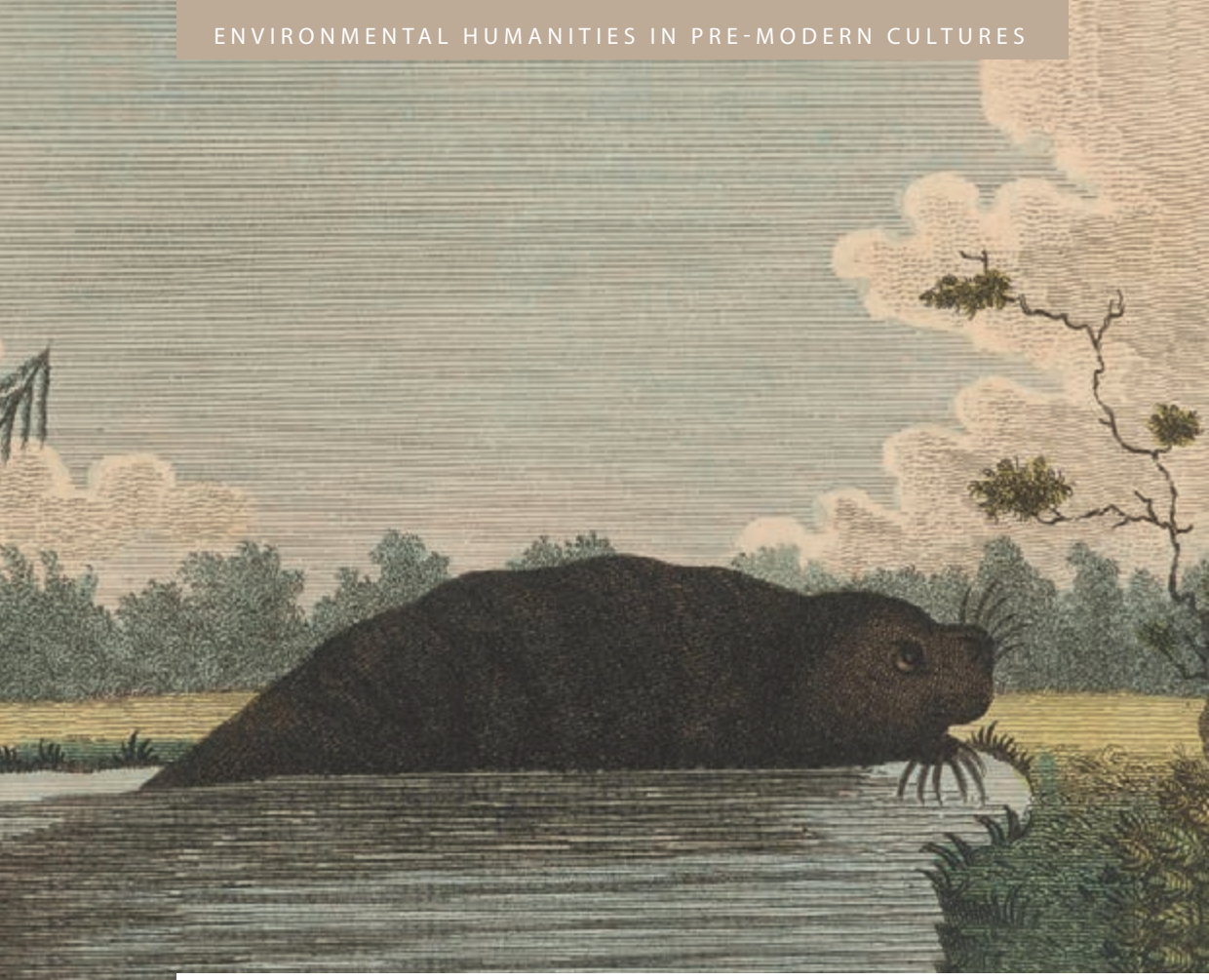
ENVIRONMENTAL HUMANITIES IN PRE-MODERN CULTURES



Cristina Brito

Humans and Aquatic Animals in Early Modern America and Africa

Amsterdam
University
Press

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Early Modern America and Africa

Environmental Humanities in Pre-modern Cultures

This series in environmental humanities offers approaches to medieval, early modern, and global pre-industrial cultures from interdisciplinary environmental perspectives. We invite submissions (both monographs and edited collections) in the fields of ecocriticism, specifically ecofeminism and new ecocritical analyses of under-represented literatures; queer ecologies; posthumanism; waste studies; environmental history; environmental archaeology; animal studies and zooarchaeology; landscape studies; 'blue humanities', and studies of environmental/natural disasters and change and their effects on pre-modern cultures.

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Acknowledgements

When I first started to conduct my research on the early modern occurrence of marine mammals and sea monsters in the Atlantic, I was probably something like the naturalist Ulisses Aldrovandi back in the 17th century. I was determined to encompass everything. Quite the contrary to Aldrovandi, who actually (almost) managed it, I soon realised that this would be mission impossible for me. Nevertheless, I endured.

At a certain point, I decided that I was ready to write my piece on Pero de Magalhães Gândavo's sea monster, the one seen and killed on the shores of São Vicente, Brazil, in 1564, whose story was published by the Portuguese author in Lisbon, in 1576. This was having collected many accounts of this event and having compiled a clear chronology of its dissemination throughout Europe in that period. In fact, the news about this sea monster was spread and published in multiple printed formats across Europe right after its publication in Lisbon, and well into the 16th and 17th centuries – not to mention the 20th century. Moreover, despite occasional references in the scholarship, the current international historiography continues to omit Gândavo's sea monster. So, back in 2015, I was almost sure that I had covered everything: documental sources, iconography, and reference books. I was wrong.

