tolerates it in Barrinha only because of Seu Zé's successful negotiations. Finally, similar to what I have observed for *tempos* (chapter 4), there can be no "shrimp tide" without the fishers' anticipation, preparations, and actual fishing, even if shrimps are plentiful. For instance, one week in June 2018 when the Brazilian National Team was playing at the World Cup, many fishers decided not to travel to Barrinha although

considerable amounts of shrimps were appearing at the island's beaches. Therefore, shrimp tides, *tempos* and other rhythmic phenomena come about in relation not only to tides and other environmental fluctuations but also in relation to social and economic dynamics such as festivities, football games, and price fluctuations. In this way, the assemblages through which shrimp tides come into being are only a temporary coming together, responding always also to worlds outside the deltaic area, to a larger economic and political context.

III. Refuge

Chapter 6. Caring, raising and growing – *Cuidar e criar*

"So nice! Now I won't forget you," Dona Joana cheerfully exclaimed when I gave her the small rosemary bush I had brought from the market in Parnaíba. I had known before about her special and affective relationship with plants. She had often taken me on walks through her home garden to show me her plants as if she was introducing me in person to these green, flourishing garden inhabitants. The way she took care of and spoke to her plants revealed a deep intimacy. After stroking the rosemary and lifting it to her nose to smell the aromatic scent, Dona Joana placed it between various other plants on the wooden table behind her house. She had made the table from leftover branches to protect her small plants – mainly succulents and other ornamental plants – from the chickens and ducks roaming free in her home garden. Some of these plants she had sowed and raised herself, others she had exchanged with other women, and still others she had received as gifts. Although a little surprised by her words, I did not think more about them that day. They started making sense to me only later when I gradually learned more about some of the ways in which growing (*criar*) and taking care of (*cuidar*) plants, and remembering relate to each other on the islands of the Parnaíba Delta.

***Cuidar* and *criar* – care beyond the human**

In this chapter, I explore on one hand the relationships of women with plants and animals living in their home gardens, and on the other hand, the particular affective relations that emerged between some women and younger men who regularly come to the islands for shrimp fishing, through a lens of care. These relationships may, at first sight, seem to be of profoundly different kinds. However, they appear so only from a perspective that maintains rigid boundaries between species, and between the social and natural. Recent research has shown that care extends both beyond the classical mother-child or carer-patient dyads, as well as beyond the realm of the human. "Knowing (and caring for) others is a relational practice that opens up new possibilities for coconstituting and living together in a shared world," Haraway (2008, 74) notes. As Haraway (2003) reminds us, there is no coexisting without transformation of those involved; relationships inevitably transform entangled beings, so that living-with is always a becoming-with. Multispecies world making is thus constitutive of life. Tsing (2015), for instance, points out how the metabolic activity of microbial life has made

the atmosphere breathable for vertebrates, sustained by the life processes of plants living on soils formed by rock-digesting fungi, and generated landscapes that humans have transformed with fire, allowing other species to thrive alongside them, opening up new possibilities for coexistence.

As we are going to see in this chapter, when women on the islands of the Parnaíba Delta talk about raising and taking care of their children, their family members, and also animals and plants in their home gardens, they not only speak of all these beings with similar affection and intimacy, but also commonly use the same terms *cuidar* (to care) and *criar* (to create, to craft, but also to bring up, to raise, and to grow) to speak about these relationships. Be they human or nonhuman, women know each of these beings' preferences, what they like and dislike, the amount of care they need, and the specific ways in which they need to be cared for.

Caring practices are not only embedded in complex interrelated multispecies relationships, but in these relational webs, humans are also not the only beings caring for others. Sago palms for instance care for humans by providing food (Chao 2021), and among the indigenous Awá-Guajá from northwest Maranhão, a range of nonhumans care for other nonhumans: tortoises have butterflies as pets, peccaries rear surucucu snakes and electric eels own various fish species and are themselves reared by spectacled caimans (Garcia 2021). Garcia (2021) shows that the Guajá verb *riku* (in Portuguese translated as *criar*, to rear / to take care of / to grow) is used to describe diverse relationships such as that between mother and child, and between husband and wife, but also between animals, between spirits and nonhumans, and between animals and plants. If these *riku* relations can take on different meanings, some would for instance be ownership, or mastery, others pet relations, or a "walking alongside," but what they have in common is a rearer/carer on one side and a reared/cared for on the other side. Through rearing/fostering/caring (*riku*) relations, beings directly (and mutually) participate in each other's lives and, even more crucially, some beings only exist due to their relations with other beings (Garcia 2021, 54-55).

In the Parnaíba Delta, as described in previous chapters, enchanted beings, especially "owners" (*donos*) of fish and the sea, and the "mother of water" (*mãe d'água*) take on important roles in caring (*cuidar*) for both diverse environments or milieus and the beings living in them (see chapter 5). Moreover, nonhuman animals may also plant (*plantar*) or grow (*criar*) plants. While visiting people's home gardens, for example, they repeatedly pointed me to specific cashew trees that they explained had been planted by their goats and Seu Juzé explained that it is the birds who plant the carnauba palms.

In practices of *cuidar* and *criar*, in this sense, the boundaries between the social and natural become porous, the social no longer remains restricted to humans, and human exceptionalism (Haraway 2008) becomes untenable. Furthermore, care, as understood in these relations of *cuidar* and *criar*, involves concrete practices. Going beyond wishful thinking or a moral stance, these care relations are practical labor, embedded "in mundane doings of maintenance and repair that sustain everyday life" (Puig de la Bellacasa, 2017, 170). In her recent work, Puig de la Bellacasa indeed suggests considering care simultaneously as "a vital affective state, an ethical obligation and a practical labor" (2012, 197), arguing that all three aspects – affective, ethical and practical – matter.

However, as Puig de la Bellacasa (2012; 2017) also reminds us, care is inherently ambiguous; it is not a guarantee of a "smooth harmonious world" (2012, 199). Recent research in feminist STS and anthropology, especially studies focusing on multispecies care, has moved beyond seeing care as an obvious and common practice or as a romantic endorsement, pointing to its situatedness and ambivalence (Benson et al. 2017; Schroer et al. 2021; Westerlaken 2021). In caring relations, power is often unequally distributed; it might be just as violent as it is nurturing; there might be surprise or neglect; care is often political and embedded in wider fields of power (Van Dooren 2014a; Rose 2014; Martin et al. 2015).

Besides looking at the relationships between women and the beings in their home gardens, as well as women and younger fishermen, through a lens of care, I propose in this chapter to attend to the temporalities of caring practices. Building on the insights of the previous two chapters, it is not surprising that care, similarly to other practices, requires attentiveness to the temporalities of other human and nonhuman beings, as well as abilities to adjust one's own practices to the rhythms of others. Puig de la Bellacasa, in this sense, notes that "care time entails 'making time' to get involved with a diversity of timelines (such as the ones involved in the living soil) that make the web of more than human agencies" (2017, 171). This very much resonates with the insights from the previous two chapters: rather than a given, time is made through practices. To put it differently, temporalities are not just external and imposed but emerge through practices including care.

In this chapter, I explore the temporalities of care along two lines. On one hand, coming back to the "*tempo* of cashews" I illustrate how women's care for cashew trees entails attendance to various other-than-human temporalities and an immersion in their rhythms. In particular, the practice of burning (*queima*) – part of a set of caring practices for cashew trees – makes clear that the specific timing – *when* caring practices are done – matters. The same practice can at

different times be sustaining or highly destructive.

Based on these insights that the temporalities of care matter, I will further explore how care can be a way of creating continuity both through remembering and bridging or mitigating dissonant temporalities. As the above story of the rosemary hints at, caring for plants might be a way of remembering past times, as well as leaving traces for future generations. Moreover, care might be a way of creating continuity in the intervals that emerge between different "times." This is most apparent in the solidarities between women and young fishermen. In the "empty" time between two "good tides" or during successive "bad tides," many women give the young fishermen work, paying them with cooked meals, to keep them busy and thus prevent them from giving in to the temptations and the vicious cycles of alcohol and drugs. Finally, through examples of care for animals and plants in home gardens, I will explore care as a way of mitigating dissonances that emerge through clashing or misaligning temporalities. A focus on care, and in particular on the temporalities of care, emphasizes once again the interconnections and interdependencies of diverse human and nonhuman ways and forms of life. Furthermore, it shows that caring practices might be yet another way of creating constancy and continuity – be it through remembering, leaving traces, or mitigating dissonances – in a world characterized by continuous transformation.

Of women and plants: taking care of home gardens

> "You can't just put a plant there and wait; no, you have to care for it. I talk to my plants, because they like it, they're alive. Some people think that I am crazy, but I am not. You have to take care of plants so that they grow up and become beautiful." (Dona Joana)

> "It's hard to find a cashew tree like that in the forest. Here [in the home garden] it listens to us, we walk beneath it, we stay under it. That's why it is nice and big like that. It likes to hear our voices." (Seu Zé)

In the villages of the deltaic islands, everyday life mostly takes place in home gardens, called *quintais* (sing. *quintal*), which usually consist of a small area in front of the house and a bigger area in the back of the house. In the front area aesthetics are of great importance. There women display the most beautiful plants with colorful flowers, and they meticulously pick weeds and clean the soil from dried leaves and other unwanted intrusions so that only a white surface of sand remains between the selected plants. Such clean (*limpo*) gardens are considered beautiful (*lindo*) and admired by other women and visitors. Whereas the front is proper and tidy, the back area of the home garden is usually a lively and busy space. In the immediate vicinity of the house, women gut and descale fish, and wash dishes on the *jirau,* a washing table covered with wood or a stone slab. Next to it pots and pans pile up on wooden shelves. Ducks paddle happily in the dishwater trickling down, and a bunch of chickens and dogs cavort around, hoping to get some of the leftover food. It is in this back garden that women cook on clay ovens lit with locally produced coal to economize the expensive gas of



Figure 20: Home garden - jirau, mud oven, back and front areas

the indoor kitchen's gas oven, and freshly caught fish is grilled on small fires. Plastic chairs, wooden stools, and hammocks invite one to sit down in the shade of bigger trees. It is here that information on fishing, news from the mainland and gossip are exchanged and that naps are taken after lunch.

In self-made raised beds (*canteiros*), women grow tomatoes, chilies, peppers, and the appreciated *cheiro verde* (lit. green smell) – chives and coriander – which is hardly ever missing from the tasty stews. The raised beds protect the plants from the animals roaming around, and often women additionally wrap old fishing nets around them, as they know that ducks especially try by all means to catch a piece of the growing plants. In other parts, according to the home garden's topography and the plants' need, women grow a variety of fruit trees such as acerola, papaya, lemon and lime, guava, mango, black plum,[83] sweetsop and soursop,[84] coconut and cashew. Cashew trees are often planted more extensively further behind in the gardens, sometimes forming small groves. Additionally, some women grow medicinal plants in their gardens and cultivate small fields during the rainy season with maize, beans, pumpkin and watermelons. The diversity of plants and the species chosen may differ considerably from one household to the other and usually reflect the family's preferences of tastes, as well as the amount of time women are eager to dedicate to the care of the gardens. Small livestock, too, are raised according to women's preferences; most raise chickens, some raise ducks, and a few of them turkeys and pigs that all roam freely through the gardens. Additionally, in fenced-off areas, goats, sheep, and cows may be raised, although these require a bigger investment or, as people say, "better conditions."

If men certainly help in the maintenance of gardens, for instance with the physically more intense work like fencing, weeding, and cutting bigger tree branches and the harvest of some fruits, it is undoubtedly women who have a special and intimate relationship with their home gardens.[85] They dedicate considerable time to sweeping, cleaning and caring for plants and animals. Women with the most flourishing and diverse gardens always highlighted to me their affective relations with their gardens and the beings living in them. "I love to raise and plant (*criar*)," they told me, often emphasizing that they could not imagine life without raising animals and growing plants anymore. It particularly intrigued me that women commonly used the same term, "*criar*," to speak about raising livestock, growing plants and educating children.

[83] *Syzygium cumini*, called *azeitona.*
[84] *Annona squamosa*, called *ata*, and Annona *muricata*, called *graviola.*
[85] For a discussion and contextualization of gendered practices in Northeast Brazil see Chapter 5.











Figure 21: Home gardens - raised beds, plants and animals

As the citations at the beginning of this section illustrate, people consider plants, animals and human beings altogether as "living beings" or "beings like us" that need care (*cuidado*) for their flourishing and well-being.

Caring (*cuidar*) and raising/growing/educating (*criar*) include a variety of practices. In home gardens, cleaning, sweeping, raking, weeding, burning of dried leaves and withered parts of plants and other maintenance work makes up a substantial part of women's caring practices that contribute not only to these diverse living beings' well-being but also to the garden's aesthetics, to keeping it clean (*limpo*) and beautiful (*lindo*), and to maintaining it as a relatively safe space, for instance by keeping snakes away.

Care, however, also includes a range of other relations, pointed out by the above citations. For example, attending to plants, speaking with them, and "being present" through walking around, stepping (*pisar*) beneath trees, or simply staying close are also important caring practices. As pointed out in the previous two chapters, from the delta inhabitants' perspective, nonhuman beings, such as plants and animals, indeed have agency and share a range of characteristics with human beings. For instance, they have feelings, like or dislike certain things, can be brave (*valente*), intelligent or knowledgeable (*sábio*), and can lie, play with or trick other beings and pretend certain behaviors. Nonhumans hence respond to human and other nonhuman beings' actions. If cashew trees apprehend caring practices, for example, they commonly show this by producing big and delicious fruits. Conversely, if they dislike a certain behaviour, such as greediness, the trees provide few or no fruits in return.

Not all plants, however, react in the same way to caring practices and not all of them need care to flourish. Delta inhabitants indeed distinguished between plants "of the forest" (*do mato*) such as *murici*, *jatobá*, *guajiru*, *guabiraba* and others that spontaneously grow and develop well in the surrounding forests and cannot be planted and cared for in home gardens, and plants that required care to grow such as papaya, banana, coconut, guava, etc. Most of the latter group are not adapted to the *caatinga*, the dry savanna forests of the islands. Coconut palms for example require salt to grow and bananas plants require a lot of water. A special position, somewhat in-between these other groups, occupies the cashew tree. Cashew trees are native to the island's forests; however, they are also planted in home gardens. The native cashew trees (*cajueiro nativo*) usually remain rather small and produce small fruits and nuts, whereas many of the planted cashew trees in home gardens develop into magnificent, mighty trees and produce big and tasty fruits and nuts. In the forests, people explain, cashew trees remain small because they are sleeping. I was often told that cashew trees only wake up and

thrive through hearing peoples' voices, sensing their steps and receiving their care. Appreciating human practices of care, cashew trees reward or care back for people by giving them numerous tasty fruits.

Many of the above observations resonate with other works on human-plant relations and care. It is common among other groups in the region, especially Indigenous people, that social networks encompass other-than-human actors and that plants are treated as persons, sometimes as kin. For the Indigenous Canela community living in the Cerrado savanna in the interior of Maranhão, for instance, plants are kin they love, nurture and care for throughout the plants' lives (Miller 2019). Miller (2019) argues that plants become crop children; becoming a parent to plants implies an "education of affection" that is already taught to girls and boys. Parenting plants is an ongoing process that involves similar skills and practices to those involved in childcare, and crops have "agentive capacities": they see and listen, and communicate their needs (2019, 90). Crop children that are happy flourish and produce many crops; if they are mistreated, on the other hand, they relocate to other gardens (Miller 2019).

Similarly, for the Jarawara, an Indigenous group from south-west Amazonia, plants are children of those who cultivate them and the cultivation/bringing up/education (*criaçao*) of children and plants shares many similarities (Maizza, 2014). Maizza (2014) further shows that *cuidar* (to care) is intimately linked to both *criar* (to grow/raise/educate) but also to making or keeping things beautiful: *cuidar* often takes on meanings of "helping to grow," and for plants to grow well fields and gardens have to be cleaned, tidied up, made beautiful (Maizza 2014). Also, women spend much time "making a leap" to their cultivated fields so to take a look at their plants. On these trips, women observe, care for, stay close and talk to plants that are considered to need this human presence to grow well and become beautiful (Maizza & Oliveira, 2022). These relations also pertain in other world regions. Among the Indigenous Marind in Indonesian West Papua, sago palms, as Chao (2021) points out, thrive through the company and the care they get from humans including canopy thinning, selective felling and sucker transplanting. Sago palms, in turn, care back for humans by providing them with food. Palms in conservation zones, separated from humans, in contrast, "grow and die 'lonely' and 'sad'," the Marind people emphasize (Chao 2021).

Care, Tronto (1993) suggests, can be understood as "a species activity that includes everything that we do to maintain, continue and repair our 'world' so that we can live in it as well as possible. That world includes our bodies, our selves, and our environment, all of which we seek to interweave in a complex, life-sustaining web" (1993, 101). Puig de la

Bellacasa emphasizes that care goes beyond moral dimensions in that "it involves affective, ethical, and hands-on agencies of practical and material consequences," and accentuates the interconnectedness of lives: "for interdependent beings in more than human entanglements, there has to be some form of care going on somewhere in the substrate of their world for living to be possible" (2017, 4). Similar understandings of the vital significance of affective practices for living well and of interdependency and involvement of relations in webs that transcend separations between human and nonhuman worlds are also expressed by delta inhabitants, and as laid out above, are especially pertinent in the relations that women maintain with their home gardens and the various beings living in them. Care, in the above examples, entails attention, affection, and communication; it is about concrete practical activities and also involves aesthetic dimensions. Rather than a fixed set of practices, care is a process of learning, of attending to the needs and desires of other human and nonhuman beings that respond in certain ways to the care they receive. Care is often a reciprocal relation, an exchange of feeding and being fed. Care is necessary to sustain and survive, but not just in any way: care here appears to be much about contributing to thriving, flourishing and living well.

Nevertheless, care is also very complex and often ambiguous. For example, women's caring practices in the Parnaíba Delta are highly selective: maintaining a clean and beautiful home gardens entails care, attention and affection for some plants but also weeding or killing of other plants; for cashew trees to flourish, parasitic plants as well as shrubs and trees growing too close must be removed. As Puig de la Bellacasa argues, it is impossible to abstract care from its situatedness; indeed, when engaging with care, critical thinking is necessary, for instance, "because speaking of good care – or as well as possible care – is never neutral" (2017, 6). There is no normative framework for caring "as well as possible," which following Puig de la Bellacasa opens up possibilities of disturbing, displacing and continually reconsidering meanings of an "established 'well'" (2017, 7), and acknowledges that "there is no position from where to claim having the answer of what as well as possible care means, or not" (2017, 204). Being aware that such an outside position does not exists inevitably makes clear that all our involvements do have effects and that care cannot innocently be assumed as necessarily comforting, rewarding or guaranteeing a harmonious world (Puig de la Bellacasa 2012; 2017).

Temporalities of care

Attending to and immersing in the temporalities of others

In chapters 4 and 5, I have explored the local conception of *tempos* and described how delta inhabitants continuously and attentively observe the various human and other-than-human movements taking place in the deltaic world, and attempt to adjust their own movements and activities to them. Caring practices do not differ in this sense from other practices. They too, as Puig de la Bellacasa (2017) also notes, require attentiveness to the doings and temporalities of other beings, be they human or non-human, and an adjustment of one's own practices to the rhythms, paces and tempos of others. Let me illustrate this briefly by coming back to the example of the "*tempo* of cashews" that I introduced in Chapter 4:

It was the end of June. Over the last weeks the landscape had become drier and drier. Since the last rainfalls had completely ceased, many women were busy cleaning their home gardens. Besides pulling out the remainders of small, withered plants, raking and sweeping the gardens, the women's attention now increasingly turned to the cashew trees. The small, reddish cashew flowers blossoming for the last couple of days have set off excited anticipation in the village; they announced that the appreciated "*tempo* of cashews" was about to begin. The cashew trees, the women said, needed a lot of care (*cuidado*). The men started cutting off old or excessively low-hanging branches and freed the trees from unwanted parasitic plants, while the women raked and wiped the dry leaves beneath the trees into small heaps. Once in a while, they burnt heaps of leaves directly under the trees because the smoke keept insects away. These activities would not only facilitate the gathering of fruits and nuts later, for instance by improving their visibility on the ground and by avoiding accidents and back pains due to dense low-hanging branches, but the caretaking, the fresh air now passing beneath the trees, the attention given to trees was also said to please the trees and allowed them to thrive. A few days later, in the morning, a slight smell of rain hung in the air; it had rained lightly at dawn. "It is the rain of the cashews," people joyfully announced to explain this unusual happening in the ever-more drying-up landscape. Not only cashews, but also other forest fruits that ripened in the summer (dry season) had their own rains that gave the final impulse for the fruits to grow. From now on, regular monitoring of the cashew trees' lush green foliage would begin. However, humans were not the only ones watching out for the first red, orange, or yellow spots to appear on the trees; birds too were attentively observing, and in these early days of the cashew time, they were often quicker to pick the fruits before women could grab them with a long wooden stick (*vara*) or send children to climb up the branches.