Just a couple of weeks before publishing my investigation, by pure chance, I found a book that mentioned the work by León de Pinelo and that featured a new drawing of Gândavo's sea monster with a brief description of the encounter between the beast and the man. Just in time to include it in my work "New Science from Old News." By then, I was confident that I had, indeed, covered everything and I was happy with the direction my essay on this topic was heading. Showing how – to European eyes – this information about sea exoticism and curiosities had been produced in South America and how it was being disseminated from Brazil to Lisbon and from Lisbon to the rest of Europe. I thought I was done with this sea monster and ready to move to another one. I was wrong again.

After Gândavo's sea monster, I started to get interested in mermaids and manatees, and how early modern categories of natural history encompassing these two creatures – one imaginary, the other real – had been constructed by different peoples, and how they intermingled over time and across regions. I was also interested in learning how the animal became a legend, and whether the myth was reflected in the first written descriptions of this tropical marine mammal. And how local and Indigenous peoples in

Africa and the Americas utilised the animal, and its products, and how it related to European perceptions of nature, the sea, and natural resource exploitation. This aspect of my research led me to the John Carter Brown Library (JCB) at Brown University (Providence, USA), in the Spring of 2018, where I gained access to many sources and a panoply of new possibilities to widen my search. I was on the lookout for manatees, but it took me only about one hour on my first day at the JCB Library to discover new evidence about the whereabouts of the infamous Brazilian sea monster. I then realised that new sources and information were available for me to explore and that further insights would emerge from them. So, where would Gândavo's sea monster take me this time?

My investigation moved forward while looking for representations of sea monsters, seals, whales, sharks, sea turtles, and manatees, and while reading about their lives, habitats, and behaviours, as well as about peoples' encounters with these large marine animals in different parts of the modern Atlantic world, and how the animals sometimes reflected individual and collective peoples' thoughts and choices in relation to their surrounding natural world. In this way, my focus became not just monsters from the seas but also, and mostly, manatees. I arrived at a moment where I felt confident, once more, that I had compiled if not everything, then enough information to make my point. I had found descriptions of episodes where empathy and trust in relation to some marine animals was denoted, appearing in clear opposition to fearful events and episodes of total disconnection with or an indifference towards the aquatic environment.

So, as I started this enterprise of a new book, I thought I had more than enough information to addresses human perceptions, fears, beliefs, and feelings regarding the marine environment in juxtaposition with early modern practices of their hunting, exploitation, and use along the Atlantic shores and its waters bodies. I may well be wrong again.

***

But before going any further, I need to say thank you to the many institutions, groups, and people that supported me and helped me along the way, starting in Lisbon and visiting various other locations in the world.

This study was supported by CHAM, the Centre for the Humanities at NOVA FCSH's Strategic Project (FCSH, Universidade NOVA de Lisboa, Universidade dos Açores) by FCT – Fundação para a Ciência e Tecnologia (UID/HIS/04666/2019 and UID/HIS/04666/2020). The kick-starting happened during a short-term research stay as an Invited Calouste Gulbenkian

Research Scholar at the John Carter Brown Library at Brown University (Spring 2018). This research was also partially supported by: a research contract with FCT (IF/00610/2015) (2016–2019) through the exploratory research project "NGULU – Cow-fish, ngulu-maza or iguaragua? Local and global knowledge production, changing perceptions and practices on marine animals in the Atlantic, 1419–1758"; exploratory funds from NOVA FCSH with the "ONE – Humanities for the ocean" project (2018–2020); and the EC project "CONCHA – The construction of early modern global cities and oceanic networks in the Atlantic: An approach via the ocean's cultural heritage" (H2020-MSCA-RISE-2017-777998) (2018–2023). Support was also given by the ERC Synergy Grant "4-OCEANS: Human History of Marine Life" (Grant Agreement Nº 951649). The global network Oceans Past Initiative and UNESCO "Ocean's Cultural Heritage" Chair have also been fora of important scientific support.

As mentioned, my investigation has been conducted at CHAM and special thanks are due to many colleagues and friends, both for their direct help in providing access to documentary and iconographic sources, for translation of written material from diverse origins, as well as for their indirect support while writing. Based in Lisbon, I was able to network and interact with colleagues from around the world; some visited us here, others I met while attending scientific events and meetings, while others have kept contact through digital media and online conversations. Hoping not to forget anyone, I would like to acknowledge with special care the following people who in many ways contributed to the book.

For mentoring and friendship, João Paulo Oliveira e Costa. For his continuous and reassuring presence, shoulder to shoulder, João Luís Lisboa.

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own "monsters," while discussing manatees and other monstrosities of the waters.

Among the many scholars from different origins and backgrounds I have listened to over the years and learnt a lot from, I must mention: Poul Holm, Francis Ludlow, James Barrett, John Nichols, Alison MacDiarmid, Anne Karin Hufthammer, Florike Egmond, Daniel Quiróz, Ailton Krenak, Pedro Cardim, Margarita Rodríguez Garcia, Pablo Ibanez Bonillo, Maria Adelina Amorim, Juciene Ricarte Apolinário, Wellington Castellucci Junior, Giovanni José da Silva, Samuel Iglesias, Ryan Jones, Juan Marchena†, Nayibe Montoya, Lucy Keith-Diagne, Diogo de Carvalho Cabral, Regina Horta Duarte, and Steve Mentz. A special word to José Espinosa who tracked down and carefully transcribed a great source in Seville. A word, too, to several research assistants who have worked with our team, over time, helping to select, transcribe, and translate sources.

A final word to the closest of the closest, my loving family, who endure long absences and profound silences with a smile, who listen repeatedly to my ramblings about whales and dolphins, manatees and mermaids, sharks and sea monsters, and who help me believe in all the possibilities of this fluid world we live in. To Jeremias Silva†, Orlanda Ribeiro†, Nazaré Rocha, Armando Taborda, Susana Brito, Bruno Silvestre, Francisco Silvestre, Celso Pinto, Martim Pinto, Herbert Maia, Maria Benevides, Rodrigo Galvão, and Raquel Maia.

And always and forever to my lovely and much adored daughter Rafaela Maia, to whom I dedicate this book and all the work I do, may she be certain that all is possible.

A todas e todos, sem exceção, o meu sentido agradecimento.

Introduction

Magnificent and mighty monsters of nature

Abstract: This introduction sets the tone for the whole book, which opens in Chapter 1 with the story of Matto the manatee, written by Lopéz de Gomara in the early 16th century and retold by several other authors, from Herrera y Tordesillas in 1725 to Durand in the 20th century. Here, I address the agency of Native American and European peoples and discuss the agency of marine mammals and other large aquatic animals and water monsters. My aim is to unravel different stories in order to assemble a history of the interactions between humans and marine animals in the early modern Atlantic. I will use documentary and iconographic historical sources for West Africa and the Americas that include aquatic animals in their descriptions.

Keywords: sea monsters; aquatic animals; human and nonhuman interactions; environmental history; early modern age.

Animals are everywhere, and there has never been any purely human moment in history.[1]

We come, in last place, to an animal that terminates the boundary between quadrupeds and fishes. Instead of a creature preying among the deeps, and retiring upon land for repose or refreshment, we have here an animal that never leaves the water, and is enabled to live only there. It cannot be called a quadruped, as it has but two legs only.; nor can it be called a fish, as it is covered with hair. In short, it forms the link that unites those two great tribes to each other; and may be indiscriminately called the last of the beasts, or the first of fishes.[2]

1 Goldsmith (1822), *An History of the Earth and Animated Nature*, vol. II, p. 339.

2 Goldsmith (1822) vol II, p. 339.

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As a child, I used to write secret notes, fold them into small papers, and then, with my body stretched full-length, reach the top of the bookshelf and hide them from everyone's eyes. I lived in that same house from my childhood till college, and never divulged the secrets of my hiding place. Later, when I returned to that place as an adult, I noticed that the top shelf was right in front of my eyes and all my notes were clearly visible to anyone. I realised then, for the first time, the importance of our own perception of our environment and how it changes over time.

Many, many years later, when visiting the island of São Tomé (São Tomé and Príncipe, Gulf of Guinea) with a team of European biologists, I interviewed fishermen about the value of cetaceans. The survey included the question, "Do you like dolphins?" Answer: "Yes." From my conservationist perspective, this seemed to be an excellent indicator for maintaining healthy natural populations. The next question was, "Do you hunt and eat dolphins?" Answer: "Yes"! For these fishermen, liking dolphins meant being happy that they existed, so that they could capture them. We clearly perceived different realities in relation to the same animals.[3] These differences reflected the physical, cultural, social, and economic interactions of individuals and peoples with their surroundings, local nature, and resources.

Of course, throughout history, worldviews and perceptions of natural environments have differed according to culture and time. This diversity over time exists not only between different societies and cultural groups, but also within similar local communities bordering the same ecosystems and facing the same ecological issues.[4] Paradoxically, in different societies people tend to look at and perceive similar resources, elements of fauna and flora, and ecosystems in general, in a similar way. Divergence and convergence in perceptions of nature are found throughout history.

As an environmental historian of the early modern era, I realise that today, more than ever before, most marine habitats, seascapes, and large marine animals have historically been seen as alien to the terrestrial realm, as if the sea itself was a foreign element to the human essence. This strangeness has contributed to most modern Western societies (from the 15th to 18th centuries) describing marine megafauna, for example marine mammals, sea turtles, and sharks, as marvels, monstrosities, and eccentricities.

3 See Hart, Gray, & Stead (2013), *Consumptive Versus Non-Consumptive Use of Sea Turtles?*

4 Besides highlighting the value of acknowledging and understanding local perceptions towards the environment and animals, this may be a clue to the fact that, nowadays, customised environmental management measures are usually necessary. See Hart, Gray, & Stead (2013).

From the 15th century onwards, when European mariners, explorers, and settlers started in situ observations and descriptions of tropical marine fauna, they were relying on their own eyes, mental preconceptions, as well as previously acquired knowledge.[5] In fact, they had their own mindsets, belief systems, and understandings of the world to cope with. And the same happened with European naturalists, sitting in their offices, writing their encyclopaedias, and establishing networks of information. Thus, whales, sharks, rays, or other large animals could easily turn into a terrifying monster of the depths, regardless of whether humans were observing them or writing about them at a distance.

Yet, no matter how strange these new animals were to the eyes of European pilots, naturalists, and humanists, they were not strange at all to native peoples bordering the Atlantic Ocean. Peoples depending on nature or living in close connection with it have typically paid closer attention to their environment, creating traditional cosmologies where humans are part of a complex web of ecological relationships.[6] History shows that, across the globe, animals are more than just things to be named or eaten; they have magical or symbolic meanings,[7] and have been considered an important part of a whole community up to today.

Ways of perceiving marine animals have changed during the early modern period. Meanwhile, practices and exchanges developed, peoples interconnected, and knowledge and values evolved. The human mind understands reality, builds knowledge, and moves forward through a dialectical process between experience and preconceived ideas. This cognitive process is triggered in a reciprocal and labyrinthine dialogue, leading to the construction of a certain idea or perception of reality, whether it concerns modern Europeans or natives of any region.[8]

Sea monsters from the past gradually became valuable exploitable resources and, more recently, due to their imminent danger of extinction, global conservation icons.[9] This is the case of large whales across the globe;

5 The concept of recognising the known, when addressing the novelty by Europeans, in the early modern Atlantic explorations is discussed in "*De 'partes (de África)' não se faz um todo*," in Almeida (2015), *Despenteando Parágrafos*.