Anyway, after this initial excitement, and after the first thirst for the long-awaited juicy fruits was satisfied, the number of cashews the trees produced would be so high that people were hardly able to collect, consume or process all of them. Many would decay on the ground and thus provide food for other organisms.



Figure 22: Cashew trees in home gardens and the time of cashews

This short account, besides re-emphasizing delta inhabitants' knowledge, attentiveness and adjustment of practices to multiple other temporalities, illustrates that on the deltaic islands people perceive themselves – and accordingly act – as participants of relational more-than-human life webs and not as external observers (cf. Puig de la Bellacasa 2017). Through immersion in repetitive cycles, here the "*tempo* of cashews," people learn about the needs of the trees and trees "learn" about and adapt to people's practices (e.g., they wake up and thrive). Such an immersion, and attending to other temporalities, Puig de la Bellacasa (2017) argues, disturbs the unidirectionality of care and disrupts productionist, linear temporalities, because if humans start acting as full participants, as members of more-than-human

communities, they are no longer merely consumers, and non-humans cease to be mere "resources." In the relational webs, both humans and non-humans can give and receive care, a diversity of temporalities interweave, and caring is not necessarily focused on one species or a single relationship but sustains and nurtures the web as a whole in many directions. Rather than aiming for maximization (that would be the case in productionist thinking, progressing linearly) caring practices become an "immanent obligation" with the intention to maintain, continue and repair living webs (Puig de la Bellacasa 2017, 192).

Women's caring practices thus attend on one hand to the specific temporalities of each plant, the pace of growth, and the time of flowering and ripening of fruits, for example, but also take into account a variety of other rhythms such as the cycle of the moon and seasonal transformations. In winter, for instance, women commonly leave their home gardens dirty (*sujo*) and ugly (*feio*) – that is, with weeds (*matinho*) sprouting everywhere. The constant rain, spurring the proliferation of weeds, makes it impossible – or at least very time-consuming – to keep the sandy soil clean between selected plants. It is thus towards the end of winter, when rains become sparser and weeds start to shrivel and die, that women spend considerable amounts of time cleaning, weeding, raking and sweeping their gardens so that they become beautiful (*lindo*) again.

Nevertheless, the importance of the right timing of care becomes especially evident in practices of burning (*queima*). Burning, as mentioned above, is part of a set of practices geared towards cleaning the ground beneath cashew trees, which facilitates the gathering of cashew nuts but also helps trees to thrive. More generally, while cleaning their gardens, women often collect withered plants and dried leaves in small piles to burn them periodically. Moreover, fire is sometimes also used to clear bigger areas of home gardens, as well as parts of the forest where later in the year fields would be cultivated. Indeed, burning is an important practice in the process of making *roças* (swidden fields). After identifying a suitable area, the vegetation is cleared – often only carnauba palms are left – spread across the ground to dry and then burned. A *roça* is commonly cultivated only for one year; the following year another area is cleared and burned so that the forest can regrow. Yet burning (*queima*) or setting fire (*tocar fogo*) is not merely aimed at cleaning gardens or forest areas in a relatively effective and quick way; it is also said to please some plants. Carnauba palms, for instance, Seu Juzé explained, like the fire. He described carnauba palms as the "most resistant beings" he knew: they could grow in flooded as well as extremely dry landscapes, their roots could extend very far into the ground to get water and they were not affected by fire; on the contrary, they

commonly grew better and faster after the *roçagem* (slashing and burning) – one reason why Seu Juzé also periodically put fire on the stems of the carnauba palms in the family's home garden. Dona Joana similarly from time to time burned parts of her home garden, explaining that many plants became more beautiful (*bonitas*) after they had been burnt.

The burning of forested areas is a highly controversial issue in Brazil that cannot be fully developed here. Not only do Brazil's ecosystems and biomes respond in very different ways to fires – some are fire-sensitive (e.g., Amazon rainforest), others fire-independent (e.g., Caatinga) or fire-dependent (e.g., Cerrado and Pantanal) (see Hardesty et al. 2005) – but in many places, wildfires have also been altered by anthropogenic processes such as changes in land use and an overall drier climate due to global warming. This contributed, for instance, to the catastrophic 2019 and 2020 fires in the Amazon and the Pantanal that sparked international media attention (Pivello et al., 2021). Nevertheless, in some areas such as the Cerrado and Pantanal, fire use plays an important ecological role. Recent research has shown that the complete banning of fire (zero-fire policy) – for instance in conservation areas – both exacerbated catastrophic wildfires and led to a considerable loss of biodiversity (Durigan 2020; Pivello et al. 2021). Although mostly called either forest (*mato*) or *caatinga*, the islands of the Parnaíba Delta are, as mentioned before, located in a complex zone of transition between Cerrado and Caatinga, as well as fluvio-marine formations (e.g., mangrove, restinga[86]). Once again, as has been observed in other areas of delta life, a clear categorization of the islands' forests appears difficult.[87] It seems nevertheless pertinent to further consider some of the recent research on the relations between fire and Cerrado vegetation. Not only are many animal and especially plant species of the islands the same as those found in the Cerrado (see e.g. Lemos and Pinho 2020), but also the observations that some plants like and thrive after burning, as well as the importance of the temporalities of burning, resonate with this research.

The Cerrado, a very biodiverse tropical savanna[88], has co-evolved with recurrent fires over

[86] Restinga formations are ecosystems covering sandy soils of marine and fluvial-marine origin, which formed during the Quaternary on the Brazilian coastal plain (see Kuhn et al. 2023)

[87] On the difficulty of categorizing transition zones between Caatinga and Cerrado see also Eiten (1972). Observing two transitions from Cerrado to Caatinga close to the border of Maranhão and Piaui, he notes that transition zones can be of very different types. One consisted of a mosaic or mixture of patches of Cerrado and Caatinga forms, whereas the other was an extremely gradual transition over 150km where the distinction between either one or the other form became impossible. Durigan (2020) similarly notes that mosaics of closed forests, savannas and grasslands often occur in the tropics and are not fully understood ecologically.

[88] The Cerrado encompasses various types of vegetation such as grasslands (campo limpo), several savanna formations (campo sujo, campo cerrado, cerrado *sensu stricto*) and sclerophylous woodland (cerradão) (Pivello 2011)

millennia; its flora and fauna have not only adapted[89] in diverse ways to fire (Pivello 2011; Durigan 2020; Pivello et al. 2021), but some plants even seem to require periodic fires to reproduce and survive (Durigan 2020). Many fires occurring in the Cerrado are natural, but Indigenous groups have also actively used careful burning for several purposes such as to clear and clean paths and the surroundings of houses, for shifting cultivation, to control diseases, to drive away pests and snakes, to attract or keep away animals during hunting, to stimulate the growth of grass as well as the flowering and fruiting of particular plants, and to attract animals that feed on fresh herbs and fruits (Anderson and Posey 1985; Leonel 2000, Hecht 2009, Pivello 2011). Indeed, after the passage of fire, many plants not only recover rapidly, but some even thrive, for instance, because the fire prompts their germination and flowering. Beyond being essential to maintain the Cerrado's typical open, patchy, mosaic-like form and its high species diversity – in the absence of fire, cerrado formations tend to become more closed forests, generally reducing the diversity of species and habitats (Durigan 2020) – fire, if carefully managed and used, can also be a way of increasing the diversity of certain areas by purposefully stimulating the growth and production of fruits of certain plants (Anderson and Posey 1985; Pivello 2011).

Fire, then, cannot easily be classified as either good or bad; it may have devastating effects but can also engender life. Fire can be a violent or life-sustaining caring practice, particularly in relation to *where* and *when* burnings happen. In other words, to understand fire and burning practices, it is necessary to consider not only the specific context, the milieu and multispecies entanglements within which fire takes place, but also to attend to diverse more-than-human temporalities: seasonal rhythms (dry/wet), dynamics of winds, and rhythms and life cycles of plants and animals, as well as the rhythms that the passage of fire itself engenders.

I became especially aware of the importance of the timing of burnings one afternoon when Dona Joana invited me to accompany her to set a fire (*tocar fogo*) to clean an area next to her brother's home garden. It was the beginning of the dry season, grasses and other small plants and bushes had dried already, but bigger bushes and trees still had green leaves. Dona Joana and her brother Seu Fernandinho had observed the weather, especially the direction and intensity of the winds, and decided that it was a good time for burning. They set a fire and accompanied it with tree branches in their hands. By beating on the burning vegetation, they

[89] For example, plants with thick corky barks, protected seeds, a larger amount of below-ground biomass, robust root systems, and the ability to rapidly sprout leaves and flowers after fire (Pivello 2011; Durigan 2020; Pivello et al. 2021) and animals able to detect smoke and with the habit of burying in holes, or seeking refuge in gallery forests or swamps (Pivello 2011)

extinguished the fire in certain parts, which allowed them to direct and contain it in the area they wanted to burn. I was impressed by how rapidly the fire spread, especially where grasses were abundant. While the speed and intensity of burning intimidated me, Dona Joana and Seu Fernandinho seemed relaxed and confidently accompanied the fire. Suddenly, however, the atmosphere changed. The winds got stronger, the fire spread faster and, in some areas, seemed to "jump" from one place to another, I saw Dona Joana and Seu Fernandinho hurry up, but they could no longer keep pace with the fire. A neighbor arrived with a bucket of water to help contain the fire. He wanted to return to fetch more water, but Dona Joana shouted that it was not necessary anymore and as I looked around, I realized that the winds were all of a sudden calming down almost as rapidly as they had become stronger before. The fire was slowing down, and only a few remaining fire spots advanced towards an area of denser forest. Dona Joana said that we could now return to her house. Still a bit upset, I asked whether the fire would not penetrate into the forest. Dona Joana pointed to the shrubs and trees the fire was heading to and said that this was a reason why it was good to burn when shrubs and bigger trees were still green, as they would impede the fire from spreading to the denser forest. I could vividly imagine how radically different the situation would be at the height of the dry season, when many of the trees became nothing than skeletons, their withered leaves spreading over the ground.

Anderson and Diegues (1985) observe similar techniques of using branches to direct the fire among a group of Indigenous Kayapó in an area of Cerrado in southern Pará and also note the importance of temporalities. Elders decide and announce when to burn. For example, the burning period starts only once the buds of *piqui (Caryocar brasiliense)* appear, because an earlier fire would destroy the flowers and hence reduce the later harvest of the fruits. Pivello et al. (2021) point out that the speed that the fire spreads, which intimidated me, is beneficial too. Such surface fires, which commonly consume only the highly flammable material (e.g., withered grasses) move rapidly enough not to affect deeper soils, allowing buried seeds and perennial plant parts to escape the fire and sprout again after its passage.

Fagundes (2019) shows in his research among Quilombolas and environmental managers in the Cerrado of the Jalapão region (State of Tocantins) the difficulty of classifying fire into "good" and "bad" or desired and undesired according to normative frameworks of the fire's intensity (low/high) and temporal occurrence (early/late in dry season). He argues that Quilombolas, who use fire mainly for the production of golden grass and for cattle herding, define good or "healthy fires" always in relation to both their temporality and their relation to



Figure 23: Drying-up forest, burning in home garden and burnt stem of a carnauba palm

the life cycle of specific species. Arguing that living beings all have their own perception of *queimadas* (burned places), Fagundes points to the complex rhythms that burns engender because they provide different things for different living beings:

"The perceptual apparatus of rheas is also attuned to the flight of microfauna, especially bugs and small lizards, which is why they arrive at the *queimada* on the same day that the fire has passed through – making use of their *zoio bom* (good eye) for smoke. After around eight days (when in the *vargem* milieu) to fifteen (when in the *chapada*), the rheas will return, this time to eat the shoots, giving rise to the wild grass grazing phase. They may also encounter some deer, which 'sniff the wind and follow the scent,' and also approach at this moment to eat the shoots and flowers of the *cerrado*. Deer, however, prefer the leaves and shoots of tree species. But while rheas prefer *queimadas* in *chapada* milieu, especially since this is also where they will later build their nests, the subspecies of deer have distinct preferences: the *veado do campo* (savanna deer, or *campeiro*) is more attracted to the wild grass shoots of the *chapada*, while the *veado do pântano* (marsh deer, or *sussuapara*) is more commonly linked to the *queimadas* of the *vargem*. In search of rhea and deer comes the jaguar, the apex of the food

chain. Due to its potential presence, it is never recommendable to spend the night in locations close to a *queimada* more than a month old." (2019, 15)

Similarly, burns for cattle and burns for golden grass follow their own, albeit interweaving rhythms. The spatio-temporal planning of the burnings (*queimadas*) people practice, then, is generally geared towards what a fire will provide for a certain living being, for instance feed for cattle, but keeping the connections between the rhythms of cattle feed and golden grass in mind. Undesirable fires, or "fire out of time" (*fogo fora do tempo*), Fagundes (2019) argues, are also defined in relation to living beings: for example, at the wrong timing, a burn reduces cattle feed and causes losses to cattle breeders, or destroys nests and newborns of wild animals.

All the above examples emphasize how essential timing can be in fire use, and illustrate at the same time the complexity of temporalities, both because of the interconnections between rhythms, and because of the possibility of unexpected outcomes. While burning can be a practice of care, sustaining life and providing well-being if performed at the right time, it can also be highly destructive. As a practice of care, burning is also a good illustration of the selectivity and ambivalence of care: geared towards benefiting certain living beings, it may be extremely violent for others.

In the following sections, I will turn to the relation of caring practices with "maintenance" and continuity, which also becomes apparent by exploring care through a temporal lens, and is particularly relevant in the context of the intense movements and sometimes abrupt transformations that characterize life on the deltaic islands. I will, for instance, illustrate how caring practices on the deltaic islands might be a way of creating continuity with "other times" (past, future), in "in between times" and of mitigating the effects of dissonant timings.

Relating to "other times": leaving traces and remembering

I have so far described practices, mostly of women, caring for, maintaining and embellishing the gardens surrounding their houses. However, people often also maintain relations with former home gardens in the forests. They visit these gardens, for instance, to gather fruits and also to help people remember those who have moved away, who had planted and taken care of the gardens, and stories and events of the past. To illustrate this, let me briefly come back to my first visit to the so-called "other side" of Passarinho (see Chapter 2), a part of the village

where only three houses with their home gardens have persisted since the abandonment of rice cultivation.

For me as an unknowing visitor, the landscape of "the other side" resembled nothing other than the "natural" forest at first sight. Dona Alice, who invited and accompanied me on this exploration, however, noticed plants that were "not from nature," as she put it, but planted by former inhabitants. Depicting these patches of planted plants amidst the native vegetation, and connecting one to the other, allowed her to recognize where the houses of the former families used to be, as if she was reading a map. The more we advanced through the thickets of the "other side" and the more she read the landscape to me, the more vivid her memories of these inhabitants' stories also grew.

On another occasion, in Barrinha this time, Dona Joana invited me to go collecting *bacuri*[90] fruits in the forest. First, I was a little surprised. I had eaten this fruit in other regions of Brazil but until then had not noticed or heard of it on the deltaic islands. During the quite long walk through the forest to reach the *bacuri* trees, it turned out that these trees, too, were not native to the islands but had been planted by a former inhabitant. Each year around February, when the "*tempo* of the *bacuri*" started, Dona Joana, often accompanied by her family, walked through the *salgado* and forest to the trees in the former home garden to gather the fruits. On this occasion, they remembered and recounted the stories of the former inhabitants of the couple of houses that used to stand where now only the *bacuris* were left. They recalled a distant uncle and cousins, remembered parties and places where young men and girls used to *namorar* – to date each other – and the men recalled soccer competitions on a former soccer field.

On the deltaic islands, where people have histories of intensive migration and the landscape is continuously transforming, the plants cultivated in home gardens, especially trees, often appear to be more durable than other elements and thus leave traces in the landscape. People, and again especially women, usually have a wide knowledge of who planted and cared for which plants. Some people are known for their special preferences; for instance, it is said of Dona Alice's late father that he loved cashew trees and thus planted several hundred trees, some in his former (and now Dona Alice's) home garden, others in his *sítio* (a fenced-off area in the forest). During my visits to other households, I noticed that after an initial conversation, women commonly not only insisted on showing me their home gardens, proudly pointing out

[90] *Platonia insignis*

their most beautiful or special plants, but also frequently named people who had planted certain trees. Knowing one another's plants and the carers of specific plants allowed delta inhabitants to remember people who had moved or passed away and their stories by reading their traces in the landscape. Or as Maurício told me, one day in early July when sitting on his veranda:

"Planting is good because you leave your mark. If I plant a coconut tree here, then people will ask 'who planted this coconut tree?' 'It was this guy…' 'Ah, and where was he from?' And then they'll remember me. It's like having a child. People ask, 'whose son is this?' 'That guy's son.' 'Where was he from? What was he doing?' and so on. Nobody's gonna forget you. Or that necklace you gave me. Looking at it I'll remember, it's from Nora and Daniel, they came to spend some time here and there goes the memory."

After this conversation, I began to better understand Dona Joana's words about the rosemary gift that opened up this chapter. By giving her the plant, I implicitly asked her to take care of it and unwittingly left a trace of me in Barrinha that would continue after I left. From then on, several times when I returned from a short stay in town, Dona Joana would tell me that while I was away someone had asked where the plant came from, or that someone was amazed at the plant, and that she had replied to the person that it was from me. In this way, she somehow confirmed to me the special relationship that was emerging between me, her and the plant, since I had given it to her.

This brings me back to the relationship between memories and the physical environment (see also chapter 3). Landscapes have been predominantly described as repositories and records of memory. From this point of view, the present landscape holds various traces of the past, whereby it "tells – or rather is – a story," as Ingold (1993, 152) emphasizes. Ingold argues that the environment itself is "pregnant" with the past. Over generations, people have been moving in it, have left their imprints, and hence contributed to its creation. The perception of the landscape, Ingold (1993) further points out, is therefore always an act of remembrance, whereby remembering is not necessarily synonymous with recalling a mental image, but rather a perceptive involvement with this "pregnant" environment. Undoubtedly, landscapes play an important role in remembering the past for many societies; they might connect people to their histories. However, other works, for instance those of Forty and Küchler (1999) and of Harrison (2004a), have highlighted that this perspective of landscapes as repositories of history and memory, as well as more generally the importance attributed to remembering the past – which consequently raises the question of how to preserve it – might be specific to only

some cultures, notably Western societies. Also, in highly fluctuating environments, the practice of inscribing and fixing traces seems to be at odds with the ongoing dynamics. What happens thus in ever-becoming landscapes, where nothing seems long-lasting, where traces of the past are frequently washed away, buried by sand, transformed along with a continually changing environment, and where people have histories of intense migration? To put it differently, how does the remembering of the past unfold in an ever-becoming world where transformation is abundant, and neither movements of humans and non-humans nor narratives conform much to linear, chronological sequences (e.g., past, present, future) (see Chapter 3)?

Some recent studies suggest alternative ways of approaching memory in fluid landscapes. Harris, in his work on Amazonian floodplain inhabitants, for instance, calls for a different approach in a context "where the work of past generations does not lie layered like geological strata" (Harris 2012, 743). Harrison (2004a) points to the connections between watery, fluid and forgetful landscapes. By comparing his findings from the middle Sepik River in Papua New Guinea to research about English landscapes, which have been described as memorious, similar to books written by successive authors, Harrison (2004a) argues that the middle Sepik appears rather as an actively forgetful landscape, with water as the main actor of un-remembering. In this erasure of the past, people do not play a passive role, but through selective practices actively enhance – or hinder – processes of forgetting. Lima and Alencar's work (2001), as I mentioned above, show how the memories of floodplain inhabitants in Amazonia are continuously disconnected from fixed references as the floodplain changes and reforms, and therefore cannot be associated with particular places, as it is usually done in fixed environments. This is further complicated by people's frequent moving, which challenges the construction of a collective history and memory in the floodplain communities.

On the deltaic islands, similar issues of the erasure of traces arise, relating for instance to the delta's shifting materialities, the continuous movements, such as nature's making and unmaking, and people's intensive migration (see Chapters 1 & 3). In this ever-becoming environment, planting and caring for plants can be a way of creating traces for the future, a way of leaving tracks of one's story that may continue after one has moved to another place or died. Plants help current residents remember stories and people that are no longer there. In this sense, planting and caring for plants creates continuity between different times by connecting past histories to the present and carrying at least some traces of today's inhabitants into the future. However, the mere act of planting or caring for plants does not ensure the persistence of traces. Only through the involvement of plants, people and stories into more-

than-human socialities, into relational webs of caring, asking for and sharing stories, do the traces continue.