6 See the paper by Sepie (2017), "More than Stories, More than Myths."

7 Holmes et al. (2018), *Fantastic Beasts and Why to Conserve Them*.

8 Following Almeida (2015).

9 Several authors have been addressing these paradigms of marine megafauna changing in humans' perceptions from sea monsters to icons. See e.g. Laist (2017), *North Atlantic Right Whales*; Brito (2018), *Beauties and Beasts*; Giovos et al. (2019), *An International On-Line Social Survey of Public Attitudes Towards Cetaceans*.

nowadays, nearly all countries are working towards the preservation of these giants of the oceans. Nevertheless, different societies perceive and materialise their relationships with whales in quite different ways. For instance, Japan has recently resumed its national right to hunt whales in their territorial waters, thus leaving the International Whaling Commission (IWC) in December 2018.[10] Despite this, there is a tendency towards a more conservation-oriented perspective in Westernised countries. Predatory consumptive attitudes regarding marine megafauna had remained common practice in these countries for centuries. This is true not just for whales, but also for sea turtles and even large fish. It is also true in regard to manatees.[11]

This change arises from a long-lasting history of negative interactions between humans and the marine environment and a deep-rooted tradition of perceiving and using nature as a human playground and a garden of infinite resources to explore. As mentioned above, there are many cases of an evolving convergence in the use of similar resources by groups of people who have never met one another – whaling is one of them. Upon understanding the value of the resource there is a tendency to develop techniques to exploit it continuously according to human needs. The methods can differ, but the principles of capture – fishing or hunting – as well as the final goal are actually similar. However, even within the same communities or cultures, there are small groups of people, or individuals, who regard some aspects of nature differently from the others. Concurrently, there are robust and durable cultural dissimilarities in the perception of certain animals; examples include sharks and manatees.

While reading Portuguese and Spanish early modern sources for the Americas, I came across a well-known history of a certain manatee. Its name was Matto. Or, more accurately, her name was Matto, as apparently this manatee was a female. It reminded me of how of a single animal can be seen so diversely by different people. And it led me to extrapolate to the way the same marine animals are seen universally – sometimes in convergence and times in divergence. But before heading into the story of Matto, let me go through the current situation concerning manatees in West Africa and the US. These are two places on Earth where nature and resources

10 The IWC is the global body charged with the conservation of whales and the management of whaling. https://iwc.int/home

11 Manatees are herbivorous aquatic mammals or the Order Sirenia, which encompasses three species distributed along the eastern and western shores of the tropical Atlantic Ocean. They are listed as vulnerable by ICUN. The population trend is decreasing for the American Manatee (*Trichechus manatus*) and Amazonian Manatee (*Trichechus inunguis*) and unknown for the African Manatee (*Trichechus senegalensis*). Keith Diagne (2015), *Trichechus senegalensis*.

management are quite different. Yet, human activities and presence still impact tremendously upon the natural populations of manatees and other aquatic megafauna here, albeit in different ways. Manatees are killed for human consumption in West African countries, while manatees are killed by boat strikes in the US.[12]

In Senegal, we find an NGO[13] that works successfully towards the conservation of manatees and other aquatic animals. But, even with the development of conservation movements and local and regional measures, they continue to be exploited for aquatic bushmeat[14] and many other purposes. Recent news from Nigeria highlights such cases:

> Manatee killed today at Oguta Lake by a local fisherman. According to him, he has never seen something like that, therefore, the creature is a sign of [the] end time…Another senseless killing of manatees in Nigeria last week – this time a mother and her young calf. We are now working closely with our colleague in the region to get education programs started for the public. Getting wildlife officials to enforce the laws protecting manatees is extremely challenging, but we've got to start somewhere.[15]

This event reveals some similarities with past ways of perceiving and valuing marine animals. As we will see later in the book, we find the mythical and the mundane animal simultaneously in the same body. The creature is a sign of the end of time, but it is also used as a food resource.

In West Africa, aquatic bushmeat was mostly obtained opportunistically and probably originally intended solely for local consumption. Despite this, direct catches occur today in the following countries: Benin; Gambia; Ghana; Guinea; Guinea-Bissau; Ivory Coast; Liberia; Mali; Niger; Nigeria; Senegal; Sierra Leone; and Togo.[16] Manatee meat is used nowadays in West Africa

12 Florida manatee deaths hit a record high in 2013, with 829 killed – about 17 per cent of the known population – including 126 calves. Reported causes of death included: 276 by algae blooms; 115 by unknown disease; and 72 by boat collisions (see the website of the organisation Sirenian International https://sirenianinternational.org/).

13 African Aquatic Conservation Fund: https://www.facebook.com/AfricanAquaticConsFund/

14 Aquatic bushmeat is products derived from wild aquatic megafauna (e.g. marine mammals), which are used for human consumption and non-food purposes, including traditional medicine.

15 Facebook post from African Aquatic Conservation Fund, about the manatee captures in Nigeria, 2017. This NGO is locally applying legislation for the protection of manatees, working in the recovery and rescue of manatees captured by fishermen and working on environmental education and dissemination of nature conservation in local communities.

16 Cosentino & Fisher (2016), *The Utilization of Aquatic Bushmeat from Small Cetaceans and Manatees in South America and West Africa*.

as a food resource, and some parts of the manatee (such as the heart or bones) are used in ritual ceremonies and as an important natural element for traditional communities. Additionally, several traditions in these regions that revolve around hunting the manatee continue to this day. Thus, despite legal protections, the use of manatees is apparently growing.