The deltaic islands are thus not a record or repository of memory and history per se; rather than memorious, they are a forgetful landscape, as Harrison (2004a) suggests. Again, creating continuity cannot be taken for granted in this ever-becoming world, but requires effort. People have found a way of perpetuating their stories – at least for some time – through their practices and relational webs involving plants. They maintain plants that would not grow[91] spontaneously in the native forests of the islands, and these plants maintain their stories. It is a lively memory based on oral history that is transmitted in this way. A memory, therefore, that – unlike monuments or books – most likely does not last over several generations and that might be changed over time. Rather than a collectively shared history, this kind of memory is relational, situated and always partial, for depending on whom one asks, different happenings, characteristics or facets of a person's story might be recalled. It is a memory that does not passively lie in a landscape and thus cannot be accessed by an unknowing visitor passing by or a distant observer; it requires one's involvement in the relationalities of people and plants.

Solidarities to create constancy "in between" times

"Go to sleep," Dona Joana ordered Rafaelzinho, who stood slurping in her door. She was now getting increasingly annoyed. It was probably the fifth time he had called her – and in the middle of the nine o'clock telenovela, the last one of the day and usually the most exciting. At first, Dona Joana had invited Rafaelzinho to sit next to us on the sofa and watch the telenovela together. But in the course of the evening, his condition had become worse and worse, with every visit the smell of *cachaça* pushed more and more into the living room, and in the flickering light of the TV, Rafaelzinho's wavering walk became clearly visible. Tonight, Dona Joana did not give in; she refused to give him the 5 R$ he was asking for. "My heart aches when I see him like this," Dona Joana admitted later, when Rafaelzinho was gone. In her expression the back-and-forth was clearly visible. It was a struggle with her conscience every time. She knew that Rafaelzinho was entitled to the money; he had worked for her in the garden, but she also knew that the money would be gone in a flash to buy a *buchuda* (round belly), a nickname that refers to the round form of the 500 ml cachaça bottle, or worse even a

[91] Indeed, most of these plants that are "not from nature" require some care, especially when they are young (additional water, other than sandy soils, input of nutrients, etc.). Many can, however, later continue to grow without human care, which is the case with the trees that persist in abandoned home gardens.

pedra (stone), as a piece of crack, the highly addictive freebase forme of cocaine, was called locally. That was why she mostly opted to pay him in food or clothes for his work.

When I met Rafaelzinho, he had been living in Barrinha for several months already. He occasionally went fishing with an uncle, but otherwise had no close family on the island. He did not have a house either but instead had put up his hammock under a shelter attached to the toilet and shower cubicle in the garden of the house where Daniel and I stayed during my fieldwork. On the wooden structure under the shelter's tile roof also hung his few belongings: a couple of t-shirts, a few pairs of shorts, long trousers and a long-sleeved shirt for fishing, a headlamp, a bar of soap, a deodorant, a disposable razor, a mirror shard, a sheet in case the nights got cool or the mosquitoes became unbearable, a towel and a pot to cook rice, fish or coffee on the fire. The openness with which his intimacy, and in a way also a piece of his life story, lay there, visible to everyone passing by, touched me awkwardly at first.

Rafaelzinho had spent much of his childhood in the mainland town of Água Doce. However, as one of the oldest of many siblings, he had been mostly left on his own at an early age and had started fishing in Barrinha as a teenager. His mother had then moved to Cajueiro da Praia, in the neighbouring state of Piauí, where he too had spent some time, occasionally working in the adjacent touristic village of Coqueiro for some of the *pousadas* (lodges, guesthouses) mostly run by Germans, French and other foreigners.

At 21 years of age, Rafaelzinho was the youngest of a handful of younger men I met during my time in Barrinha, who had originally come to the island for fishing. They differed from other shrimp fishers in that they did not come in the rhythm of the shrimp tides; often they stayed longer and did not have a permanent home, a wife, or a family on the mainland to return to. However, unlike some of the other men who lived an irregular back-and-forth life between the island and the mainland – sometimes they stayed on the mainland for several weeks and then returned to the island for a few months – Rafaelzinho stayed almost continuously in Barrinha. As I gradually learned more about his biography, I understood that it was not without danger for him to return to Água Doce. His older brother, I was told, was known for stealing coconuts. Rumour had it that he sought to pay off drug debts with the money he earned from selling the coconuts. After he had repeatedly been caught by furious coconut-tree owners, he suddenly disappeared. Even if his corpse has not been found to this day, several people suspected that the coconut owners had killed him or had "sent"[92] someone

[92] *Mandar matar* (sending someone to kill somebody) is still a quite common practice in the region. Many are

to kill him. Since that incident, Rafaelzinho had to watch out more carefully. In Água Doce, as in other small towns, rumours spread quickly, and inevitably associated with his brother's acts, it was likely for Rafaelzinho to be, even innocently, suspected of a crime and maybe suffer the same fate as his brother. Furthermore, the already dangerous fights that quickly arose between drunken men, because of women, because of alcohol or drug debts, or just due to hot tempers, became even riskier now.

In contrast to mainland towns, Barrinha Island thus proved to be a relatively safe space for Rafaelzinho and other young men in similar situations. On the island, too, alcohol and drugs were consumed, sometimes excessively. Some men lived in a frenzy for several days. Some staggered drunkenly through others' home gardens wearing nothing but some underpants. Others rolled around on the ground, and now and then someone fell and remained lying face-down in the sand for hours. Yet disputes could generally be settled quickly. Helplessly drunk men were rarely robbed or beaten up; more than once someone took the responsibility to bring a drunken person back to his hammock. Most of the cachaça was sold by the local shrimp trader, who sometimes refused to sell any more to a very drunken or aggressive person. Although some drug traffickers brought marijuana and crack to the island, there was no major *boca de fumo* (lit. mouth of smoke; place where drug supplies are sold) run by drug-dealing gangs, and their influence, therefore, did not usually reach the island. And finally, but probably most importantly, particular relations of care had evolved between some inhabitants of the island, mostly women, and some of these young men. As the vignette that opens this section hints at, one such particular relationship had emerged between Dona Joana and Rafaelzinho. Through my close living together with Dona Joana's family, it was also this relationship into which I gained the most intimate insights, and therefore it will serve to illustrate my ideas in this section.

The last red shrimp fishers had left two days ago, and the typical calm of the period in between shrimp tides was therefore settling over Barrinha. Only in Dona Joana's garden, in the western part of the village, was a moderate bustle still sprawling. Besides some villagers passing by to greet or chat for a while, Rafaelzinho and Seu Fernandinho – Dona Joana's brother, who lives alone in a neighbouring house since he returned from extended periods spent in the states of São Paulo and Pará a couple of years previously – repaired a broken fence. In the shade of the cashew tree, "Thin Cow" prepared the food for the cows that Dona

---

the stories that tell of people who solve their problems with other people by paying – often at shockingly low prices – a so-called *pistoleiro* (gunman) to kill a certain person.

Joana raised in an area behind her home garden. I never found out "Thin Cow's" real name, everyone just called him by his nickname, alluding to his tall, thin body, emaciated from too much cachaça. His story remained equally obscure. Possibly he came from the state of Ceará, where, as some speculated, he had committed crimes, perhaps even killed someone, and after escaping he had become effectively stranded on the island at some point. While the men were busy with the tasks that she had assigned them, Dona Joana was descaling and gutting some of the fish her son had brought the day before. Soon she would start preparing a delicious fish stew for lunch. Today, as on many other days, not only her family but also the men who worked for her would gather around the table under the cashew tree behind her house at noon to share the lunch she had prepared.

In Barrinha, it was indeed common for younger men, and men in general, to work informally for other villagers during short time periods. Building a house always required a couple of men to cut and bring wood, to transport bricks, tiles or palm leaves, to mix mud or cement and to help raise the house. In gardens, the fences had to be repaired regularly, branches had to be trimmed and soils prepared for planting. Carnauba palm leaves had to be cut and carried to the village from time to time, to fix and replace roofs made of palm leaves. If heavier supplies needed to be transported, men were usually called to help carry them to the port or from the port to their destination. People without a boat sometimes required transport to town. For all these different tasks, men were hired or "asked for" (*pedir*) according to a range of criteria such as family or friendship ties, trust, and the person's skills and knowledge. Although some of the workers announced clear prices for their services before being hired and some tasks such as transport had more or less fixed prices, the remuneration and the nature of the service most often remained ambiguous and difficult to classify for outsiders. Some were more or less voluntary favours, some involved exchanges, others relied on reciprocal obligations, and still others were provided on credit (i.e. they were paid for later either in money or work).

Thus, at first sight, the morning hustle and bustle in the garden of Dona Joana's house described above seems nothing special. Indeed, probably because informal work for others is so widespread and sometimes confusing in Barrinha, it took me some time to notice that some of these relationships (e.g., the one between Rafaelzinho and Dona Joana) were not quite fitting into the same framework of informal work. The more I got to know village life and people, the more I realized that these relationships differed mainly in two aspects: the affect involved and its rhythm or temporality. The affect that had gradually evolved between Dona Joana and Rafaelzinho exceeded that of other working or service relationships. There was

more than the necessity of having a service done, and there was more than the need for gaining some money.

“This boy is a hard worker,” Dona Joana used to say about Rafaelzinho, not without a hint of admiration. She told me that when he had started working for her, she was both impressed by his dedication and responsibility for doing tasks without ever complaining, and upset and worried when he passed periods of several days drunk, without being able to do anything. This mixture of emotions could be sensed in her gestures, her expressions and the words she directed at him. At times proud, at times disappointed, at times guilty, deeply moved, then worried, annoyed, fed up, or sad and then again grateful and tender, are only some of the feelings that revealed her strong affection and her decision to take care of the young man. One evening, similar to that described above, when we were watching the telenovela together in her living room and Rafaelzinho kept asking her for money, returning tipsier and tipsier, Dona Joana confessed to me that over time Rafeaelzinho had become like a son to her. Although he sometimes drove her crazy, she felt responsible for him; she could no longer just send him away. Similarly, I never saw him treat her with disrespect. Even in moments when he seemed to lose all control over his body, he never raised his voice against her and never became aggressive or insulting. Through his respect he seemed to return, albeit in subtler ways, her feelings of affection.

Secondly, the relationship between Rafaelzinho and Dona Joana differed in its temporality. I recognized this difference only once I got familiar with the various rhythms in which everyday life in Barrinha unfolds, some of which I explored in previous chapters. Whereas other informal work relationships were rather punctual and scattered in time, that between Dona Joana and Rafaelzinho appeared to be much more continuous and followed a relatively regular pattern. His work for her became more intensive in the weeks in between good shrimp tides and during weeks of bad tides. These periods of calmness that abruptly followed the excited, agitated, busy, and work-intensive intervals of shrimp tides, it turned out, were the most difficult to handle for Rafaelzinho and the other young single men. Engaged in and committed to particular fishing teams during the shrimp tide, the longing for alcohol and drugs would temporarily recede into the background. This does not mean that they always managed to remain sober during these periods. To the annoyance of the fishing masters, responsible for their team, it occurred from time to time that the whole team could not leave for fishing because they had lost one of their members to the temptation of alcohol. However, the occupation and pressure from the team usually helped repress desires. When the last

fishing trip of the shrimp tide was over and the shrimp fishers either left the island to return to their homes and join their families on the mainland, or those living permanently on the island took advantage of the calmer days to take care of house and garden, to spend time with their wives and children, and to repair fishing nets, the younger fishermen without families, without houses and gardens to care for, were suddenly left without any occupation, and with money in their pockets. With no entertainment, no parties, restaurants or stores in which to spend their freshly earned money, and without responsibility for wives or children, many were tempted to spend it on cachaça or crack.

"We are young, we just want to live," Rafaelzinho told me one day when he was annoyed because others tried to keep him from drinking. What began as the temporary seeking of amusement, however, often merged into vicious cycles. Especially of crack, it was said that one hit was never enough. After one you wanted another and another and another one until you had no more money or there was no more available. Hence, many of the young men struggled to return to work after the calm week in between shrimp tides was over. Also, some fishing masters, unsettled by the excessive alcohol and drug consumption and not willing to take the risk of losing a crew member during the fishing period, refused to integrate those young men into their teams for the upcoming shrimp tides. One week without work thus quickly turned into two, three or more weeks without income. The addiction intensified, the money ran out, debts increased and the reintegration into the fishing teams got more and more complicated.

Recognizing these patterns, Dona Joana and other women attempted to bridge the calm intervals by employing the young men for a range of diverse tasks in their gardens. Continuously providing work in between tides, paying the men with cooked meals, new clothes and only small amounts of cash at a time, all formed part of their caring practices through which particular solidarities arose. These solidarities, I argue, are yet another way to build continuity and constancy in that they fill the idle spaces in between shrimp tides or during periods of successive bad tides, which can be difficult to handle for young fishermen. By fighting addiction – or at least creating a relatively safe space to live with addiction – by providing a place to stay or return to in difficult times, women's caring practices contribute to turning the island into a refuge, as well as to offering future perspectives to these men.

Mitigating the negative effects of dissonant timings

It was just after 5 o'clock in the early evening. One did not need to look at the clock or the sky to know that dusk was approaching because the itchy, burning stings of the *mosquitos* (biting midges or no-see-ums), suddenly appearing out of nowhere, inevitably announced it. Their invisibility, due to their small size, and their particularly itchy stings made them more annoying than the bigger *muriçocas* or *pernilongas* (mosquitos) so that many people either sought refuge in their houses or continuously whirled a piece of fabric around their legs at that time of the day. On this evening, however, a sudden agitation swept through the village. Next to me, Dona Joana grabbed a cooking pot and a wooden stick, went to the back of her house, and started banging on the pot. The swelling noise from the surroundings hinted at other inhabitants' joining in the pot-banging. Interpreting my confused and questioning look, Maurício, who was standing next to me, pointed to the sky and explained that there was a lunar eclipse (*eclipse*) tonight. "My mum and others," he continued as we watched the shadow slowly covering the moon, "say that by waking up the cashew trees, its fruits and nuts will get less burned." The trees, Dona Joana later told me, adding to the explanations of her son, who only partly believed in the efficacy of the pot-banging, sleep at night like people do. Only if people wake them up are the trees are able to defend themselves against the force of the lunar eclipse.

Although this was the first time I had watched a lunar eclipse in a deltaic village, I had encountered the damage that was said to be caused by the eclipse before. People kept showing me brown, wilted and scarred parts of fruits and nuts, explaining that the eclipse had burned them. Some had even lost considerable parts of their annual harvest to the eclipse. The force of the moon in general, delta inhabitants often emphasize, is immense. Besides burning plants, it interferes in a variety of activities and may change the behaviour of certain animals. For instance, wood should not be taken from the mangroves on days when the moon is visible in the sky by daylight, people say, for it will likely rot and "create bugs" (*criar bichos*). On the deltaic islands, people are thus usually attentive both to the moon's phases as well as to its position in the sky, which not only allows them to determine tidal forces and levels but also to know which activities to abstain from.



Figure 24: Caring for animals - mitigating the negative effects of dissonant temporalities

Some days after the incident with the lunar eclipse, Dona Joana looked worriedly at the sky. Pointing to her breeding ducks she explained to me, "the moon is not good. When it is on that side [westwards] the baby ducks hatch one here, one there, one now, the other later and all are really weak." Such uncoordinated hatching made it impossible for the mother duck to properly care for her offspring, so that most died. The next morning when a single duckling hatched, Dona Joana therefore took it to her home immediately. She decided to care for it until it was strong enough to follow the older ducks on its own; she hoped that this way it would manage to survive in spite of the moon's bad position.

These last two examples bring me back to the interdependency and the multiple entangled temporalities of humans and non-humans in relational webs. Whether it is the moon's eclipse damaging the ripening fruits or the moon's cycle interfering with the hatching ducks, both of these examples illustrate situations where different rhythms generate conflicts through their misalignment. People's attention to the potentially conflicting rhythms enables them to intervene in time and, through caring practices, mitigate the damage caused by the clashing rhythms. Again, care is a means of maintaining webs of life, of ensuring at least some

continuity in a world of constant transformation, with sometimes abrupt and volatile changes and dissonant temporalities.

Conclusion

On the deltaic islands, as I have shown throughout this chapter, both women and also other-than-human beings play crucial roles in caring practices. Care is not limited to human beings but emphasizes once again the entanglement and interdependency of human and other-than-human beings in relational webs. Women in the Parnaíba delta speak with similar affection of their family members and the plants and animals in their home gardens. They not only use the same terms – *cuidar* and *criar* – when talking about relations of raising, growing and caring but also their affection and particular practices of care for these diverse beings are not so different: they include sweeping and cleaning the house, the garden and the ground beneath plants, preparing food, talking, listening and being present, and nursing in case of illness. When women care for their children, the latter grow healthy and develop well; when women care for cashew trees they flourish, and the trees care, in turn, by providing big, tasty fruits and nuts.

Women's caring practices, I have pointed out, are embedded in webs of complex interrelated multispecies relationships. In these webs, humans are not the only ones caring for others, and neither do they take the position of outside observers. Both humans and nonhumans actively participate in co-creating, co-sustaining and co-maintaining lively and flourishing webs.

Care, as understood in this chapter, involves concrete practices and is always inherently selective and ambiguous: the same caring practice might nurture some beings, as much as it harms others. Care can therefore neither be understood as good or bad, nor as a fixed set of practices; what is at stake is continuous critical engagement (Van Dooren 2014b), care-full attention and curiosity (Haraway 2008), and an ongoing questioning of what caring means, what it does and to whom in regard to specific places and particular times.

This ambiguity also becomes visible when focusing on the temporalities of care, an aspect that is less explored in the current literature on care. Through the example of burning practices in the second part of this chapter, I have emphazised the importance of the specific timing of caring practices. Burning of home gardens or forested areas can indeed be sustaining and nurturing or highly destructive according to *when* it is done.

Further focusing on the temporalities of care, I have also shown how care can be a way of creating continuity – an aspect that becomes especially meaningful in the context of the continuous, sometimes abrupt and volatile, transformations characteristic of the deltaic lifeworld. In a world where, as I have pointed out throughout this thesis, movement and change rather than stasis are the norm, endurance, stability and continuity have to be actively created and maintained. In this sense, this chapter adds yet another facet to this argument in that it illustrates how caring practices can create, foster and maintain continuity, be it by remembering past times, by leaving traces for future times, by bridging "in between" times or by mitigating conflicting and potentially disturbing rhythms.

Similar to other practices of everyday life on the deltaic islands, care, too, requires attentiveness and continual adjustment to other beings' temporalities. If this repetitive and constant perceptual alertness creates a familiarity that allows people to gradually improve their specific care, it can also be tiresome and very time-consuming, an aspect that seems important to underline, for care is too often confounded with overall positive, comforting and enjoyable feelings (Puig de la Bellacasa 2017). Also, if some repetitiveness of cycles can be expected, it is important to emphasise again that on the deltaic islands, *tempos* and other rhythmic phenomena never happen in the exact same way as before; unexpected change and surprise are always present, and therefore care goes along with uncertainty. Interestingly, however, as Puig de la Bellacasa (2017) points out, the attention that care requires can "thicken" the present and thereby contribute to – at least temporarily – suspending feelings of emergency, fear, uncertainty and anxiety for the future.

Chapter 7. Peaceful life – *Vida sossegada*

Shrimp tide (I)

Gently, Maurício moved the rod of the canoes' outboard engine leftwards to glide it to the right around the mangrove islet. It was the last of many river bends on our one-hour boat journey from the mainland town of Água Doce. The scattered houses of Barrinha village now appeared in the evening twilight. The houses were dark; the generator had not yet been switched on. Once again, the waves in Barrinha's bay were strong. Maurício had to steer the canoe towards the beach in an outward curve, breaking the waves at right angles. If he would have moved it straight, parallel to the waves, the canoe might have overturned in a matter of minutes. The canoe's bow now hit the waves; I felt the first splashes on my arms and in my face. Skillful hands quickly stretched the plastic tarpaulin over the purchases and backpacks that were piled up in the middle of the boat. The water spilled over the thwarts, soaking my shirt and shorts. I felt the warm sticky water on my skin and the salty taste on my tongue. The tide was still high, so Maurício could moor the canoe close to the sandy shore. I swung my legs out of the canoe and glided my feet along its wooden planks into the water until my toes were immersed in the soft muddy ground. Soggy, muddy, salty: what had felt unpleasant on my first arrivals, I realized, had now become a familiar sensation – as if it was Barrinha's own way of welcoming.

It was in these salty, muddy waters that Seu Adriano, who had arrived the afternoon before from the village of Bom Gosto nearby Água Doce with his shrimp fishers, would be working for the next seven days. When we arrived, Seu Adriano was about to leave with four teams of four men each to fish for red shrimps. Depending on whether the tide was good, the men would work four, five, six or even more hours each night. On the previous night, Seu Adriano said while greeting us, they had come back after three hours, with not even ten kilograms of red shrimps. The water was still too clean, the men agreed.

Shrimp tide (II)

I met Seu Miguel in the *barracão* in the morning. Seu Zé was writing down the amount of Seu Miguel's catch from last night in his notebook. He put it next to Seu Miguel's expenses – the basic supplies he had advanced to him during the seven-day fishing period. Seu Miguel was not satisfied with the catches of the last nights. The water was still not good, he told me. The water was not dirty enough, added Luciano, who was fishing in Seu Miguel's team during this tide. Both men originally come from Jardim, another of the mainland villages in Água Doce's surroundings. Both men had learned to fish as young boys accompanying their fathers. As a young man, Seu Miguel had moved to Fortaleza, Rio de Janeiro and São Paulo, he had worked with the navy and had later earned money in a t-shirt printing company, until a couple of years ago, now in his forties, he had decided to come back and settle in Barrinha, making a living with red shrimp fishing. Luciano had not come back to Barrinha for a long time. He had worked both in the city of Túpoia, bordering the delta on its western Maranhense end, and for around eight months in São Paulo. Now in his early thirties, he did not hesitate when this summer he was offered to work in the carnaúba wax extraction in the city of Parnaíba. His boss, Luciano explained, who mainly sold the carnaúba wax to Chinese importers, made good money with it. Luciano and the other workers should have earned 45 R$ per day. However, after working for five months, Luciano told me, his boss ran off to the south of the country. He had paid his workers for three months only. Having, as usual, worked without a signed worker ID (*carteira assinada*), a document providing benefits, a minimum wage and recognition as a worker, Luciano had no means to get his lost two months' salary back. He had also returned to Barrinha for fishing because it was becoming ever more difficult to find an honest employer who did not aim to exploit his workers, Luciano said, frustrated rather than upset. "With fishing," he added, "one can at least gain some *trocados* (loose change)."

***

Moving back and forth between the island and the mainland is, as I have pointed out earlier, rather common in Barrinha. In this chapter, I will further explore stories of *moving to* the island. Some of these stories are stories of new arrivals, including of elderly people and

complete strangers, but most are stories of return. People who had previously already fished or lived in Barrinha decided at some point in their life to come back – either temporarily or more permanently – to live or fish on the island.

Similarly to stories of leaving the island,[93] stories of return also relate to a host of reasons. Unemployment on the mainland, repeated exploitation and difficulties in finding a new job, experiences of violence, or people missing their families in Barrinha are just some of them. The stories of return commonly emphasize the decision, rather than any necessity, to come (back) to live in Barrinha. One essential reason for this decision, people often told me, was the islands' *vida sossegada*. *Vida sossegada* can be translated as peaceful and calm life, but also refers to a relaxed life, where one is at ease, a life without major preoccupation and turmoil.

In the following, I will focus on three facets people commonly highlight when talking about and praising the islands' *vida sossegada*. First, descriptions of the *vida sossegada* often relate to narratives and praises of the island's fertility and abundance, as I described earlier (chapter 3). In their narratives of return and choosing to live on the island, people often pointed out the wide range of possibilities that the island's diverse milieus and their continuous transformations offer. This abundance of possibilities is essential for a *vida sossegada* in the sense of a relaxed life without major worries, not in that it allows people to become rich, but in that it always offers the possibility of feeding one's family or at least making "some *trocados*" (loose change), as fishers put it, without too much effort and preoccupation.

A second central element of the *sossego*, the peacefulness of island life, is the power of deciding on one's own life. As pointed out in Chapter 5, shrimp fishers commonly live "according to water" (*por água*) or from "water to water" (*de água em água*) – from one tide to the next tide – without worrying and planning too much for the future. Some squander their money immediately after a "good tide," some buy fridges, furniture or even TVs only to resell them during subsequent "bad tides." Moreover, many Barrinhenses say that they enjoy island life because "there are no commitments" (*não tem compromissos).* Deciding on one's own life, including on how and when to spend one's money and on what to do when, becomes meaningful in relation to the experiences of marginalization, exploitation and deliberate deception many delta inhabitants have had. But it also relates to the continuously transforming environment, to the open becoming characteristic of island life, where remaining flexible is crucial in order to jump to take advantage of opening opportunities and where

[93] See chapter 3 (section "povo rodado").

managing one's own time enables one to enjoy the island's abundance.

Third, delta inhabitants often frame island life, and especially shrimp fishing, in terms of autonomy and freedom. Contrasting these narratives with the example of a "bad tide", I point out that uncertainties can be very differently experienced. Whereas to outsiders or those unfamiliar with the islands' continuous, often unexpected, and sometimes volatile changes, these transformations may appear as highly uncertain, delta inhabitants have developed the knowledge and skills to navigate such a transforming world. For them, experiences they have had on the mainland, or in encounters with more powerful outside actors, that have included violence, sudden unemployment or being deliberately cheated, are much more uncertain than the continuous transformations on the deltaic islands. In contrast to the former, which leave little space to act, the open becoming of movements on the deltaic islands, although challenging and constraining at times, can also be a source of possibility, opening up spaces of autonomy, freedom and good life, for those who know how to navigate an ever-changing world.

Nevertheless, autonomy and freedom, the *sossego* of island life, has been threatened by different actors and their projects and impositions (e.g., conservation, Fishermen's Colonies, evangelical church, tourism investors). In the last section of this chapter, I will explore how delta inhabitants, well aware of these threats, have found a way of maintaining at least some autonomy and control over their space, by playing with and taking advantage of the delta's shifting materialities.

Return and refuge

Shrimp tide (III)

It had rained a lot last night. Because of the rain, some shrimp fishing teams had not even left for fishing and the others had come back early with only a few kilos of shrimp. "When it rains you easily get lost on the water," Seu Nivaldo told me, while inviting me to sit down on a small wooden bench in front of the fishing hut. "You can hardly see anything with the rain and easily lose your orientation," he explained. "We were in the middle of the channel last night, when suddenly it started to rain heavily and the wind got stronger. We waited for the rain to stop a bit and when it lightened up, we realized that the wind had driven us close to Mandacarú [a fishing

spot close to the mouth of a tidal channel], we were close to the open sea already! That's really dangerous, it takes you away so fast."

Seu Nivaldo, like many other shrimp fishers, commonly came to Barrinha during moon tides. He stayed around 7-8 days and then returned to his home and family in a village on the nearby Maranhense mainland. In his early 50s when I met him, he had been coming to Barrinha since he was 10 years old. His mother had died early, he explained, and so his father took him along when he went fishing. That was how he had learned to fish himself. Seu Nivaldo, however, also worked as a carpenter. "As a carpenter, I earn much more, around 2,500-3,000 R$ per month, and I get social security," he told me, and I could still feel his disappointment with the poor catches of the previous nights. However, in the course of our conversation, he pointed out the difficulties of finding stable employment as a carpenter. Sometimes he found work for a few months, but often only for some weeks. In periods of unemployment, he kept coming to Barrinha to fish. During good tides, their fishing team could make catches up to 250 kg working seven or eight days. When the tide was bad, as now, they would leave with some 60kg only. Seu Nivaldo pointed out that the 10R$ fishers got for a kilo of shrimp was not a lot compared to the prices shrimps were sold for on the mainland. "Fishers do not get rich," he concluded, shrugging his shoulders. Nevertheless, shrimp fishing offered him a certain constancy and certainty, an activity he could always return to, allowing him to earn at least some money and by this to bridge periods of unemployment.

***

Such a return to fishing during times of unemployment or when experiencing exploitation by employers on the mainland was indeed not uncommon among shrimp fishers. Luciano, Seu Nivaldo and others, who temporarily came back for shorter or longer periods to fish for shrimps in Barrinha, commonly portrayed the island as a refuge, a place they could return to anytime. We will see throughout this chapter that despite the difficulties in foreseeing good and bad shrimp tides, despite the poor catches fishers sometimes made, shrimp fishing appeared in fishers' narratives as a reliable activity, contrasting with the uncertainties of their employment on the mainland.

Other stories of return or choosing to live on the islands similarly emphasized the island as a safe, calm place in contrast to growing uncertainty and violence on the mainland. Dona

Valentina, 87 years old when I met her, had decided a couple of years previously to move to Barrinha where one of her daughters, a granddaughter and a great-grandson lived. Her pension allowed her to buy a small mud house covered with palm leaves. Although originally from the nearby Maranhense mainland, Dona Valentaina knew island life well before arriving. As a young woman, she had worked for many years as a maid on the neighboring Igoronhon island, where until the 1990s salt works had offered employment for people throughout the region (see also chapter 2). The mainland town where she had lived before, Dona Valentina explained, recently had become increasingly violent. Moreover, groceries had become more expensive, while wages and pensions had largely remained the same. Dona Valentina especially appreciated the peacefulness (*sossego*) on the island. In her home garden, she raised chickens and ducks and she grew tomatoes, peppers and herbs in raised beds. During shrimp tides, she often cooked lunch for some of the shrimp fishers who in return brought her fresh fish, and occasionally she undertook journeys to some of the villages along the mainland to exchange dried fish for manioc flour. This way, on the island, in contrast to her life in town, she had to buy very little and could live well with her pension. Moreover, she hadrecently started sharing the house with an elderly single man. The two kept each other company; she looked after the household and garden, while he grew corn, beans, and watermelons and occasionally went fishing. Dona Valentina emphasized that this sense of community, mutual help, and solidarity was what she had missed most when living in the mainland town.

The calmness of island life was also what had persuaded Dona Josefina, in her sixties, to move from the mainland town Água Doce to Barrinha Island. She arrived towards the end of my period of fieldwork to live together with Seu Fernandinho. Dona Josefina was still a little sad about leaving her house on the mainland behind. She had received a brick house from the "*Minha casa, minha vida*" (My house, my life) program[94] a few years previously. But in recent years, drug gangs running a *boca de fumo* near her house had gained more and more influence in her neighborhood. A few weeks before I met her, a desperate young man, who probably owed money to the drug gangs, had suddenly entered her house. He had threatened her with a knife and had demanded money or other valuable things. Shocked at first, Dona Josefina had managed to escape, jumping over the garden fence and fleeing to a friend's house. From then on, she had been afraid to return to her house. She had nothing valuable and no money to give to burglars, so it was even more dangerous for her. She regretted having to

[94] MCMV is a large Brazilian public housing project. Created in 2009 by the government of Luís Inácio Lula da Silva, the ambitious project offers residents with low incomes financial options to either buy a home constructed by the government or to renovate an existing one.

leave her house since she had never had such a beautiful house, all with tiled floors.

When narrating their own arrival, return or choice to live on the island, or when commenting on the stories of fellow villagers, people frequently described and praised life on the island in terms of *sossego* or *vida sossegada.* The above stories illustrate some of the different meanings the noun *sossego,* and the adjective *sossegada,* can take on. The most straightforward understanding of *vida sossegada* would be a literally peaceful, calm life, in the sense of a life sheltered from the growing violence occurring in some urban areas on the mainland, as conveyed through Dona Valentina's and Dona Josefina's stories. Yet, the descriptions revolving around *vida sossegada* go beyond such a direct translation. A point that often comes up concerns the possibilities the islands and their surroundings offer. One can cultivate the fertile soils, gather fruits and nuts in the forests, catch crabs and seashells in mangroves and on sandbanks, fish in rivers, creeks and lakes. With only a few hours of work per day, people commonly emphasize, one can get enough food to live well. "Here only those who want it go hungry" (*aqui só passa fome quem quiser*), was a statement often made in this vein. Shrimps undoubtedly play an important role here, not only in people's stories of moving and returning to the island but also by keeping people there. Indeed, many times *Barrinhenses* either told me "I move where the shrimps move to," or "if there were no shrimps, I would no longer be here." From this one can conclude that Barrinha would probably not exist in the form I got to know it without shrimps. But also planting in home gardens, cultivation of fields and the raising of small livestock, together with mutual aid and exchange is essential to find *sossego*, as for instance Dona Valentina pointed out. Here, *vida sossegada* refers rather to a relaxed life with a variety of possibilities at hand, which allow one to always find a way to make ends meet without too many worries.

"From water to water": Fleeting money and reluctance to commitments

Shrimp tide (IV)

When I entered Dona Joana's kitchen around seven o'clock in the morning, she had been up for two hours already and was preparing the third thermos flask of coffee. Throughout the morning, Dona Joana's kitchen was always full of a busy hustle and bustle. As it had rained the previous night and the benches, stools and hammocks under the cashew tree behind the house were still wet, a group of people huddled

together in her kitchen, cups of hot coffee in their hands. I quickly picked up from the conversations that last night's shrimp fishing had not been rewarding either. Some teams had caught 12, some 15 and others 18 kilos. That was not enough for four men working a whole night. If the next days' catches did not improve, the fishers would hardly be able to pay for their expenses.

Seu Fernandinho, Dona Joana's brother, passed by the kitchen door, obviously annoyed. His team had had to abandon the last night's fishing because one of the team members was missing when they were supposed to leave. This was not uncommon, as mentioned before; in particular during "bad tides," the risk of losing a team member, either because he got demotivated or because he could not resist to the temptation of sugar-cane rum (*cachaça*), became a serious concern.

As soon as Seu Fernandinho left together with some of the men, the women's conversation turned into an excited, agitated chatter. Seu Fernandinho, it seemed, was going to sell his bed to Dona Márcia, if the next night's fishing did not yield more. I was surprised at first. The last two tides had been good, and Seu Fernandinho's team had fished several hundred kilos of shrimps. The price was currently around 10R$ per kilo, which meant that he had surely gained more than a monthly minimum wage (954R$) during the last weeks. How come he had already spent all that money, I wondered. The women shrugged; they were not surprised. Her brother, Dona Joana started explaining, had always lived in this back-and-forth of buying and reselling. He had once bought a fridge, then a nice cupboard, and once even a nice TV, spending almost all the money he had earned from a tide. Other times he had squandered the earnings of a tide in a matter of a few days on alcohol and parties.

***

Saving money for worse tides or times was not a very common thing in Barrinha, especially among fishers. Most fishers lived "from water to water," as they called it. This meant that they lived and spent money from one shrimp tide to the next shrimp tide without worrying too much about the future. Not that people did not invest at all. Some bought furniture, TVs or fishing nets. Some families also started investing in pieces of land or the construction of houses. Women often took a leading role in these projects. For instance, a couple that lived in a simple mud house in Barrinha once invited me to visit their home village on the Maranhense

mainland, to which they frequently returned. Rather surprised, I discovered that they had constructed a big brick house in that mainland village, where some of their children, grandchildren and other family members lived. Dona Joana's family had recently started to construct a brick house on their piece of land in Água Doce and her son Maurício had bought a fancy motorcycle to drive around in and between mainland towns and villages. However, these investments were made rather on the mainland than on the island, and as Fernandinho's example illustrates, many of the purchased items were sold again when necessary.

De L'Estoile (2014) observes that former sugar-cane wage workers in the rural settlements in Northeast Brazil where he did research, generally considered money as being of short-term use. Therefore, credits, intended to help families to launch new projects (crop cultivation, fish farming, etc.), were often quickly spent. Whereas NGOs, agricultural technicians and state officials complained about people's unpreparedness and lack of administration, de L'Estoile (2014) argues that this fast and seemingly "unreasonable" spending of money cannot be understood in the context of a solely economic framework. Based on people's frequent statement of "money is good, but a friend is better," he shows that the short-term relationship with money is opposed to the long-term relationship of "friendships." If people considered the former as useful for maintaining a "good life," the latter, seen as durable, was more valued, and especially in times of crisis proved to be much more efficient in mitigating uncertainties (de L'Estoile, 2014, 70).

Similarly, though in a very different context, Millar (2018) shows in her ethnography of a garbage dump in Rio de Janeiro that the earnings of *catadores*, the "pickers" who collect and sell recyclable waste, usually vanish rather quickly. The question of spending money, Millar (2018) notes, is inextricably linked to another question: that of spending a life – or, in other words, the *catadores*' vanished income relates to the question of what it means to live well. Millar (2018, 99) argues against considering the *catadores*' life, which diverges radically from middle-class social norms and ideals, in terms of "bare life" – that is, mere survival – which would "no longer raise the question of *how* one lives, but just that one lives." Distancing herself from common accounts of the urban poor, often based on the assumptions that the poor are incapable of saving and managing money, Millar (2018) suggests considering *catadores*' spending not through a frame of scarcity and excess but rather as a moral argument that expresses their own understanding of what constitutes a "good life," of what is valuable, worthwhile in life.

Such observations are also pertinent for Barrinha. The fleeting money from a tide, as well as

Fernandinho's back and forth of buying and reselling, are far more complex than explanations of mismanagement or unreasonable spending might suggest. Living from "water to water" can be better understood in relation to ideas of living well, or what Barrinhenses call "*vida sossegada*".

Indeed, the short life of money, and more broadly, life spent from one tide to the next, relate to another series of comments I often heard about island life being free of commitments (*compromissos*). "Here there are no commitments" (*aqui não tem compromissos*), people frequently told me, to underline what they perceived as positive aspects of island life, and to contrast it with life in the mainland's cities, full of fixed plans, schedules and obligations to follow. Again, this did not mean that people did not make plans at all, but rather that plans could change from one moment to another, often without an obvious reason. For instance, it happened various times during my fieldwork that fishing or other trips to which people had invited me a day before or even on the same day, were suddenly canceled. I was then told that it was already too late to leave, that the tide was no longer good, although we had been waiting for the tide for a while before, or that there was no gasoline, which the person however had already known when he or she had invited me shortly before, or simply that we should postpone it to the next day. At the beginning of my fieldwork, such cancelations often frustrated me; I had to change my plans, find something else to do, find another person to meet. I realized that making plans had another meaning on the deltaic islands than I was used to, that scheduling something for the next day did not at all mean that it was going to happen in that way. I thus learned to be open and flexible to changing plans, to take the opportunity whenever someone very spontaneously invited me – even if it meant leaving for a trip immediately – and that canceled trips usually meant a postponement, rather than a definitive cancelation.

Two other aspects of this reluctance to adhere to fixed schedules stroke me even more. For one thing, many island inhabitants received social assistance on a monthly basis, either pensions (*aposentadoria*), or allowances for widows or widowers, or they were beneficiaries of cash-transfer programs (*bolsa familia, bolsa escola*). In order to receive these payments, people were allocated a personal date towards the end of the month to withdraw their money at an ATM of the Federal Savings Bank.[95] If not withdrawn within a certain time limit,[96] the

[95] Caixa Econômica Federal.

[96] According to official documents and websites limits are between 60 and 90 days for pensions and *bolsa familia* respectively. However, according to my interlocutors, they lost access to their money after much shorter periods (some days or weeks). Some also told me that they had randomly lost benefits of the *bolsa familia*

payment went back to the government and people thus lost it. Surprisingly, although very well informed about their respective retrieval date and the deadline, it happened more than once that a person did not withdraw the money in time, most often not because of an emergency that would have prevented the person from going to town, but because the person had decided to do something else on those days. Secondly, some women were at times asked by tourism companies that wanted to make a journey to the island to cook for a group of visitors. Dona Joana, who sometimes accepted these propositions, but generally needed other women to help her, told me that it was usually very difficult for her to find other women willing to do so. They did not like such commitments, the women often explained, adding that it was a lot of responsibility, and in the end, you never knew for sure if the company would really pay you or if it would cheat you (*enganar*).

On one hand, living from "water to water" and the reluctance to make commitments can be understood in the context of the open becoming characteristic of the deltaic islands. Where transformation is continuous, where things are difficult to predict and never sure to happen, neither accumulation, be it of things or money, nor fixed plans and schedules make much sense. One is better off remaining attentive, flexible and ready to switch to alternative activities and opening opportunities. In other words, one tries to stay with the flow, to live in the rhythm of the tides, and opts to keep things flowing rather than to forcefully fix and accumulate.