During the summer of 2017, we witnessed the fury of Hurricane Irma in the United States. Alongside the devastation caused by this phenomenon, we experienced moments of strong empathy towards nature and animals, as rescuers braved the hurricane to save manatees. Due to their conservation status, each animal counts and any animal is considered to be an individual to protect and save.

> Hurricane Irma's winds drained waterways around Tampa Bay late this morning, even though the storm was 200 miles away. It happened so fast that some manatees were apparently caught off-guard, leading to at least one impromptu rescue.[17]

The animals in this situation were considered intrinsically valuable; a single individual of such endangered populations is worth the risk of saving it. But the history of Florida's manatees is also one of hard impacts from human activities on natural populations.[18] The local government is working towards the safeguarding of endangered marine populations in the region and it is pushing resources into their recovery or, at least, their preservation.[19] People are (re)acting both in accordance with their own perception of the environment and their own needs. In some cases, we find more mundane needs, in others more psychological or emotional ones.

Today, across their distribution range, manatees are seen very differently according to their location, country, and peoples' respective cultural practices. Some peoples (or individuals) follow old practices in the use

17 "Rescuers Brave Hurricane Irma's Fury to Save Manatees." Fox 13, 10 September 2017. https://www.fox13news.com/news/rescuers-brave-hurricane-irmas-fury-to-save-manatees

18 *"A record number of Florida manatees were killed by boat strikes and a near-record number of overall manatee deaths were reported in 2018: a total of 804 manatees died in Florida waters last year, close to the record 830 set in 2013, according to data from the state Fish and Wildlife Conservation Commission; boats killed 119 manatees in 2018, breaking the record of 106 set in 2016 and tied in 2017. The commission started keeping manatee mortality records in the 1970s."* Information retrieved from https://eu.tcpalm.com/story/news/local/indian-river-lagoon/health/2019/01/02/804-florida-manatee-deaths-during-2018-highest-5-years/2461825002/ (January 2019).

19 "Manatees in Peril as Toxic Red Tide Tests Florida's Resources for Rescued Animals". https://www.theguardian.com/us-news/2018/nov/19/severity-of-toxic-red-tide-tests-floridas-resources-for-rescued-manatees (December 2018).

and exploitation of resources, while others have moved towards a more conservation-oriented approach. "Nobody wants to kill a manatee," said Jaclyn Lopez, Florida director at the Center for Biological Diversity, in January 2019,[20] during a news report about the record number of 119 Florida manatees being killed by boat strikes in 2018.

Research and conservation efforts developed in West Africa indicate that people continue to hunt manatees and see them as resources to be exploited. On the other hand, environmental education and science outreach are gaining space in these matters. Historical uses, traditions, and practices may provide an understanding of continuous and current local drivers of the use and consumption of manatees. In fact, as already seen in some cases, animals are used for food, medicine, and/or products for magic/religion. A better overall understanding of the drivers of aquatic bushmeat consumption will be essential in the development of effective mitigation measures.[21]

Many Western and Westernised "human–nature" dichotomies fail to express the true complexity and ambiguity of people's attitudes concerning the natural world.[22] A deep comprehension of local and regional historical and cultural drivers is key for the development of management and conservation measures. The case of Matto, the manatee, which I explore in this book, may be able to help precisely in this issue as well as to shed light on many others. Animal monstrosities of the seas or aquatic bodies also provide good examples of contrasting worldviews and interpretations of nature.

As we will see later, for Portuguese America, the so-called marine men (*Hipupiara* or *Igpupiára*) embodied all the possibilities of the huge and scary sea monster or water devil. Some authors were not certain whether they were a true animal or rather a ghost, while others described them as dangerous creatures able to kill humans with their embrace. This creature encompassed all the hybrid or strange typologies of great aquatic beings, which are not always known by locals – particularly when rare in specific regions (assuming an actual species is being considered) or when absent from local cosmogonies and mythologies (assuming it is a fantastic being under consideration). The work of the missionary Fernão Cardim,[23] for instance, mentions that the local peoples were truly terrified by this creature, to the extent that they feared they might die just from the thought of it, with no

20 https://eu.tcpalm.com/story/news/local/indian-river-lagoon/health/2019/01/02/804-florida-manatee-deaths-during-2018-highest-5-years/2461825002/ (January 2019).

21 Cosentino & Fisher (2016).

22 Nabhan (2013), *Singing the Turtles to the Sea*, p. 126.

23 Cardim (1980) [1540?–1625], *Tratados da Terra e Gente do Brasil*.

one who saw it being spared. According to the author, marine men lived in the springs and mouths of freshwater rivers of different regions in Brazil and their physical appearance was either that of an adult man, or a female with long hair and beautiful features.

Sea monsters continually rose to the surface of the waters, or laid upon the shores, or were thrown inadvertently onto the long coasts of the American shorelines (Figure 1). In each situation, letting themselves be seen. Even so, very little was known about them – in most situations they were considered as dangerous but were not sharks – and the species was not known, nor was there any news of anything similar anywhere else in the world.[24] And all of them were worthy of interest and curiosity.

They were monsters both in the place where they were observed and when transposed to other cultural settings. In a Europe aiming at becoming increasingly erudite and scientific at the rising of the Renaissance, monsters were still monsters. And the ever-present monsters of the sea left no room for doubt that "as there are several monstrous animals of various forms on Earth, there are also several types of them in the sea, some of which are men from the waist up, called newts, other women, called sirens, who are both covered with scales, as Pliny described them."[25]

These hybrid beings – unknown and belonging both to the sea and to the land – had human and animal features alike, and could be both real and imaginary, and were often separated from those other monstrous creatures, the large beasts of nature. The first, for instance, the notorious Gândavo's monster (Figure 2), to which I will return, and the latter, the soon famous and magnificent manatee. Called *Goaragoa*[26] or *Iguaragua* in the Indigenous *Tupi* tongue, the occurrence, description, and habits of manatees prevented them from being confused with any of the frightening and unknown monsters. Several early modern authors differentiate them as they describe the aquatic fauna of the Atlantic – whether off the west coast of Africa or on American shores. The authors of this age – humanists with a more naturalistic character – were open to all sorts of monstrosities and strange possibilities of nature, and offered personal categories to classify them, at a time when the biological classification system as we know it today was far from being thought out.[27]

24 Vasconcellos (1668), *Noticias Curiosas, e Necessarias das Cousas do Brasil.*

25 Paré (1982) [1585], *On Monsters and Marvels*.

26 *"Goarágoá is the fish that the Portuguese call ox*. Sousa (1989) [1587], *Tratado descriptivo do Brasil*.

27 See, for the case of manatees, the discussion I present in Brito (2018) about the evolution of knowledge production and the natural history of these marine mammals.

Monsters, sea lions, sea horses,[28] manatees, whales, sea turtles, mermaids and tritons, flying fish and *dourados*, sawfish and sharks of many types – almost all are evident in the annals of the Iberian and European natural history, supported by empirical and natural history knowledge and local experience obtained in Africa and the Americas. These are the animals that I intend to historicise, give a face to, and, in some cases, allow them to express their own voices. Here, I will be writing about the relationship of these nonhuman animals with human beings. Humans found, perceived, knew, used, categorised, and described them – and took ownership of them – in all sorts of ways. My intent is to examine the entanglements between marine animals and humans, with the Atlantic as the medium in which both met and interacted, as an example of how historians can address the long, intricate, and often shared voyage that all creatures on Earth have undertaken. In exploring time and space – moving between the past and the future, and the North and South Atlantic worlds – and considering the many different technological, scientific, and cultural developments this encompasses, I expect to offer a new contribution to the ways humans look at the history of the oceans and the ways we might, eventually, rethink their future.

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We live in the age of humans. We live in a new epoch on Earth, defined as the Anthropocene, in which human actions and their impacts significantly alter the planet. Although various debates remain ongoing in different spheres of the scientific world, the general existence of the Anthropocene is relatively accepted given that we live today on a truly global scale, in an era of environmental manipulation with effects on planetary systems equal or greater to those of geological phenomena.[29] The human species has, in this sense, become a geological agent, given the drastic transformation of relationships and interdependencies between people and the rest of the natural world.[30]

The Anthropocene, as a geological epoch, is typically delimited from the mid-20th century, with the Great Acceleration (economic and technoscientific) being the point of reference. Several disciplines have, however,

28 The so-called sea horses were hippos, referred to since the 15th century as the latin *hippopotamus*, and in local tongues as the *guzulico* or *cavallo marino*, those land mammals with habits of sea animals that were as large as an ox and as dangerous as a beast.

29 Steffen et al. (2011), *The Anthropocene: Conceptual and Historical Perspectives*; Ruddiman (2013), *The Anthropocene*.

30 Castree (2014), *The Anthropocene and the Environmental Humanities*; Castree (2020), *Speaking for the Earth and Humans in the "Age of Consequences"*.

been debating both the concept and its periodisation and, for example, the *early Anthropocene* concept pinpoints the Neolithic Revolution as its origin. European expansions from the 15th century onwards, which instituted global trade and the circulation of people, goods, and natural elements, are also considered as preconditions for the Anthropocene.[31] In these historical contexts, human action was markedly predatory, causing contamination and destruction of ecosystems, overexploitation of resources, and extinction of species, simplification of habitats and natural systems, as well as marked ecological, social, and cultural discontinuities. The massive changes that have taken place in marine ecosystems are the result of a continuous and excessive exploitation of resources by humanity over millennia. The negative impacts of anthropogenic action on the marine environment are visible, mainly due to the intensification of human presence in coastal areas across the globe.

Peoples – their constructed ideas and ideologies, their political structures and hierarchies, their understanding of the world – were quite distinct from one another at the dawn of the 15th century. Indigenous and traditional worldviews were markedly different from the European one, no better no worse, simply different,[32] as were the respective conceptual architectures and mental structures used to conceive of the natural world and understand the multiple possibilities for using (the rest of) nature and its resources for the sole or shared benefit of people. Once permanently in contact, from the beginning of the 16th century onwards, they were turned into the all-encompassing "old plus new world" landscapes of conflict, of appropriation, and of exacerbated destruction. And given that culture and nature are equal sides of a single coin, environments, ecosystems, natural populations, individuals of fauna and flora, became biomes or biospheres of permanent contestation as well. Even today, differences persist, as do clashes in living in and understanding the natural–human world. Should we rather see these ecological niches and interrelated human cultures as *anthromes* or anthropocentric biomes?[33]

Among the many Indigenous societies scattered around our Earth, it is clear that the ways of living well together with the planet are based on reverence, responsibility, reciprocity, respect, and good relations between people and the rest of the natural world, as Sepie[34] puts it. Today, the West, with its own ways and particularities, is only a small piece of this huge world. A world full

31 Mentz (2020).

32 Mann (2011), *1491*; Krech III (1999), *The Ecological Indian*.

33 Fuentes & Baynes-Rock (2017), *Anthropogenic Landscapes, Human Action and the Process of Co-Construction with other Species*, pp. 1–3.