On the other hand, living from "water to water" and a reluctance to make commitments, I propose, are two other facets of the island's praised *vida sossegada*. Spending money when and how one wants to, as well as choosing what to do and when by avoiding commitments, can then be seen as part of what Millar (2018) refers to as the "spending of life," enabling people to actively decide on the *how* of their lives. Barrinhenses indeed rather adopt what Sahlins (1972) in his famous text "The Original Affluent Society" calls the "Zen strategy." Critiquing the prominent capitalist models of the time, which saw affluence as the satisfaction of needs by producing much, Sahlins argues that there is an alternative model. Through a "Zen road to affluence" hunter-gatherers become affluent not by producing much but by desiring little. The Zen strategy then allows people to "an unparalleled material plenty – with a low standard of living" (Sahlins 1972, p. 5-6). Hunter-gatherers thus appear as left behind by "progress" only from an ethnocentric Western viewpoint. Rather than centering their way

program without any reason. This could be related to the political shifts that were occurring since the Impeachment of President Dilma Rouseff in 2016, as well as the rampant corruption among politicians at that time.

of life on the accumulation of material goods, they emphasize alternative values such as leisure, mobility and above all freedom.

On the deltaic islands, underlining freedom and choice gains significance in two senses. For one thing, the possibility of mastering one's own time, activities and spending of money becomes meaningful in relation to people's repeated experiences of marginalization, exploitation and cheating (*enganar*) by more powerful outsiders. Dona Joana, for instance, told me that many people had already tried to cheat her. One of them was an owner of a *pousada* (lodge) on the Canárias Island. "He was crazy about buying a piece of land in Barrinha," Dona Joana explained. He wanted to construct a *pousada* at the beachside and promised work for Dona Joana and Seu Zé. However, the shrimp fishers would have to leave and could no longer come to fish in Barrinha. He offered a lot of money and new houses for Dona Joana and her family. He insisted, she told me, but she repeatedly refused. "I'm no fool," she said, laughing and shaking her head. "He wanted to make us depend on him. Maybe another person would have accepted the money; it was a lot of money. But I have a heart and I won't be fooled. How could we send our fishers away?"

Secondly, deciding *when* to do *what* becomes particularly crucial in a context where, as I have outlined in previous chapters, temporal alignments matter – where "everything has its time." This brings me back to the narratives of abundance. It is only by remaining flexible, by being able to jump to make use of opening opportunities, that one can take advantage of the island's praised abundance. In other words, diverse – albeit elusive – possibilities allowing for a *vida sossegada* mostly become enjoyable only through the mastering of one's own time.

Autonomy and freedom

Shrimp tide (V)

"*A maré tá ruim!*" (the tide is bad!), complained Seu Adriano in his deep rough voice. He was washing one of his *redinhas* (fine-meshed trawling nets), at the beach of Barrinha. The previous night, barefoot in hip-high water, Seu Adriano and his team had dragged the net over the muddy ground of the "beaches" (*praias*), the muddy shores in the intertidal zone, amphibious transitions covered by high tides and exposed by low tides. The red shrimps they target hide in the soft, squishy mud and – upon contact with the net – they jump up and get caught in the *redinha's* fine

meshes. Seu Adriano repeatedly dipped the net into the water while hitting it with a wooden stick to shake out the remnants of mud and half-rotten plant material. His gestures hinted at his discontent. “It’s really bad,” Seu Adriano specified, “because we go out fishing, we work the whole night to catch ten or twenty kilograms. That doesn’t work!” Fishing for almost forty years in Barrinha, Seu Adriano was among the most experienced fishers in the area. Shrimp fishing, he said, had become more difficult these days. Not so much because of the shrimps or the tides; there have always been good and bad tides, but, as Seu Adriano put it, because of the material. Seu Adriano recalled that before, they used to fish only with the *puçá,* a small cone-shaped trawling net. The *puçá* was of two *braçadas*[97] only and could be dragged by two men, whereas the *redinha* used nowadays was up to twenty *braçadas*. If the increase in length and number of nets was the main reason for the difficulties, Seu Adriano, however, also pointed to a second reason. Seu Zé being currently the only buyer, he had much more freedom to decide on prices, which sometimes happened to the detriment of the fishers.

Seu Adriano had finished cleaning the net now and some men from his team helped him to gather and fold the net. As he looked up, the frustration and disappointment were giving way to the familiar radiance of experience, confidence and profound connection to the sea, the reason why “his” men respectfully called him master (*mestre*). This tide Seu Adriano had four teams – that is, a total of sixteen men fishing with him. As *mestre,* Seu Adriano explained, he was responsible for his team and for the material – nets, boats, motors – he provided to the men. He decided when to leave for fishing, where to go and when to start dragging the net. Of the fishers I met, Seu Adriano was the only one fishing with more than one team. Supervising so many men required a lot of experience, knowledge and the men’s confidence, but it could also be rewarding because the *mestre* got – in addition to his share from the total catch for fishing – extra shares for providing the material. “You know,” Seu Adriano now told me looking straight into my eyes, “I have never worked, and will never work for someone else. I always worked for myself; fishing allows me to work for my own account.”

***

[97] *Braçada* is an old system of measure still commonly used in rural areas. *Braço* translating as arm, one *braçada* is the length from the fingertips of one hand to those of the other hand, equivalent to approx. 2.20m.

As the example of a bad shrimp tide (*maré ruim*) illustrates, fishing can appear, especially to outsiders who are unfamiliar with the deltaic world, highly uncertain. Also, very experienced fishers as Seu Adriano regularly make bad catches and at times even fail to catch enough to meet their expenses during the fishing period. This uncertainty relates again to the continuous transformation and the open-becoming in which life on the islands unfolds. Things rarely remain the same. Movements can be anticipated but hardly predicted with certainty, opportunities might disappear and pop up in no time, shrimp tides are never sure to be good or bad. Moreover, oscillating prices, abruptly vanishing traders, the long chain of intermediate buyers and the difficulty in bringing the money back to the fishers, as well as increased numbers of shrimp-trawling ships add additional layers of uncertainty to the practice of shrimp fishing, as described in previous chapters.[98] Nevertheless, fishers like Seu Adriano commonly portrayed shrimp fishing in terms of independence and autonomy rather than uncertainty. Many fishers had been coming to Barrinha for twenty, thirty or even forty years, and especially when experiencing difficult times on the mainland, when losing their jobs in urban centers or when, as Luciano, experiencing exploitation by employers, they came back to the island to fish. In their narratives, they underlined their choice to come back, the possibilities fishing offered, and commonly praised the island's *vida sossegada*.

Such accounts resonate with works from anthropologists and sociologists who have portrayed artisanal fishing in Brazil, and particularly in the Northeast, as a reliable resource for the poor, as a historical space of autonomy and as a source of financial and food security in the face of economic instability and unemployment (Ramalho 2008, Cardoso et al. 2021).

Ramalho (2008), by tracing the historical emergence of artisanal fishing in Pernambuco, shows how art and autonomy became intricately entangled in the work of fishers. The Portuguese colonization, Ramalho (2008) points out, brought an understanding of work as art through the institutions of master craftsmen and craftsman guilds. In the 18th century, all those – even slaves – working in mechanical or handicraft professions were generally called artists. Nevertheless, the elite had prejudices against manual work, including fishing. Many artisans coming from Portugal hence taught the craft of fishing to Black slaves. Thereby, the former became slave masters (*senhor de escravos*) – considered an important form of social upward mobility – and the latter turned into slaves for hire (*escravos de ganho ou de aluguel*); they had to return part of their earnings to the masters (often a previously defined amount) but could keep the rest. The ecological characteristics, the danger and the unruliness of the sea

[98] See Chapters 4 and 5

made control by the slave masters difficult. Many slaves working as fishermen for hire not only worked but also lived self-sufficiently far from the eyes of their masters: they caught crabs and fish, and bought some *farinha*, allowing them to feed their families. Access to fishing tools was easy and, in contrast to land, access to water was free. In comparison to slaves working in sugar-cane fields or domestic slaves, slaves for hire could thus "experience a possible freedom and had the chance to buy their freedom" (Ramalho 2008, 268). In a slaveholding society, the greater control of their bodies and of their time contributed to the emergence of representations of fishers, seafarers and other workers of the sea as living and experiencing daily a certain autonomy and allowed them to pursue life projects geared towards freedom – buying the freedom of their wives, children and themselves (Ramalho 2008). In sum, despite the adverse context of slavery, artisanal fishing became a space for resistance and possible autonomy. For poor whites and Black slaves, artisanal fishing turned into the antithesis of compulsory labor, a realm of freedom or at least a promising way to attain it. Many of the above aspects and feelings of freedom and autonomy, Ramalho (2008) argues, have persisted until today in various fishing communities.

On the other hand, the obvious contrast between the uncertainty brought about by bad shrimp tides and life praised as *sossegada*, as peaceful, relaxed and without major preoccupation, illustrates that uncertainties can be experienced in a variety of ways. The apparent uncertainty – be it of fishing, tides, or other environmental fluctuations – should indeed not be perceived as overall negative, constraining and challenging but might also, as Scoones (2019), for instance, points out, be a source of possibilities, hope and autonomy.

Whereas delta inhabitants frequently described experiences of uncertainty they had had on the mainland (unemployment, exploitation, violence) or with more powerful outside actors (local politicians, fishermen colonies, payments of *bolsa familia*) in negative terms, as being deliberately deceived or "being stepped on" (*pisado encima*), they commonly talked about the uncertainty of bad shrimp tides and bad catches as part and parcel of fishing, rather than as something disruptive or negative. Fishers were sometimes annoyed, or complained as Seu Adriano did, but then told me that this was how things worked in the deltaic world, that the sea rules or that nature commands, and that humans had little to do about that. At first, this might give the misleading impression that people accept everything in a somehow fatalistic attitude. However, by closer examination, it becomes clear that it is precisely in the possibility of action that the difference lies.

Delta inhabitants described the urban areas of the mainland, both towns and cities of the

region and bigger cities of the southeast, as increasingly violent. Not that before it had been overall peaceful, but rather violence had taken on new dimensions. For instance, if before one had been at risk of being robbed, now one could be shot down by the thief without reason. Also, conflicts between drug-trafficking gangs were increasingly escalating, putting people at risk of being shot by stray bullets. In the face of such violence, which people experienced when traveling to or living on the mainland, especially because they were often relegated to the social margins, but also in the face of dishonest employers and local politicians' unfulfilled promises, people often felt powerless and deliberately deceived. "They always cheat us poor people," or "no one gives us assistance, everyone steps on us poor," were statements that people frequently made in this regard.

In this kind of uncertainty then, there is little space for action. This is what de L'Estoile (2014) calls radical uncertainty, which he argues lies beyond one's control, and in that differs from the uncertainty coming from the delta's continuous and open becoming. I propose that the continuous, sometimes abrupt and often difficult-to-predict transformations, even if they may appear highly uncertain, in particular to outsiders, are for delta inhabitants part of normality, of how things in the delta work. Continuous movements, whether volatile or not, although seen as commanded by forces that lie beyond human control, are not perceived as "crises," nor as exceptional situations. For people like Seu Adriano who over many years have acquired knowledge and skills to navigate the deltaic fluctuations, there is a familiarity in the open, uncertain becoming. It is precisely the openness of movements, their undetermined, ambivalent outcomes, and the many possibilities of their becoming that open up spaces for opportunities and hope. "It is in the premises that we do not know what will happen and that in the spaciousness of uncertainty is room to act," Solnit argues, that "hope locates itself" (2016: xii).

Indeed, on the deltaic islands, the continuous material transformation brings about not only dissolution or destruction but also the creation of new things, of new opportunities. Or to put it differently, in a world where nothing is fixed nor permanent, one knows that things, be they good or bad, are always temporary. The continuous transformation in this way is not a negative uncertainty but gives people confidence even in bad times, for instance when experiencing successive bad tides, that this situation will not last forever. Moreover, even if forces such as nature and the sea are not directly changeable, delta inhabitants have found various ways of actively navigating ongoing movements. I have shown in other chapters of this thesis that people create constancy in this transforming world through their practices, and

that flexibility and curiosity are crucial on the deltaic islands. Seu Adriano's example illustrates yet another way of navigating continuous and difficult-to-predict transformations and mitigating uncertainties. To my question of how they dealt with bad tides, some fishers simply replied, "you know, it is persistency (*persistencia*)." In bad times, pursuing activities even if they are not always rewarding might be a way of negotiating volatile transformations. In this way, it is on the one hand the confidence in his knowledge and skills, and on the other hand by persistently pursuing in good and bad times, that allows Seu Adriano nowadays, despite the sometimes bad catches, to speak of his activity as a shrimp fisher in terms of independence and autonomy.

No floating dock: attempts to maintain the *vida sossegada*

I have so far explored different aspects of what people refer to and praise as the islands' *vida sossegada*. The abundance of possibilities the islands offer is undoubtedly a crucial element allowing for *sossego*. Yet equally essential are the avoidance of commitments, the maintenance of the power to decide when to do what, and thorough skills and knowledge to navigate transformations, which altogether ultimately allow delta inhabitants to take advantage of the abundant yet elusive possibilities and convey confidence in continuous change and open becoming. Moreover, it is only in contrast with people's experiences of exploitation, violence, and marginalization that the feelings of autonomy, independence and freedom described in ideas of a *vida sossegada* can be better understood.

However, delta inhabitants are also well aware that the *sossego* of island life is facing diverse threats. This last section focuses on some of these threats as well as people's attempts to maintain the islands' *vida sossegada*, pointing out the central role of the delta's shifting materiality.

During my fieldwork, Seu Gabriel, in his late forties, upon losing his job as a construction worker in São Paulo decided to return to Barrinha, where he had spent most of his childhood and youth. Back on the island, he could count on his siblings' support. Together with his wife, originally from Belém do Pará, he first lived in the house of his sister, Dona Joana. During shrimp tides, he fished for red shrimps on his brother Seu Fernandinho's shrimp-fishing team. Not long after his arrival, he had enough money to start the construction of his own house. Yet when he arrived with his canoes heavily loaded with bricks, he was reminded of the

ambiguity of the island's terrain. A vast field of mud stretched out in front of Barrinha's beach; he had miscalculated the arrival of the high tide, which would have covered the intertidal zone with salty water. Resentment spread among the villagers who had agreed to help with the construction work and now had to carry the bricks across the mud. To construct a house here, some commented, you have to respect the timings.

This example once again illustrates the diverse ambiguities of the delta's shifting materialities, many of which I have pointed out in earlier chapters. For the sake of clarity, I will briefly recall some of them. The vast fields of mud spreading over the intertidal zone at low tide make access to most deltaic islands difficult – or rather dependent on the right timing. On my first arrival, I had myself experienced the difficulties of traversing such a soggy field, with mud up to my hips. Even those familiar with the delta's rhythms and transformations sometimes miscalculate or simply arrive at the wrong time, such as for instance Seu Gabriel and our experienced boat driver. The difficult access has contributed to delta inhabitants' invisibility and marginalization, and had complicated people's access to the urban centers, for instance, to sell products on the markets and to access education and health services. Many hence described to me the improved access in recent years as an overall improvement in their lives.

But the fertile muddy transitions between land and water also provide rich feeding grounds and refuge for diverse species and were thus sought-after areas for fishing, catching crabs and gathering seashells. The countless intertwining watercourses, the vast difficult-to-traverse mangroves, the sandy soils adverse to the construction of roads and the muddy intertidal zones largely kept unwanted influences and visitors at a safe distance or at least allowed for a certain control of arrivals. "Here is a good place to hide," or "if you hide for some days in the mangroves, no one will ever find you" were statements delta inhabitants often made to emphazise the futility of searching for someone in the delta. Obviously, these characteristics served some ambivalent purposes. For instance, historic accounts tell of pirates that roamed the deltaic area, and numerous delta inhabitants' stories revolved around smuggling and stealing. I heard several accounts of large ships that had run aground in the past and had quickly been robbed. And it was said of some inhabitants of Barrinha that they had literally been "stranded" on the island. Their past remained unclear; speculations hold that they had committed minor or major crimes and then fled to the islands to hide and start a new life.

The shifting materialities, the continuous, sometimes abrupt and volatile changes have continuously challenged those unfamiliar with the delta's transformations and those with

projects involving taming and controlling the deltaic environment to fit their ideas. Yet it has also allowed those familiar with and disposing of skills to navigate the shifting terrain to maintain at least to some extent their freedom and autonomy, especially in adverse times. Borges (2010), in her thesis titled "Senhores das Dunas" (Masters of the Dunes), points out that the Indigenous Tremembés inhabiting parts of the so-called East-West Coast managed to escape the colonial administration, largely maintaining control over their territories, until the 17th century – that is, for around 200 years after the "discovery" of Brazil. Contesting the traditional Brazilian historiography commonly emphazising Portuguese colonization, Borges (2010) argues that these areas of the East-West Coast, including the Parnaíba Delta, present histories of the failure of colonization. Borges (2010) points out the Indigenous social and political dynamics, allowing the Tremembés to take advantage of the geomorphological and geopolitical particularities of the area to carry out major manoevres in their interests, as some of the main factors for their remaining at the margins of colonization.

Working with the delta's shifting materialities to resist and maintain autonomy was not exclusively a strategy of the past, but remains meaningful in some places until today. Many current delta inhabitants – although enjoying the improved transport – are indeed also well aware of the dangers facilitated access can bring about. Even after the end of colonialism, attempts to control and dominate the delta, as well as its inhabitants, by making them fit into projects, conform to ideas, or attempting to exploit or even expel them from certain areas, continue to persist. Recent threats to delta inhabitants and their lifeways include the aforementioned tourism investors, but also the quickly growing and expanding evangelical churches, conservation initiatives and the Fishermen's Colonies are perceived in some situations as constraining, exploitative, or as means of control.

I have previously described the conflicts with the administration of the protective areas (RESEX and APA) and delta inhabitants' feelings of being restricted in their flexibility and being controlled by outsiders through the implementation of ever-stricter rules and regulations (see chapters 2 and 3). Let me add two other examples of attempts to control delta inhabitants and make them conform to certain projects.

One of them is the MEAP (Missão Evangélica de Assistência aos Pescadores – Evangelic Misson of Assistance to Artisanal Fishers), an evangelical organization acting along the entire Brazilian Coast with the objective of evangelizing remote and difficult-to-access riverine communities and artisanal fishers. During my period of fieldwork, the MEAP had already managed to implement churches and diverse activities in several deltaic villages like Canárias,

Caiçara, Torto and Ilha Grande do Paulino. They also regularly visited Passarinho, offering activities for children and handicraft workshops. Yet, they were met with a lot of mistrust, and the villagers refused to cede them an area to construct a church.[99] Seu Juzé, for example, cautious and suspicious of the new activities, did not allow his granddaughters to participate. He was generally very skeptical of the church, especially bewildered that the priests during mass always said the same things regardless of the place. This was alien to his experiences of continuous changes and the particularities of places (see chapters 1 and 4). In Barrinha, Dona Joana told me that missionaries from the MEAP regularly visited, they sent gifts for Christmas, they had donated the infrastructure to pump up groundwater and, in case of an emergency, they would provide speedboat transport for sick or injured people to Parnaíba. Dona Joana and Seu Zé accepted the visits, gifts and assistance, but remained skeptical and vigilant. During my stay in Barrinha, missionaries from Parnaíba together with recently converted "native missionaries" – as they called them – from Canárias Island held an event with the aim of "fishing fishermen" (*pescando pescadores)*. I was especially struck by some of their explanations in relation to tides, nature and good or bad catches. For instance, they told fishermen that only God decided on good or bad catches and that hence the rhythm of tides or nature could not influence fishing, it was all about God's will. Although the MEAP seemed, at least for the moment, not to prescribe specific rules regarding clothing or food, as other evangelical churches did – one had for instance prohibited eating shrimps – the obvious discordance with delta inhabitants' knowledge and narratives on tides, enchanted beings and nature's transformations still struck me.

The second example relates to the Fishermen's Colonies (*Colônias de Pescadores*). In order to get the authorization to fish (*carteira de pesca*) and be recognized as professional fishers, delta inhabitants have to register with the Fishermen Colony responsible for their area. Professional fishermen have to pay contributions but should then get compensations (*seguro de defesa*) of monthly minimum wages during the period of the fishing moratorium. However, as Ramalho (2014b) points out, the Fishermen's Colonies and the formulation of fishing laws and codes, which emerged from 1919 onwards, were based on nationalist views and ideas of modernity. They aimed to "civilize" and control both artisanal fishermen and the main means of fishing production (sea, rivers, estuaries, etc.) and, as I pointed out earlier, thereby also attempted to organize fishermen in a reserve for the Navy – which was lacking workforce – so

[99] In one of their annual reports, the MEAP (2020) also emphasizes the difficulties they met in Passarinho. The report describes that in 2020, after years of refusing the entry of missonaries, the community finally ceded a piece of land for the construction of a base and allowed a couple of missionaries to live there.

as to assist them in controlling and defending the coast (Ramalho 2014).