34 Sepie (2017), *More than Stories, More than Myths*.

of different perspectives and ways of facing what surrounds human beings – other people, other environments, the Other, and the Radically Other. In fact, many of the Earth's ecosystems and most of its untouched biomes are under the eyes, uses, managements, and ways of living of Indigenous peoples. Knowing how to see, to understand, to accept, and to use in harmony with the resources that the Earth offers, in the form of shared use, happens less in the Westernised world, because living in larger concrete cities sets most of us increasingly apart from the natural truth – that of mutual dependency. We must recognise that, "at every level, humans are entangled with other species. We become ourselves via biological amalgamations; we are the result of melding bodies and genetic legacies. However, even at this level, humans are never alone; our biological selves are multispecies communities."[35]

Most of us seem to exist so far removed from the traditional and Indigenous worlds in terms of the most common ways of living, in everyday practices, and in the ways we conceive the world. We are so ahead and yet so far behind what is lived and conceived of in other societies – in those places where feet and hands are connected to the soil and eyes and hearts to the water. Should this economic and technological development – the true Capitalocene[36] – be stopped, or should it be put to a different purpose? Can people learn, not just from history, but from one another? We can surely listen more and encompass more.

We can see a certain notion of spiralised time in some traditional non-Westernised societies. I first encountered this concept and these ideas in a lecture by my Brazilian colleague Giovani José da Silva, at the Centre for the Humanities of NOVA University of Lisbon in early 2019. Time in a spiral appears as a continuum between the past, the present, and the future, reflecting the consequences of human acts in what is to come and mirroring, at each moment, what has been done, learned, and transmitted by previous generations. Some tribes in Brazil today refer to a temporal connection between what exists and what happens now and what has already happened (some of us would say between the present and the past), in a way that several moments in time might touch one another. This understanding of time is reflected in the concept of knowledge about nature, and even of existence; moments and events touch one another. This belief conceives time not in a continuous or circular way, but in a spiral, it being possible to see and return to each moment and remember or perceive each moment of interaction. Thus, the present can go back to the past and the past is reflected in the present. What is done at one time influences

35 Fuentes & Baynes-Rock (2017).

36 Haraway (2015), *Anthropocene, Capitalocene, Plantationcene, Chthulucene: Making Kin*.

what happens at another time. There is time, space, and various relationships that establish layers of reciprocity that need to be understood and preserved.

Time(s), cycles, spirals.

These are life cycles conceived of in a temporal format that goes beyond our place in space. These are reciprocities that are manifested between layers of people living (in) different times and, in turn, they are transformed into respect. Of course, time on Earth has its own thickness, and different layers, which go beyond what is possible to readily quantify using human mechanisms and instruments. Time assigns a moment that is specific to each person and to each society – in some cases it runs at a brisk pace and in others it is slower and denser. Today, as the world is pressing pause amidst a pandemic, the simple notion of time (days, weeks, months) runs differently. It is important to materialise time's measures because times touch each other, go back and forth; histories may repeat themselves, narratives may be entangled; and, whether we must learn from them or not, we can at least (re) view ways of adaptation to events and address the consequences of certain actions. In these last couple of years, I listened to and read more about non-linear perceptions of time. As Duara puts it, "historical processes are not fundamentally tunneled, channeled or directed by national, civilizational, or even societal boundaries but are circulatory and global, much like oceanic currents."[37] His circulatory history deals with a non-traditional flow of time, acting as a movement or distribution from place to place, comparable with the ocean currents, which are not channelled but instead develop in interaction with and under the influence of many factors. Species, events, and moments flow on, shaping and being shaped, and continually influencing each other.[38] This seems to be relevant to how humans and some other animals' relationships are established and maintained, in an interlocked web of critters, time, and space, as if a shared memory of kinship might exist between all elements of "ecocultural" systems. In considering our current days and the ways things are, we may want to adapt by perceiving such a circularity and continuously looking back into the future.

Different ways of conceptualising the world are also reflected in the ways of theorising one's own surroundings – families, relatives, kin – and in the paths and processes individuals and peoples use to transmit to future

37 Duara (2021), *Oceans as the Paradigm of History*, pp. 2–3. See also the 2021 lecture "*When is the Anthropocene? The Multiple Lifetimes of Climate and Nature Emergency*" by Helge Jordheim in the Oslo School for Environmental Humanities.https://www.hf.uio.no/english/research/strategic-research-areas/oseh/

38 Duara (2021), pp. 4–5.

generations their ancestral stories or construct their history. While looking at the mainstream currents of natural history and philosophy – which I will go into shortly – some people from some of these traditional or Indigenous groups or cultures say it was not the Europeans who taught or catechised the Indigenous peoples since their arrival in the Americas. On the contrary, it is the native genetic, biological, and cultural reality that is embodied in European treaties on tropical natural history, and, consequently, mainstream science and practices were themselves converted and colonised by Indigenous knowledge.[39]

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This book will contribute to new currents, turns, and twists in the Environmental Humanities, with an inter- and multidisciplinary approach that uses several methodological approaches to respond to the current ecological crisis from plural perspectives.[40] Here, I use these approaches not quite as a scientific discipline, but more as a way of thinking through worldviews and different ways of expressing interactions between humans and the nonhuman aquatic worlds – both from within and outside academia. I am also following the so-called Oceanic Turn[41] as well as the Animal Turn.[42] In this way, I am locating my investigation at the crossroads between animal studies and marine environmental history, both emerging fields of research, and in mainstream research on oceans and animals' agencies. The focus is on the animals of the waters (either individuals or taxonomic groups) and the relationships historically established between various peoples and other species surrounding them. Attention is given to the marine environment and large marine or aquatic animals' agencies, considering and discussing the

39 Lecture by the Brazilian professor and scholar Gioavani José da Silva (CHAM – Center for the Humanities, 2019).

40 The Environmental Humanities is a new field of investigation that involves studying and conceptualising new ways of dealing with the urgent challenges of current environmental crises, through disciplinary and methodological integration. See Rose et al. (2012), *Thinking Through the Environment, Unsettling the Humanities*; Castree (2014), *The Anthropocene and the Environmental Humanities*; Kitch (2017), *How Can Humanities Interventions Promote Progress in the Environmental Sciences?*; Holm & Brennan (2018), *Humanities for the Environment 2018 Report*; Mentz (2020), *Ocean*; Merchant (2020), *The Anthropocene & the Humanities*; Castree (2021), *Environmental Humanities*; Environmental Humanities is a wide and flexible field that needs to be expanded further. Jørgensen (2022), *Isn't All Environmental Humanities 'Environmental Humanities in Practice'?*.