Seu Zé and Dona Jona explained that they had repeatedly had negative experiences with the Fishermen's Colony. At the time of my fieldwork, they had not received the compensation for the periods of fishing moratoriums, and many delta inhabitants suspected Fishermen's Colonies to have taken the money into their own pockets.

In the face of these experiences, including the conflicts with the ICMBio, the threat of being expelled and the repeated cheating by more powerful outside actors, the islanders' mistrust and vigilance can be better understood. An elderly fisherman in Canárias told me that there had been a project to construct a bridge connecting Canárias Island to a neighboring island, from where access to Parnaíba would be fast and easy. The inhabitants of Canárias, however, opposed the project. "Thanks to God, they did not build the bridge and we can continue our lives in freedom and peacefulness," the fisherman commented. Nevertheless, access to Canárias Island and movement across the island had improved considerably in recent years through the speedboat service and quads. The facilitated entry of strangers could not be avoided but inhabitants tried through diverse strategies to maintain a certain control and monitoring of their territory. For example, on the journey to Canárias and when waiting for quads in the village's port, which had become the main entry point from where one could travel to other villages on Canárias Island, strangers would commonly be asked various questions about their motive for being there and their place of stay. This was done in such a subtle way that visitors – including myself on my first trips – most often would not even notice it. Later, I learned that it was a way to monitor new arrivals and warn fellow inhabitants in case unwanted visitors arrived. Also, inside the villages, the monitoring of passing quads had become an everyday activity.

Additionally, the reading of traces in the sand provided valuable information about movements on the island. Seu Juzé, for instance, almost daily looked for traces inside the fences of his home garden and when walking around the village. Although he worked on a rather isolated island north of Passarinho, when returning from work in the afternoon, he was often well-informed about the movements and activities of fellow villagers during the day. He was familiar with most footprints of fellow villagers, and reading the traces in the sand on his way to and back from work hence allowed him to obtain information on whom had passed, and frequently he could also deduce whether the person had gone fishing or to the mangroves, for example. I was often amazed by people's skill in reading traces and distinguishing the noise of quad motors, and in particular also by the fast spread of information through the

village.

In Barrinha, the port on the island's northern side is the main access point because the rest of the island is surrounded by mangroves. Unlike other deltaic villagers, Seu Zé and other Barrinhenses actively opposed the installation of a floating dock that would adjust to tidal levels. Keeping the access difficult granted them more control over comings and goings, especially of strangers and unwanted visitors. This had proven valuable during conflicts over land titles and with the administration of the APA. Similar to the monitoring of quads in Passarinho, many Barrinhenses were very skilled in distinguishing the noises of outboard engines, allowing them to stay informed about arrivals even when sitting or working in their home gardens.

These examples all show that actively maintaining a difficult means of access is also a strategy of current delta inhabitants to avoid control and unwanted influences. It can be a way of strategic positioning vis-à-vis power (Scott, 2009). Indeed, as Scott (2009) points out in his work on what he calls Zomia, in the South Asian highlands, geophysical and environmental features are important for political control. Because the spread of geopolitical control is more difficult in spaces of difficult physical access, these spaces can be used as refuge to avoid control. Challenging dominant narratives considering the populations of the highlandsas remanants of "uncivilized tribes" surviving at the edges of empires, Scott (2009) argues that the peoples of Zomia had deliberately chosen to escape the domination of central states and therefore lived in remote or inaccessible areas that were more difficult to reach for governments. Similar observations have been made for river deltas. Allard (2019) in his work on the Orionoco Delta argues that if the Indigenous Warao have survived to the present day, it is because they managed to take refuge in a swampy zone that not only Europeans but also other Amerindians considered impossible to penetrate and uninhabitable. For the Ayeyarwaddy Delta, Ivars observes that "in the context of the insurgencies, the delta forest and mangroves constituted spaces where the materiality of floods, mangroves, grass and distance undermined state-making practices of legibility and control" (2022, 74) .

In the Parnaíba Delta, taking advantage of the shifting materialities, together with monitoring of movements through the reading of traces in the sand and the identification of engine noises, as well as the fast spread of information, are all means to maintain certain autonomy and freedom of island life. They allow delta inhabitants to partly keep violence and other menaces at bay, and to maintain to some extent the power to decide on their own lives, especially the freedom to decide when to do what. This is meaningful in regard to delta inhabitants' frequent

experiences of marginalization, of being cheated or exploited, and is hence a reversing in some way of their marginal position. And it is, in particular, essential to maintain the island's cherished *vida sossegada*.

Conclusion

Narratives of return commonly underline people's choice rather than their need to come back to live on Barrinha Island, and they praise the island's *vida sossegada* – a peaceful, relaxed life without major preoccupations or turmoil.

Such descriptions, I pointed out in this chapter, seem at odds with diverse situations of everyday island life such as so-called "bad tides" (*maré ruim*), shrimp tides that hardly allow fishers to catch enough shrimps to come up for their *farinha*, their expenses during the fishing period. "Bad tides" relate to the islands' continuous, sometimes abrupt and often difficult-to-predict transformations, and during such periods, life on the islands indeed appears as highly uncertain, especially to outsiders.

Contrasting narratives of a peaceful, relaxed life without major turmoil with descriptions of a "bad tide" led me to explore several questions such as: How come people describe the deltaic islands overall as a refuge, praising its *vida sossegada* in the face of these apparently highly uncertain transformations? Why do shrimp fishers keep coming to Barrinha for thirty or forty years? How come they speak of shrimp fishing in terms of autonomy and independence rather than uncertainty?

I have pointed out in this chapter that uncertainties can be very differently experienced and that the ideas of *vida sossegada* should be understood both in relation to experiences such as marginalization, dependency, exploitation and violence, which delta inhabitants frequently encounter in mainland towns and cities and when relating to more powerful outside actors, and in relation to the islands characteristic continuous and open becoming. It is in these contexts that some of the essential aspects of the vida *sossegada* like the reluctance to make commitments and the possibilities of mastering the *how* of one's own life, for instance by deciding on *when* to do *what,* become particularly meaningful.

In contrast to sudden unemployment or deliberate cheating, the continuous transformation and open becoming of the deltaic islands, although challenging at times (e.g., during bad tides), also leaves space to act and can hence be a source of possibility for delta inhabitants who are skilled at navigating this ever-changing world. The continuity as a refuge, as space of autonomy, freedom and good life is tightly bound to delta inhabitants' power to decide and master how to live their lives, for instance in order to dispose of enough flexibility to jump to take advantage of opening possibilities.

Aware of recent threats to their *sossego*, the tranquility, autonomy and freedom of island life, delta inhabitants remain vigilant, often mistrusting outsiders. Working with and taking advantage of the delta's unruly, shifting materialities has become a strategy allowing them to maintain at least some control over their space and lives.

Conclusion

Back from my fieldwork, I rewatched a series of documentaries that the National TV station "O Globo" had made on the Parnaíba Delta. One of them featured Seu Pedro. Upon the inquiry of a visibly upset reporter, who wanted to know how he continued living on an abandoned mangrove island after the cultivation of rice, his main livelihood, had become impossible, without access to basic infrastructure and the constant uncertainty of how to make a living, Seu Pedro simply replied: "No, no, *patrão* (boss)…it is about confidence you know. It is about confidence in the world." As an anthropologist, I was probably more sensitive to different perceptions and ideas of the world and hopefully more respectfully addressed my questions than the TV reporter. Yet, in retrospect, I would say that some imaginaries I had previous to starting my fieldwork were not so different from those of the TV reporter, hence his reaction reminded me of my own surprise – not an abrupt, but a gradual surprise – when I learned about some of the profoundly different ways delta inhabitants experienced and thought of some aspects of the continuously transforming world they inhabit. Maybe the most striking difference – or, to put it in other words, the difference that made me reflect most – was the perception of those changes delta inhabitants commonly referred to as "nature's making and unmaking" and emphasized as the distinctive characteristic of the islands they inhabit.

Now, it is actually not surprising that the deltaic world unfolds in continuous movements. Defined by geologists as "discrete shoreline protuberances formed where rivers enter oceans, semi-enclosed seas, lakes or lagoons and supply sediments more rapidly than they can be redistributed by basinal processes" (Elliott 1986, 113), the very definition of delta emphazises movement: *moving* rivers meeting standing waters, the continuous *carrying* and *supplying* of sediments and *slower* redistribution of these are essential for the alluvial deposits to emerge. Yet this definition of delta dominantly focuses on the accumulation of sediments. It seems that once sediments accumulate, these deposits are no longer talked of in terms of movements, as if this marks an ending point or a purpose: rivers supply sediments that accumulate and that's it. Often this process is talked about in terms of *construction* or *growth*, whereas the opposite – the changing or flowing away of sediments from the deposits – is described as *destruction* or *loss* (e.g. Bhattacharya 2006; Giosan and Freeman 2014; Anthony, 2015). This perspective, however, as I realized when I learned more about the ways in which delta inhabitants understand and think about the area they inhabit, is a peculiar one. It primarily focuses on the

accumulation of sediments, on the building of "land." Once sediments emerge from the waters, it seems, these are thought of in similar terms as land in general: as separated from water and air, as dry, solid and rather stable. Even if considered as *fragile* geomorphic features (e.g., Giosan and Freeman 2014) this perspective takes ideas of stability as a starting point, as a primary state. The emerged "land" is thought of as a more or less stable and bounded form that is then secondarily changed, *shaped* – to take another term often used – by waves or river flows. Such a *terra firma*-centered perspective has several implications. For instance, transformations affecting these assumably stable landforms, such as sea-level rise, are perceived rather in negative terms, in terms of destruction. This interpretation contributes to a vision of deltas as vulnerable places – an attribute often extended to its inhabitants – as unstable and uncertain terrain and overall *affected by* change. More generally, it sees change as a secondary process, acting upon primary stable forms.

During my fieldwork in the Parnaíba Delta, I gradually came to know a fundamentally different way to understand and think about the shifting terrain, the (is)lands people inhabit and nature's continuous transformations in which everyday deltaic life unfolds. I learned about a perspective that takes movement and transformation as starting points, as the *basis* of the world, and hence as primary to any stable forms. From this perspective, everything is in motion: water, land, rivers, the sea, sediments, sand, mud, and also nonhuman organisms, indeed, whole assemblages of nonhumans such as mangroves or *salgados*. Transformations are not described in positive or negative terms – e.g., as constructive or destructive – but simply as part and parcel of continuous processes of "making and unmaking," and change is not perceived as impacting or affecting – what should it impact if nothing is stable? On the contrary, continuous transformation becomes something to *rely on*, as Seu Juzé so often emphasized; or, as Seu Pedro put it, one can have *confidence* in that ever-changing world.

This does not mean, however, that people live in a kind of turmoil all the time or constantly have to adapt to all sorts of changes. As Seu Juzé so pointedly described, many of these changes happen unnoticed or make sense only in retrospect. Indeed, at times, changes might occur abruptly, become clearly visible, directly experienceable, may be surprising or have profound repercussions. This is the case when a whole piece of shore is swept away, when sand dunes bury a river or when the shifting of the salt/freshwater boundary leads to the end of a major livelihood. Yet these seemingly drastic changes are often only the effects of cumulative processes (see also Cons 2020): a sand dune does not invade a river in a matter of a day, nor does a river "eat" a shore abruptly. I showed in **Chapter 1** and **Chapter 2** that delta

inhabitants rarely conceive of such profound changes as dramatic but rather as part and parcel of a world in continuous transformation, as possible outcomes of ongoing, quotidian and often creeping movements.

A world based on movement therefore does not means that slowness, accumulation or stillness do not happen. The more permanent sandy islands, for instance, transform at a much slower pace than young *croa* islands. However, slowness and accumulation are not to be confounded with stable and bounded entities – in a world of movement, these are thought of as a *temporary* and *secondary* appearance emerging from and feeding into processes of transformation again rather than the *primary* or *normal state*. As Seu Juzé put it: "The sea made these islands and it is also going to dissolve them again." In a world of movement, this transformation is a certainty rather than a crisis.

Delta inhabitants' understanding and experience of everyday life in a continuously transforming world is hence quite unlike a "vertiginous life," a life in crisis in a whirlpool of unforeseen change, as experienced elsewhere (Knight, 2022). Nevertheless, successfully navigating transformation requires freedom, knowledge and skills to observe and anticipate movements, and to adjust one's own practices to diverse human and nonhuman temporalities, as I showed in **Chapter 4** and **Chapter 5**. Besides attentiveness and flexibility, delta inhabitants emphasize in particular the importance of "knowing a bit about everything." Rather than a static pre-formed set of knowledge and skills, passed on to future generations, *conhecimento*, I showed, is understood as intimately linked to a place, made by living and doing, and needs to be constantly reattuned to a transforming world.

Despite the certainty that Seu Juzé and other delta inhabitants had about the advancement of the sea and that it will dissolve the islands again, they were not obsessed with observing sea-level rise. On the contrary, in a conversation about the difficulty to track and perceive the multi-directional, sometimes subtle, and mostly difficult-to-predict movements, Seu Juzé explained that only the movement of the sea was sure to always advance; it never retreated, it always came closer; this was something he could rely on. While this partly resonates with recent Anthropocene narratives emphasizing overall sea-level rise, Seu Juzé's confidence in the movement of the sea also differed strikingly from the sense of catastrophe and threat, which doomsday views commonly convey.

A good point to start shedding light on this difference is that, besides seeing movement as foundational, delta inhabitants also commonly do not consider the deltaic islands as surfaces

and rather than concentrating on the division of water and land they emphasize the permeability of the sandy ground. Whereas in the beginning of my fieldwork, I largely thought of water as flowing around and at times cutting through islands, delta inhabitants taught me about the importance of water flowing beneath the sandy ground, seeping in but also welling up from below. From such a perspective, movements – including that of the sea – play out in multiple dimensions and directions, and focusing on the interplay of different movements becomes more meaningful than concentrating on single trajectories.

In this sense, the insights of this thesis urge not only to move beyond thinking in bounded categories and binary divisions of land/water, wet/dry and solid/liquid, but also speak to a recently growing attendance to volumes (Elden 2013; Steinberg and Peters 2015; Billé 2020; Cons 2020). In the Parnaíba Delta, in contrast to other deltas, sand dunes maybe facilitate this shift from thinking in terms of surfaces towards apprehending material entanglements in three dimensions – often the movement of dunes is strikingly visible, and the whirling up of grains illustrates the interactions of sand and wind.

I argued in this thesis that shifting attention from states of being towards processes of becoming proved productive for apprehending delta life. Attending to becomings allows us to move beyond bounded and fixed categories and binary oppositions such as wet/dry, land/water, solid/liquid, and also social/natural. It foregrounds processes rather than stable states, helps to focus attention on mingling and in-between materials and emphasizes the openness and unfinishedness of movements. I have hence suggested that an essential characteristic of everyday life in the Parnaíba Delta is its unfolding in open and interrelated becoming. Such a becoming is essentially a "becoming-with" (Haraway 2008) and does not follow a predefined unique direction. Indeed, in addition to apprehending the deltaic environment and delta life as "hybrid" (Lahiri-Dutt 2014; Mukherjee and Ghosh 2020) or "amphibious" (Krause, 2017), emphasizing the intermingling of materials, attending to becomings also allows us to foreground and attend to the interweaving of shifting materials with the becomings of human and nonhuman lifeways more broadly. This complicates for instance the "dancing-with the river" perspective Lahiri-Dutt and Samanta (2013) put forward – in which it is primarly people and the river that dance – towards integrating a multitude of beings that actively take part in the making of the deltaic world.

I have further shown that a lens of becoming also allows us to apprehend delta inhabitants' multiple, malleable and shifting identities in different ways. Seeing these as "lines of becoming" rather than in terms of bounded concepts foregrounds transformation and

unfinishedness, and therefore allows us to reflect on constraints and impositions, on people's experiences of marginalization, historic legacies and power relations, and also to attend to people's agency and creativity in shaping and reinventing their identities. The inhabitants of the Parnaíba Delta, similarly to Amazonian river dwellers (see Harris 2009), for instance, tend to fall "between" categories because of both their mixed origins and their multiple, improvised, and interstitial livelihoods. Attending to becoming, I argue, offers an alternative view to seeing people as overall impacted and passive, and their mixed origins in terms of a "lack of," but also moves beyond a preoccupation in defining people's identities, knowledge and skills in terms of continuities and remnants from previous societies, as especially a categorization like "traditional" often does. I showed in **Chapter 3** and **Chapter 4,** respectively, that such views on one hand foreground a linear unfolding of past, present and future that poorly resonates with delta inhabitants' fuzzy, muddled and vague trajectories, narratives and future plans, and the importance they attribute to the present, and on the other hand they consider knowledge and skills in strikingly different terms, as a pre-formed and fixed set rather than in terms of the improvised, constantly reattuned characteristics of *conhecimento* that delta inhabitants emphasize.

This brings me to another major insight of this thesis: the importance of the temporal dimension, or to put it differently, the necessity of attending to the complexity of interweaving temporalities. Throughout this thesis, I have approached time as embodied, lived and emerging through practices rather than as an externally imposed metronome-like structure. I have therefore looked at how time arises from relations between both humans and nonhumans. I have argued that attending to diverse interweaving human and nonhuman temporalities is important in everyday deltaic life. Yet I have also pointed out that people do not passively adapt to rhythms and changes, and hence I have attended to ways in which delta inhabitants actively anticipate, prepare and attentively wait for upcoming changes, perpetuate uncertainties through tricking and create continuity through particular relations of exchange or through practices of care (**Chapter 5** and **Chapter 6**).

I have suggested in this thesis that attending to open becoming that does not follow a singular direction and to the multiple interweaving temporalities of both humans and nonhumans in everyday deltaic life also brings about a different understanding and experience of time and change; one that does not fit any linear chronological trajectory. It complicates in particular the recently growing number of doomsday narratives concentrating mostly on accelerations and sea-level rise, and portraying deltas in the Anthropocene as following similar singular

future trajectories. Many delta inhabitants were indeed familiar with these narratives, which they had come to know either by watching TV or from visiting natural scientists. Yet I realized during my fieldwork that they especially struggled to relate to the temporal scale of those future changes and felt unfamiliar with their linear temporality. Seu Juzé, for instance, after telling me that he had heard scientists saying that a 30-meter-high wave could submerge Canárias Island in the future, jokingly added that if such a wave were to occur, he would simply climb a high tree and wait until it passed, or buy a helicopter to watch it from above. Dona Joana, in a conversation we had on the "eating" of the shore in Barrinha, told me that the highest spring tides had increased in recent years and that she had heard that they would become stronger and wash away more land in the coming years. When I asked her whether she was worried that the tides could reach her house and whether she considered moving it further inland, she affirmed that the tides would probably reach her house. However, she added with a shrug, that this would still take a long time, maybe another thirty years. That roughly thirty years can be a long time span, and the strategy of "waiting until it has passed" illustrates well people's experience of becomings unfolding in multiple directions and the complex interweaving of diverse temporalities: in the deltaic world, changes rarely unfolded in a single direction, were rarely long-lasting – so one could wait until they passed – and over such a "long" timespan many other things could happen.

This is not to deny that some changes are currently accelerating, nor the profound consequences climate change can have on life in river deltas. Yet the findings of my research echo Cons' (2018) caution that deltas cannot be reduced to "heterodystopias," spaces reduced to coping with inevitable catastrophes. The linearity of such scenarios hardly aligns with the reality of the multiple, open, sometimes confusing, and hard-to-predict movements within which delta inhabitants' lives unfold. And focusing predominantly on sea-level rise neglects the many other concerns of delta inhabitants. The case of Passarinho is a good illustration of this: southwards of the village, the mangrove terrain has indeed become increasingly flooded by saltwater, making rice cultivation impossible; yet northwards of the village, another mangrove terrain has been rising and drying up, which led to that mangrove's death. Both of these changes in opposite directions – one being submerged in water one emerging from the water – have meaningful consequences for delta inhabitants. Such complexities urge us to attend more to the multi-directionality of movements, playing out in volumes rather than on surfaces, and to pay closer attention to how these movements actually interweave and become meaningful in relation to delta inhabitants' specific practices. My research suggests that in the context of accelerating environmental change, paying attention to the temporal dimension

becomes even more crucial. But taking the temporal dimension seriously is quite the opposite of focusing on a singular changing temporality. It requires paying close attention to a complex interweaving of temporalities, changing tempos and cadences, emerging and dissolving temporal alignments and misalignments.

The insights from my research suggest that temporalities not only appear as important in relation to making "living in common *possible*" (Gan and Tsing 2018, 103; my emphasis) but also in questions of living *well*, leading to ideas of the islands as a "refuge," where a peaceful and calm life is possible. This offers yet another narrative of life in a river delta that strikingly contrasts with the portrayal of deltas as hot spots of crisis and as threatened spaces coping with catastrophe. I showed in **Chapter 6** that in particular women, through their caring practices beyond the human, take on an important role in making "things hold" (Gan and Tsing 2018) in a continuously transforming world, where continuity cannot be taken for granted but requires an effort. In this sense, through practices of *cuidar* (to care) and *criar* (to bring up/raise/grow), directed towards their families, but also towards plants and animals, as well as younger single fishermen who are often drawn into vicious cycles of addiction, women actively create continuity between past, present and future, help to bridge times in between shrimp tides and to mitigate the negative effects of dissonant timings. By practising this care, they essentially contribute not only to maintaining webs of life, but also to the flourishing and well-being of humans and nonhumans, allowing the islands to become a refuge where living well is possible. If we consider the Anthropocene as a "time out of joint," more precarious, with increased disturbances and mismatches of timings, then such practices and more generally a better understanding of what "keeps livable assemblages alive" (Gan and Tsing 2018, 133) gain even more importance.

In the context of recently growing political and economic instability and increased violence in Brazil, the deltaic islands have regained importance as a refuge, allowing historically marginalized people facing unemployment, exploitation and violence on the mainland to live a rather peaceful and calm life (*vida sossegada*). I have pointed out in **Chapter 7** that uncertainties can be very differently experienced and that for those knowing how to navigate continuous transformations, precisely this open becoming characteristic of the deltaic world, even if constraining at times, can also be a source of possibilities and autonomy. I have suggested that in contrast to sudden unemployment or deliberate cheating by more powerful actors, the continuous transformations of the deltaic islands, although difficult to predict and sometimes volatile, leave space to act and give people confidence that negative situations are

unlikely to persist and new possibilities will eventually open up. The way delta inhabitants conceive of a peaceful and relaxed life (*vida sossegada*), I have shown, should not be understood in terms of stability or economic wealth, but rather foregrounds the possibility of deciding *when* to do *what*, to master one's own *time* and the *how* of one's life. This also sheds light on why many delta inhabitants commonly experience some recent developments and projects, such as the protected areas, as a means of control and imposition: neglecting the importance of the temporal dimensions – of specific timings and temporal alignments – the growing number of rules and rigid regulations these projects bring about greatly jeopardise people's flexibility and power of decision-making. Yet the continuity of the islands as a "refuge," as a space of autonomy, freedom and good living, and the possibility of successfully navigating continuous and sometimes abrupt change, are tightly bound to people's power to decide and master *when* to do *what*, so as to dispose of enough flexibility, for example, to jump onto opening opportunities and have space to reorient when possibilities dissolve.

References

Adam, B. (1998). *Timescapes of Modernity: The Environment & Invisible Hazards*. London and New York: Routledge.

Adams, C., Murrieta, R., Neves, W., & Harris, M. (Eds.). (2009). *Amazon Peasant Societies in a Changing Environment*. Dordrecht: Springer Netherlands.

Agard-Jones, V. (2012). What the Sands Remember. *GLQ: A Journal of Lesbian and Gay Studies*, *18*(2–3), 325–346. https://doi.org/10.1215/10642684-1472917

Albuquerque, A. G. B. M., Ferreira, T. O., Cabral, R. L., Nóbrega, G. N., Romero, R. E., Meireles, A. J. D. A., & Otero, X. L. (2014). Hypersaline tidal flats (apicum ecosystems): The weak link in the tropical wetlands chain. *Environmental Reviews*, *22*(2), 99–109. https://doi.org/10.1139/er-2013-0026

Alencar, E. F. (1993). Gênero e trabalho nas sociedades pesqueiras. In Furtado, L. G., W. Leitão, e A. F. de mello (eds.), *Povos das Águas, Realidade e Perspectivas na Amazônia*, Belém, MCT/CNPq/ /Museu Goeldi, 63-81.

Allard, O. (2019). Le palmier des marais. Remarques sur les usages d'un environnement inhabitable. *G. Cometti, P. Le Roux, T. Manicone et N. Martin (dir.), Au seuil de la forêt. Hommage à Philippe Descola, l'anthropologue de la nature*.

Alves, V. E. L. (2003). *As bases históricas da formação territorial piauiense*. 22.

Alves, S. A., & Querol, L. S. (2018). Palhas que transformam vidas: a criação do Museu-Oficina da Ilha das Canárias, no Maranhão, Brasil. *e-cadernos CES*, (30).

Anderson, A. B., & Posey, D. A. (1985). Manejo de cerrado pelos índios Kayapó. Boletim do Museu Paraense Emílio Goeldi 2: 77–98.

Andrade, M. C. de. (1995). Sociedade e reforma agrária no Brasil. *Raízes: Revista de Ciências Sociais e Econômicas*, *11*, 21–35. https://doi.org/10.37370/raizes.1995.v.517

Andrade, I. M., Oliveira Nascimento, J. D., Sousa, M. V., Santos, J. O., & Mayo, S. J. (2019). A morphometric study of the restinga ecotype of *Anacardium occidentale* (Anacardiaceae): Wild coastal cashew populations from Piauí, Northeast Brazil. *Feddes Repertorium*, *130*(2), 89–116. https://doi.org/10.1002/fedr.201800024

Anthony, E. J. (2015). Wave influence in the construction, shaping and destruction of river deltas: A review. *Marine Geology*, *361*, 53–78. https://doi.org/10.1016/j.margeo.2014.12.004

Arons, N. G. (2004). *Waiting for rain: the politics and poetry of drought in Northeast Brazil*. University of Arizona Press.

Arteaga, M. C., & Jorgenson, J. P. (2007). Hábitos de desplazamiento y dieta del capibara (Hydrochoerus hydrochaeris) en la Amazonia colombiana. *Mastozoología neotropical*, *14*(1), 11-17.

Aschenbroich, A., Michaud, E., Gilbert, F., Fromard, F., Alt, A., Le Garrec, V., Bihannic, I., De Coninck, A., & Thouzeau, G. (2017). Bioturbation functional roles associated with mangrove development in French Guiana, South America. *Hydrobiologia*, *794*(1), 179–202. https://doi.org/10.1007/s10750-017-3093-7

Baran, M.D. (2007). "Girl, You Are Not Morena. We Are Negras!": Questioning the Concept of "Race" in Southern Bahia, Brazil. *Ethos*, *35*(3), 383–409. http://www.jstor.org/stable/4497919

Barreto Filho, H.T. (2009). Populações tradicionais: introdução à crítica da ecologia política de uma noção. In Adams, C.; Murrieta, R.; Neves, W. (orgs.). *Sociedades caboclas amazônicas:modernidade e invisibilidade*. São Paulo: FAPESP; Annablume.

Bastian, M. (2012). Fatally confused: Telling the time in the midst of ecological crises. *Environmental Philosophy*, *9*(1), 23-48.

Bastian, M., Baraitser, L., Flexer, M. J., Hom, A. R., & Salisbury, L. (2020). Introduction: The social life of time. *Time & Society*, *29*(2), 289–296. https://doi.org/10.1177/0961463X20921674

Bastian, M., & Bayliss Hawitt, R. (2023). Multi-species, ecological and climate change temporalities: Opening a dialogue with phenology. *Environment and Planning E: Nature and Space*, *6*(2), 1074–1097. https://doi.org/10.1177/25148486221111784

Bennett, J. (2010). *Vibrant matter: A political ecology of things*. Duke University Press.

Benson, E., Braun, V., Langford, J. M., Münster, D., Münster, U., & Schmitt, S. (2017). Introduction. Troubling Species. Care and Belonging in a Relational World. *RCC Perspectives Transformations in Environment and Society*, *1*, 5-8.

Bhattacharya, J. P. (2006). 'Deltas', in Posamentier, H. W., and Walker, R. G. (eds.), *Facies Models Revisited*. SEPM (Society for Sedimentary Geology). http://sp.sepmonline.org/content/sepspecpub/sepspfmr/1.toccontent/84 (July 20, 2023)

Biehl, J. G., & Locke, P. A. (Eds.). (2017). *Unfinished: The anthropology of becoming*. Duke University Press.

Billé, F. (Ed.). (2020). *Voluminous states: Sovereignty, materiality, and the territorial imagination*. Duke University Press.

Boyer, V. (2015). Énoncer une "Identité" pour Sortir de l'Invisibilité: La Circulation des Populations entre les Catégories Légales (Brésil). *L'Homme* 214(2), 7-36.

Borges, J. F. (2010). Os Senhores das Dunas e os Adventícios d'Além Mar: primeiros contatos, tentativas de colonização e autonomia Tremembé na Costa Leste-Oeste (séculos XVI e XVII). (Tese de Doutorado. – UFRJ. Rio de Janeiro).

Brigstocke, J. (2016). Exhausted Futures. *GeoHumanities*, *2*(1), 92–101. https://doi.org/10.1080/2373566X.2016.1168192

Buckley, E. E. (2017). *Technocrats and the politics of drought and development in twentieth century Brazil*. University of North Carolina Press.

Cardoso, T. M., Losekann, C., Buti, R., Silveira, P. C. B., Seeger, N., & Lopes, D. K. (2021). Vidas precárias em águas turvas: Antropologia colaborativa nas ruínas do Antropoceno. *Ilha Revista de Antropologia*, *23*(1), 97–126. https://doi.org/10.5007/2175-8034.2021.e75156

Castro, J. de (1966). *Death in the Northeast* (Vol. 556). New York.

Chao, S. (2021). "They Grow and Die Lonely and Sad." Theorizing the Contemporary, *Fieldsights*, January 26. https://culanth.org/fieldsights/they-grow-and-die-lonely-and-sad

Chartier, D., & Nasuti, S. (2009). Le Délicat Apprentissage d'une Préservation Conjointe des Écosystèmes et des Sociétés (Maranhâo, Brésil). *Géographie et Cultures* 69, 97–113.

Chasteen, J. C. (1991). Background to Civil War: the process of land tenure in Brazil's southern borderland, 1801-1893. *Hispanic American Historical Review*, *71*(4), 737-760.

Cheong, S.-M., Silliman, B., Wong, P. P., Van Wesenbeeck, B., Kim, C.-K., & Guannel, G. (2013). Coastal adaptation with ecological engineering. *Nature Climate Change*, *3*(9), 787–791. https://doi.org/10.1038/nclimate1854

Cloke, P., & Jones, O. (2001). Dwelling, place, and landscape: An orchard in Somerset. *Environment and Planning A*, *33*(4), 649–666. https://doi.org/10.1068/a3383

Collins, J. F. (2007). Recent Approaches in English to Brazilian Racial Ideologies: Ambiguity, Research Methods, and Semiotic Ideologies. A Review Essay. *Comparative Studies in Society and History*, *49*(4), 997–1009. http://www.jstor.org/stable/4497714

Conforti Ferreira Guedes, C., Fonseca Giannini, P. C., Oliveira Sawakuchi, A., DeWitt, R., & Paulino De Aguiar, V. Â. (2017). Weakening of northeast trade winds during the Heinrich stadial 1 event recorded by dune field stabilization in tropical Brazil. *Quaternary Research*, *88*(3), 369–381. https://doi.org/10.1017/qua.2017.79

Cons, J. (2018). Staging climate security: Resilience and heterodystopia in the Bangladesh borderlands. *Cultural Anthropology*, *33*(2), 266–294.

Cons, J. (2020). Seepage: That which oozes. In F. Billé (Ed.), *Voluminous States: Sovereignty, Materiality, and the Territorial Imagination* (pp. 204–216). Duke University Press.

Cunha, M. C. da, & De Almeida, M. W. (2000). Indigenous people, traditional people, and conservation in the Amazon. *Daedalus*, *129*(2), 315–338.

Dávila, J. (2003). *Diploma of whiteness: Race and social policy in Brazil, 1917–1945*. Duke University Press.

de L'Estoile, B. (2014). "Money Is Good, but a Friend Is Better": Uncertainty, Orientation to the Future, and "the Economy". *Current Anthropology*, *55*(S9), S62–S73. https://doi.org/10.1086/676068

De Micheaux, F. L., Mukherjee, J., & Kull, C. A. (2018). When hydrosociality encounters sediments: Transformed lives and livelihoods in the lower basin of the Ganges River. *Environment and Planning E: Nature and Space*, *1*(4), 641–663. https://doi.org/10.1177/2514848618813768

Degler, C. (1971). *Neither Black nor White*. Madison: University of Wisconsin Press.

Deleuze, G. (2004). *Desert islands and other texts, 1953-1974*. Semiotext(e) ; Distributed by MIT Press.

DeVore, J. D. (2014). *Cultivating hope: struggles for land, equality, and recognition in the cacao lands of southern Bahia, Brazil* (Doctoral dissertation, University of Michigan).

DeVore, J. (2019). Devouring the Public Good: Everyday Forms of Financial Extractivism. *NACLA Report on the Americas*, *51*(2), 159–166. https://doi.org/10.1080/10714839.2019.1617483

DeVore, J. (2021). Black Beans, White Rice: On the Racialization of Table Manners in Brazil, 1805–2018. *Anthropological Quarterly*, *94*(3), 505-546.

Diegues, A. C. (1998). O mito moderno da natureza intocada. São Paulo: Hucitec.

Dodt, G. L. G. (1871). Acerca da Exploração do Rio Parnaíba por Ordem da Província do Piauhy pelo Engenheiro em comissão do Ministério da Agricultura, Commercio e Obras Publicas. Relatório de 22/04/1871

dos Santos Rosa, L., de Lima Silveira, E., dos Santos, M. M., da Silva Modesto, R., Perote, J. R. S., & Vieira, T. A. (2007). Os quintais agroflorestais em áreas de agricultores familiares no município de Bragança-PA: composição florística, uso de espécies e divisão de trabalho familiar. *Revista Brasileira de Agroecologia*, *2*(2).

Durigan, G. (2020). Zero-fire: Not possible nor desirable in the Cerrado of Brazil. *Flora*, *268*, 151612. https://doi.org/10.1016/j.flora.2020.151612

Eiten, G. (1972). The Cerrado Vegetation of Brazil. *Botanical Review*, *38*(2), 201–341. http://www.jstor.org/stable/4353829

el-Moctar, A. O. (2013). Le sable du point de vue de la physique. *Techniques & culture*, *61*, 28–41. https://doi.org/10.4000/tc.7198

Elden, S. (2013). Secure the volume: Vertical geopolitics and the depth of power. *Political Geography*, *34*, 35–51. https://doi.org/10.1016/j.polgeo.2012.12.009

Elliott, T. (1986). 'Deltas', in Reading, H. G. (ed.), *Sedimentary Environments and Facies* (2nd edition). Oxford: Blackwell Scientific Publishing, 113–54.

Evans-Pritchard, E. E. (1940). *The Nuer: A description of the modes of livelihood and political institutions of a Nilotic people*. Oxford University Press.

Fagundes, G. M. (2019). Fire normativities: Environmental conservation and quilombola forms of life in the Brazilian savanna. *Vibrant: Virtual Brazilian Anthropology*, *16*, e16501. https://doi.org/10.1590/1809-43412019v16d501

Felix, G., Almeida Paz, I., Piovezan, U., Garcia, R., Lima, K., Nääs, I., Salgado, D., Pilecco, M., & Belloni, M. (2014). Feeding behavior and crop damage caused by capybaras (Hydrochoerus hydrochaeris) in an agricultural landscape. *Brazilian Journal of Biology*, *74*(4), 779–786. https://doi.org/10.1590/1519-6984.02113

Feller (2018). Mangroves. Accessed 30.08.2022 https://ocean.si.edu/ocean-life/plants-algae/mangroves

Figueiredo Lima, R. M. B. de, da Costa, F. S., & dos Santos, J. do N. (2013). A

Geografia dos conflitos agrários nas microrregiões da Baixada e do Litoral Ocidental

Maranhense. [accessible online] http://www.redesrurais.org.br/6encontro/trabalhos/Trabalho_294.pdf

Forty, A. & Küchler, S. (eds). (1999). *The art of forgetting*. Oxford: Berg.

Freitas Machado, R. (2019). As folhas vermelhas do mangue: uma etnografia sobre os mortos, a morte e a maré em Matarandiba (BA) (Doctoral dissertation, Universidade de São Paulo).

Furuie, V.D.A (2020). *Argonauts of the Amazon: River Trade and Rights in the Xingu Basin*. Princeton University

Gagné, K., & Borg Rasmussen, M. (Eds.). (2016). An amphibious anthropology: The production of place at the confluence of land and water. *Anthropologica*, *58*(2), 135–249.

Galvão, E. 1976 *Santos e visagens*. São Paulo: Ed. Nacional Cia Brasiliana.

Gan, E. (2017). Timing rice: An inquiry into more-than-human temporalities of the Anthropocene Elaine Gan. *New Formations*, *92*(92), 87–101. https://doi.org/10.3898/NEWF:92.06.2017

Gan, E., & Tsing, A. (2018). How Things Hold. *Social Analysis*, *62*(4), 102–145. https://doi.org/10.3167/sa.2018.620406

Garcia, U. (2021). Variations on Hunting and Care: Ownership, Kinship and Other Interspecific Relationships in the Eastern Amazon. *Tipití: Journal of the Society for the Anthropology of Lowland South America*, *17*(1), 52-66.

Gell, A. (1992). *The anthropology of time: Cultural constructions of temporal maps and images*. Berg.

Giosan, L., & Freeman, A. M. (2014). How Deltas work: A brief look at the Mississippi River Delta in a global context. *Perspectives on the Restoration of the Mississippi Delta: The Once and Future Delta*, 29-32.

Giosan, L., Syvitski, J., Constantinescu, S., & Day, J. (2014). Climate change: Protect the world's deltas. *Nature*, *516*(7529), 31–33.

Grosz, E. (1999). *Becomings: Explorations in Time, Memory, and Futures*. Cornell

University Press, New York

Guimarães-Costa, A. J., Machado, F. S., Oliveira, R. R. S., Silva-Costa, V., Andrade, M. C., Giarrizzo, T., Saint-Paul, U., Sampaio, I., & Schneider, H. (2019). Fish diversity of the largest deltaic formation in the Americas—A description of the fish fauna of the Parnaíba Delta using DNA Barcoding. *Scientific Reports*, *9*(1), 7530. https://doi.org/10.1038/s41598-019-43930-z

Haraway, D. J. (2003). *The companion species manifesto: Dogs, people, and significant otherness* (Vol. 1, pp. 3-17). Chicago: Prickly Paradigm Press.

Haraway, D. J. (2008). *When species meet*. University of Minnesota Press.

Hardesty, J., Myers, R. & Fulks, W. (2005). Fire, ecosystems, and people: a preliminary assessment of fire as a global conservation issue. The George Wright Forum 22: 78–87.

Harris, M. (1970). Referential ambiguity in the calculus of Brazilian racial identity. *Southwestern Journal of Anthropology*, *26*(1), 1-14.

Harris, M. (1998a). The Rhythm of Life on the Amazon Floodplain: Seasonality and Sociality in a Riverine Village. *The Journal of the Royal Anthropological Institute*, *4*(1), 65–82. https://doi.org/10.2307/3034428

Harris, M. (1998b). "What it Means to be Caboclo": Some critical notes on the construction of Amazonian caboclo society as an anthropological object. *Critique of Anthropology*, *18*(1), 83–95.

Harris, M. (2005). Riding a wave: Embodied skills and colonial history on the Amazon floodplain. *Ethnos*, *70*(2), 197–219.

Harris, M. (2009). 'Sempre Ajeitando' (Always Adjusting): An Amazonian Way of Being in Time. In *Amazon Peasant Societies in a Changing Environment* (pp. 69-91). Springer, Dordrecht.

Harris, M. (2012). *Rhythm of Wetlandlife Seasonality and Sociality*. Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199573493.013.0045

Harrison, S. (2004a). Forgetful and memorious landscapes. *Social Anthropology*, *12*(2), 135–151. https://doi.org/10.1017/S0964028204000436

Harrison, S. (2004b). Emotional Climates: Ritual, Seasonality and Affective Disorders. *Journal of the Royal Anthropological Institute*, 10(3), 583–602.

Hecht, S. B. (2009). Kayapó savanna management: fire, soils, and forest islands in a threatened biome. In *Amazonian dark earths: Wim Sombroek's vision* (pp. 143-162). Dordrecht: Springer Netherlands.

Helmreich, S. (2011). Nature/culture/seawater. *American Anthropologist*, *113*(1), 132–144.

Heukelbach, J., Wilcke, T., Harms, G., & Feldmeier, H. (2005). Seasonal variation of tungiasis in an endemic community. *The American Journal of Tropical Medicine and Hygiene*, *72*(2), 145–149.

Hughes, R. N., Hughes, D. J., & Smith, I. P. (2014). The ecology of ghost crabs. *Oceanography and Marine Biology: An Annual Review*, *52*, 201-256.

Ingold, T. (1993). The temporality of the landscape. *World Archaeology*, *25*(2), 152–174. https://doi.org/10.1080/00438243.1993.9980235

Ingold, T. (2013). Prospect. In T. Ingold & G. Pálsson (Eds.), *Biosocial becomings: Integrating social and biological anthropology* (pp. 1–21). Cambridge University Press.

Ingold, T., & Simonetti, C. (2022). Introducing Solid Fluids. *Theory, Culture & Society*, *39*(2), 3–29. https://doi.org/10.1177/02632764211030990

Ivars (2022). More than rice: contribution to an ethno-history of resource- and frontier making in the Ayeyarwady Delta, Myanmar (Doctoral dissertation - University of Cologne)

Janeja, M. K., & Bandak, A. (Eds.). (2018). *Ethnographies of waiting: Doubt, hope and uncertainty*. Bloomsbury Academic, an imprint of Bloomsbury Publishing, Plc.

Knight, D. M. (2022). *Vertiginous Life: An Anthropology of Time and the Unforeseen*. Berghahn Books. https://doi.org/10.1515/9781800731943

Kothari, U., & Arnall, A. (2020). Shifting sands: The rhythms and temporalities of island sandscapes. *Geoforum*, *108*, 305–314. https://doi.org/10.1016/j.geoforum.2019.03.006

Krause, F. (2013). Seasons as Rhythms on the Kemi River in Finnish Lapland. *Ethnos*, *78*(1), 23–46. https://doi.org/10.1080/00141844.2011.623303

Krause, F. (2017). Towards an Amphibious Anthropology of Delta Life. *Human Ecology*, *45*(3), 403–408. https://doi.org/10.1007/s10745-017-9902-9

Krause, F. (2021a). Economy, identity and hydrology: Toward a holistic approach to intersecting volatilities in the Mackenzie Delta, Canada. In F. Krause & M. Harris (Eds.), *Delta life: Exploring dynamic environments where rivers meet the sea* (pp. 102–125). Berghahn.

Krause, F. (2021b). The tempo of solid fluids: On river ice, permafrost, and other melting matter in the Mackenzie Delta. *Theory, Culture & Society*, *39*(2), 31–52. https://doi.org/10.1177/02632764211030996

Krause, F. (2022). Rhythms of wet and dry: Temporalising the land-water nexus. *Geoforum*, *131*, 252–259. https://doi.org/10.1016/j.geoforum.2017.12.001

Krause, F., & Strang, V. (2016). Thinking Relationships Through Water. *Society & Natural Resources*, *29*(6), 633–638. https://doi.org/10.1080/08941920.2016.1151714

Krauss, K. W., McKee, K. L., Lovelock, C. E., Cahoon, D. R., Saintilan, N., Reef, R., & Chen, L. (2014). How mangrove forests adjust to rising sea level. *New Phytologist*, *202*(1), 19–34. https://doi.org/10.1111/nph.12605

Kuenzer, C., & Renaud, F. G. (2012). Climate and Environmental Change in River Deltas Globally: Expected Impacts, Resilience, and Adaptation. In F. G. Renaud & C. Kuenzer (Eds.), *The Mekong Delta System* (pp. 7–46). Springer Netherlands.

https://doi.org/10.1007/978-94-007-3962-8_2

Kuhn, L. A., Zonneveld, K. A., Souza, P. A., & Cancelli, R. R. (2023). Late Quaternary palaeoenvironmental evolution and sea level oscillation of Santa Catarina Island (southern Brazil). *Biogeosciences*, *20*(10), 1843-1861.

Kusenbach, M. (2003). Street phenomenology: The go-along as ethnographic research tool. *Ethnography*, *4*(3), 455–485.

Lacerda, L. D. D. (2018). Burial of mangroves by mobile dunes: a climate change threat in semiarid coasts.

Lahiri-Dut, K. (2014). Beyond the water-land binary in geography: Water/lands of Bengal re-visioning hybridity Kuntala Lahiri-Dut. *ACME: An International Journal for Critical Geographies*, *13*(3), 505–529.

Lahiri-Dutt, K., & Samanta, G. (2013). *Dancing with the River: People and Life on the Chars of South Asia*. Yale University Press.

Lemos, J. R., & de Pinho, I. F. (2020). *Guia Ilustrado de Plantas da Região do Delta do Parnaíba (NE Do Brasil)*. Editora Blucher

Lefebvre, H. (2004). *Rhythmanalysis: Space, Time and Everyday Life*. London: Continuum

Leonel, M. (2000). O uso do fogo: O manejo indígena e a piromania da monocultura. *Estudos Avançados*, *14*(40), 231–250. https://doi.org/10.1590/S0103-40142000000300019

Lima D. D. M., & Alencar, E. F. (2001). *A lembrança da História: Memória social, ambiente e identidade na várzea do Médio Solimões*. Lusotopie. http://www.lusotopie.sciencespobordeaux.fr/lima.pdf

Lima-Ayres, D. (1999). A construçao histórica do termo caboclo. Sobre estruturas e representaçoes sociais no meio rural Amazoônico. Novos Cadernos do Naea, 2, 5–32.

Lins, R. C., & Andrade, G. O. de. (2011). Aspectos hidrográficos da bacia do Parnaíba. *Ciência & Trópico*, *3*(2). Retrieved from https://periodicos.fundaj.gov.br/CIC/article/view/153

Machado, J. S. (2012). Lugares de gente: mulheres, plantas e redes de troca no delta amazônico. *PPGAS, Museu Nacional, UFRJ*.

Maizza, F. (2014). Sobre as crianças-planta: O cuidar e o seduzir no parentesco Jarawara. *Mana*, *20*(3), 491–518. https://doi.org/10.1590/S0104-93132014000300003

Maizza, F., & Oliveira, J. C. D. (2022). Narrativas do Cuidar: Mulheres indígenas e a política feminista do compor com plantas. *Mana*, *28*(2), e282102. https://doi.org/10.1590/1678-49442022v28n2a102

Maneschy, M. C., Siqueira, D., & Álvares, M. L. M. (2012). Pescadoras: subordinação de gênero e empoderamento. *Revista Estudos Feministas*, *20*(03), 713-737.

Martin, A., Myers, N., & Viseu, A. (2015). The politics of care in technoscience. *Social*

Studies of Science, *45*(5), 625–641. https://doi.org/10.1177/0306312715602073

Mathur, A., Cunha, D. da, Meeks, R., Wiener, M., & University of Pennsylvania (Eds.). (2014). *Design in the terrain of water* (1. ed). Applied Research + Design Publ.

Mathur, A., & da Cunha, D. (2020). Wetness Is Everywhere: Why Do We See Water Somewhere? *Journal of Architectural Education*, *74*(1), 139–140.

Mattos, F. F. (2006). "Reservas Morais: estudo do modo de vida de uma comunidade na Reserva Extrativista Marinha do Delta do Parnaíba." Master diss., Universidade Federal Rural do Rio de Janeiro.

Mauss, M. (1979). *Seasonal Variations of the Eskimo: A Study in Social Morphology*. Routledge.

Mavignier, D. (2005). No Piauhy, na terra dos tremembés. *Parnaíba. Sieart Graf* Millar, K. M. (2018). *Reclaiming the discarded: Life and labor on Rio's garbage dump*. Duke University Press.

McLean, S. J. (2013). "Seaweeds and Limpets Will Grow on our Grave Stones": On Islands, Time, Death and Inhuman Materialities. In Meinert, L., et al. *Taming Time, Timing Death: Social Technologies and Ritual*. Ashgate Publishing Ltd, pp. 17-39.

McLean, S. (2015). Materiality and Culture. In J. D. Wright (Ed.), *International Encyclopedia of the Social & Behavioral Sciences* (pp. 765–771). Elsevier. https://doi.org/10.1016/B978-0-08-097086-8.12207-X

Michael, B. G., Fikru, C., & Teka, T. (2018). Tungiasis: An Overview. *Journal of Parasitology and Vector Biology*, *10*(6), 66–72.

Milano, Claudio. (2013). "De Espacio Rural a Espacio Turístico: Una Etnografía Del Desarrollo En El Delta de Parnaíba (Brasil)." *Quaderns-e* 18 (1): 128-143.

Milano, C. (2015). *'Eran bichos de siete cabezas' una isla del Delta del Parnaíba (Brasil) en la mira de la promoción turística transnacional*. Universitat Autònoma de Barcelona.

Millar, K. M. (2014). The Precarious Present: Wageless Labor and Disrupted Life in Rio de Janeiro, Brazil. *Cultural Anthropology*, *29*(1), 32–53. https://doi.org/10.14506/ca29.1.04

Millar, K. M. (2018). *Reclaiming the discarded: Life and labor on Rio's garbage dump*. Duke University Press.

Miller, T. L. (2019). *Plant kin: A multispecies ethnography in indigenous Brazil*. University of Texas Press.

MMA/SDS. (2002). Zoneamento Ecológico- Econômico do Baixo Rio Parnaíba: Subsídios técnicos, Relatório Final. - Brasília.

Moran, E. (1974). The adaptive system of the Amazonian caboclo. In *Man in the Amazon* (ed.) C. Wagley. NewYork: Columbia Univ. Press.

Morita, A., & Suzuki, W. (2019). Being Affected by Sinking Deltas: Changing Landscapes,

Resilience, and Complex Adaptive Systems in the Scientific Story of the Anthropocene. *Current Anthropology*, *60*(S20), S000–S000.

Motta-Maués, M. A. (1999). Pesca de homem/peixe de mulher (?): repensando gênero na literatura acadêmica sobre comunidades pesqueiras no Brasil. *Etnográfica. Revista do Centro em Rede de Investigação em Antropologia*, *3*(2)), 377-400.

Mukherjee, J., & Ghosh, P. (2020). Fluid Epistemologies: The Social Saga of Sediments in Bengal. *Ecology, Economy and Society–the INSEE Journal*, *3*(2). https://doi.org/10.37773/ees.v3i2.222

Napoleão do Rego, J. M. A. (2010). *Dos sertões aos mares: História do comércio e dos comerciantes de Parnaíba (1700-1950)*. Doctoral Thesis, UFPI.

Nelson, D. R., & Finan, T. J. (2009). Praying for Drought: Persistent Vulnerability and the Politics of Patronage in Ceará, Northeast Brazil. *American Anthropologist*, *111*(3), 302–316. https://doi.org/10.1111/j.1548-1433.2009.01134.x

Nicholls, R. J., Adger, W. N., Hutton, C. W., & Hanson, S. E. (Eds.). (2020). *Deltas in the Anthropocene*. Palgrave Macmillan.

Nugent, S. (1993). *Amazonian caboclo society: an essay on invisibility and peasant economy*. Oxford: Berg.

Nuttall, M. (2010). Anticipation, climate change, and movement in Greenland. *Études/Inuit/Studies*, *34*(1), 21–37.

Oliveira, P. V. S. (2016) Cidades visíveis, sujeitos invisíveis: pescadores em Parnaíba nas décadas de 1970 e 1980. [accessible online] http://www.encontro2016.historiaoral.org.br/resources/anais/13/1461873793_ARQUIVO_Cidadesvisiveis-versaofinal-encontro-de-historia-oral.pdf

Oliveira, P. V. S. (2017). Súditos da "Princesa do Igaraçu": trabalhadores em Parnaíba-PI na década de 1970. *Temporalidades*, *9*(2), 324–347.

Oliveira, P. V. S. (2019). Na Mira das Enchentes: Mundo Natural E Pobreza Suburbana (Parnaíba-Pi, Anos 1970) *História e Cultura*, *8*(1), 47.

Pace, R. (2004). Failed guardianship or failed metaphors in the Brazilian Amazon? Problems with "imagined eco-communities" and other metaphors and models for the Amazon peasantries. *Journal of Anthropological Research*, *60*(2), 231–260.

Perry, D. M. (1988). Effects of Associated Fauna on Growth and Productivity in the Red Mangrove. *Ecology*, *69*(4), 1064–1075. https://doi.org/10.2307/1941262

Pinheiro, Á., Moura, C., & Alves, F. (2011). MUSEUS COMUNITÁRIOS, MUSEUS SANS MURS: um projeto participativo de promoção da sustentabilidade, da cidadania e dos saberes locais. *In* Pinheiro, Áurea; Gonçalves, Luís Jorge; Calado, Manuel. *Patrimônio arqueológico e cultura indígena. Teresina e Lisboa: EdUFPI e FBAUL*, 17-53.

Pinto, H. (1949). O municipio de Araioses e suas fonts de produção, em correlaçao com o Serviço Federal de Portos, Rios e Canais. *Diário de São Luiz*, pp. 6-8.

Pivello, V. R. (2011). The use of fire in the Cerrado and Amazonian rainforests of Brazil: past and present. *Fire ecology*, *7*, 24-39

Pivello, V. R., Vieira, I., Christianini, A. V., Ribeiro, D. B., Da Silva Menezes, L., Berlinck, C. N., Melo, F. P. L., Marengo, J. A., Tornquist, C. G., Tomas, W. M., & Overbeck, G. E. (2021). Understanding Brazil's catastrophic fires: Causes, consequences and policy needed to prevent future tragedies. *Perspectives in Ecology and Conservation*, *19*(3), 233–255. https://doi.org/10.1016/j.pecon.2021.06.005

Puig de la Bellacasa, M. (2012). 'Nothing Comes Without Its World': Thinking with Care. *The Sociological Review*, *60*(2), 197–216. https://doi.org/10.1111/j.1467-954X.2012.02070.x

Puig de la Bellacasa, M. (2017). *Matters of care: Speculative ethics in more than human worlds*. University of Minnesota Press.

Quaresma, A. P. (2015). Mulheres e quintais agroflorestais: a "ajuda invisível" aos olhos que garante a reprodução da agricultura familiar camponesa amazônica. *COLETÂNEA SOBRE ESTUDOS RURAIS E GÊNERO*, 35.

Raffles, H. (2002a). In Amazonia: a natural history Princeton University Press. *Princeton NJ*.

Raffles, H. (2002b). Intimate knowledge. *International Social Science Journal*, *54*(173), 325–335. https://doi.org/10.1111/1468-2451.00385

Ramalho, C. W. N. (2011). A formação histórica da pesca artesanal: origens de uma cultura do trabalho apoiada no sentimento de arte e de liberdade. *Cadernos De Estudos Sociais*, *24*(2). https://periodicos.fundaj.gov.br/CAD/article/view/1409

Ramalho, C. W. N. (2014). Estado, pescadores e desenvolvimento nacional: Da reserva naval à aquícola. *RURIS (Campinas, Online)*, *8*(1). https://doi.org/10.53000/rr.v8i1.1740

Richardson, T. (2021). Displacing the Delta: Notes on the Anthropology of the Earth's Physical Features. In Krause, F. and Harris, M. (eds.): *Delta Life: Exploring Dynamic Environments where Rivers Meet the Sea*. Oxford, New York: Berghan, 2021. 26-54.

Rizvi, U. Z. (2015). Crafting resonance: Empathy and belonging in ancient Rajasthan. *Journal of Social Archaeology*, *15*(2), 254–273.

Rose, D. B. (2012). Multispecies Knots of Ethical Time. *Environmental Philosophy*, *9*(1), 127–140. http://www.jstor.org/stable/26169399

Rose, D. B. (2014). Death and Grief in a World of Kin. In *The handbook of contemporary animism* (pp. 137-147). Routledge.

Roth-Gordon, J. (2017). *Race and the Brazilian body: Blackness, whiteness, and everyday language in Rio de Janeiro*. Univ of California Press.

Sahlins, M. 1972. "The original affluent society," in Stone Age economics. London: Tavistock.

Sansone, L. (2003). *Blackness without ethnicity: Constructing race in Brazil*. Springer.

Schaeffer-Novelli, Y. et al. (2000). Brazilian Mangroves, *Aquatic Ecosystem Health & Management* 3(4), 561–70.

Schaeffer-Novelli, Y. (2002). Manguezal, marisma e apicum (Diagnóstico Preliminar). In Fundação Biol (ed.). *Avaliações e ações prioritárias para conservação da biodiversidade das Zonas Costeira e Marinha*. Rio et al. MMA/SBF, Brasília. pp. 119.

Schroer, S. A, van Dooren, T., Münster, U. & Reinert, H. (2021). "Introduction: Multispecies Care in the Sixth Extinction." Theorizing the Contemporary, *Fieldsights*, January 26. https://culanth.org/fieldsights/introduction-multispecies-care-in-the-sixth-extinction

Schwarcz, L. M. (2017). I Was Cannibalized by an Artist. Adriana Varejão, or Art as Flux. In *Unfinished* (pp. 173-196). Duke University Press.

Scoones, I. (2019). *What is Uncertainty and Why Does it Matter?* STEPS Centre.

Scott, J. C. (2009). *The art of not being governed: An anarchist history of upland Southeast Asia*. Yale University Press.

Silva, L. O. (1997). As Leis Agrárias E O Latifúndio Improdutivo. *São Paulo Em Perspectiva*, 11.

Solnit, R. (2016). *Hope in the dark: Untold histories, wild possibilities*. Canongate.

Steinberg, P., & Peters, K. (2015). Wet Ontologies, Fluid Spaces: Giving Depth to Volume through Oceanic Thinking. *Environment and Planning D: Society and Space*, *33*(2), 247–264. https://doi.org/10.1068/d14148p

Spalding, M., McIvor, A., Tonneijck, F. H., Tol, S., & Van Eijk, P. (2014). Mangroves for coastal defence. Guidelines for coastal managers & policy makers. *Wetlands International and the nature conservancy*, *42*.

Strang, V. (2006). Substantial Connections: Water and Identity in an English Cultural Landscape. *Worldviews: Global Religions, Culture, and Ecology*, *10*(2), 155–177. https://doi.org/10.1163/156853506777965820

Szczygielski, A., Stattegger, K., Schwarzer, K., da Silva, A. G. A., Vital, H., & Koenig, J. (2015). Evolution of the Parnaíba Delta (NE Brazil) during the late Holocene. *Geo-Marine Letters*, *35*(2), 105–117. https://doi.org/10.1007/s00367-014-0395-x

Tiphagne, N. (2005). *Entre Nature et culture, les enchantements et les métamorphoses dans le monde caboclo de l'Est de l'île de Marajó: Invention et discours sur l'autre, prémisses d'une identité* [Thèse de doctorat, Université de Paris VII]. http://sealance.free.fr/nicolas_these.doc

Telles, E. E., & Sue, C. A. (2009). Race mixture: Boundary crossing in comparative perspective. *Annual Review of Sociology*, 129-146.

Tronto, J. C. (1993). *Moral boundaries: A political argument for an ethic of care*. Psychology Press.

Tsing, A. L. (2015). *The mushroom at the end of the world: On the possibility of life in*

capitalist ruins. Princeton University Press.

Van Dooren, T. (2014a). *Flight Ways: Life and Loss at the Edge of Extinction*. Columbia University Press. https://doi.org/10.7312/vand16618

Van Dooren, T. (2014b). Care. https://www.multispecies-salon.org/care/

Vianna, L. P. (1996). *Considerações críticas sobre a construção da idéia de população tradicional no contexto das Unidades de Conservação. São Paulo, 1996* (Doctoral dissertation, Dissertação apresentada ao Departamento de Antropologia da USP)

Wawzyniak, J. (2012). Humanos e não-humanos no universo transformacional dos ribeirinhos do rio Tapajós – Pará. *Mediações - Revista de Ciências Sociais*, *17*(1)

Westerlaken, M. (2021). What is the opposite of speciesism? On relational care ethics and illustrating multi-species-isms. *International Journal of Sociology and Social Policy*, *41*(3/4), 522-540.

Whitehouse, A. (2017). Loudly sing cuckoo: More-than-human seasonalities in Britain. *The Sociological Review Monographs*, *65*(1), 171–187.

WinklerPrins, A. M., & de Souza, P. S. (2005). Surviving the city: urban home gardens and the economy of affection in the Brazilian Amazon. *Journal of Latin American Geography*, 107-126.

Wolf, E. R. (1982). *Europe and the People without History*. Univ of California Press.

You, H. (1994). Defining rhythm: Aspects of an anthropology of rhythm. *Culture, Medicine and Psychiatry*, *18*(3), 361–384.