41 DeLoughrey (2017), *The Submarine Futures of the Anthropocene*.

42 Nance (2015), (Ed.) *The Historical Animal*; Colby (2015), *Change in Black and White: Killer Whale Bodies and the New Pacific Northwest.*

fact that aquatic animals' distribution and natural behaviours occur without human control but do affect peoples' daily lives and decision-making.

I expect to address the close interconnection of past human actions and marine environments, of the continuous heavy exploitation of marine resources, with current trends towards decreasing species populations and diversity, of extirpations and extinctions, and the disequilibrium forced upon marine ecosystems. In fact, all the species that are discussed here are currently severely endangered, their geographical distribution is highly constricted, and their habitats are suffering from serious damage and fragmentation. The concept of a pre-Anthropocene or of an early Anthropocene[43] will also be discussed, placing the book within the framework of the most recent scholarly thinking in this field.

More than simply revisiting these themes, this book aims to present a novel approach by using understudied (marine) animals and ecosystems as examples, for a period and place also less studied in the fields of environmental humanities, environmental history, and animal history. Moreover, it aims to give some animals their well-deserved voices and fixes their places in history. It also employs a strong cross-cultural approach to showcase differences and similarities in peoples' use of nature and partnerships with animals.

This book is also a journey. Not just in terms of a voyage taken into the past of marine environments, but also one taken into the integration of different methodologies in the Humanities. I am presenting interdisciplinary and cross-cultural research to address the past of relationships between humans and nonhumans. And, as mentioned above, I will try to emphasise the interactions of individuals and peoples with the oceans during the early modern period in the Americas and Africa.

These subjects and actors – aquatic animals, peoples, and the Atlantic waters – have rarely been considered together. Here, different worldviews and concepts of nature will be addressed in a cross-cultural approach in a place and time where both indigeneity and imperial motivations played an active role in shaping the human forces that acted upon aquatic environments and their animals. Severe long-term anthropogenic impacts deeply changed habitats and natural populations, and altered seascapes and ways of living to the point where several aquatic species are now facing extinction.

43 See Crutzen & Stoermer (2000), *The "Anthropocene"*; Steffen et al. (2011), *The Anthropocene: Conceptual and Historical Perspectives*; Ruddiman (2013), *The Anthropocene*; Lewis & Maslin (2015), *Defining the Anthropocene*; Bonneuil (2015), *The Geological Turn: Narratives of the Anthropocene*; Mentz (2020); Merchant (2020). See also the "Anthropocene Project" by the Rachel Carson Center for Environment and Society. https://www.carsoncenter.uni-muenchen.de/outreach/past-projects/anthropocene/index.html

By looking into the past, I will try to transcend my own cultural roots and attempt to perceive the world through the eyes of others. These "others" include both other peoples and nonhumans. Transcending binaries and breaking with historiographic traditions in which only the winners' stories are written based on the sources they have made available,[44] will be my way of contributing to cross-cultural more-than-human historical narratives.

Most of stories told in this book are set in colonial Brazil, Central America, and the Caribbean – an additional consideration of West Africa allows comparisons and an approach to an Atlantic globality. Examples spanning from the mid-16th century to the late-18th century are available mostly from Portuguese and Spanish historical sources. My human actors are the Europeans, in Europe and elsewhere, and local or Indigenous societies in the places early modern encounters and clashes took place. I direct my attention to multiple agencies, directions of influence, and modes of socio-cultural relationships between humans and between humans and the nonhuman world. Furthermore, I look at the contact zones between Indigenous societies and colonising societies, and the consequent mutual and asymmetric effects of the different types of "ecocultural" interactions that have been established.

Throughout the book, I use the terms Native Americans, Indigenous, Amerindians, and native or local groups or societies, many times interchangeably, to denominate a myriad of origin peoples from the Americas whom Iberians contacted in their overseas colonisation. Even if the terms I have chosen to use were constructed based upon the views of colonisers and in situations of control, appropriation, and subjugation, I am not using them as general, simplifying, and detrimental words and concepts.[45] Moreover, I am aware that these denominations do not reflect the totality of cultural indigenous diversity and local realities, neither past nor present. Whenever I have sufficient information from the historical sources, I have identified original nations, such as the *Tremembé* or the *Tupi*-speaking groups for coastal Brazil, the *Taíno* for the Caribbean, or the *Calusa* for North American continental regions, to name some examples. In any case – either using names for individual groups, or names for social categories to classify those groups – I am aware how easy it is to run into terminological quicksand. So, as Charles Mann correctly states, I must affirm that I use these terms as

44 Bauer & Norton (2017), *Introduction: Entangled Trajectories, Indigenous and European Histories*.

45 I am following the lead by many other scholars, such as Bauer & Norton (2017) and the Portuguese historian Pedro Cardim and all the colleagues he cites in one of his recent works. See Cardim (2018), *Os Indígenas e as Justiças no Mundo Ibero-Americano*, pp. 29–33.

cultural and geographical categories, not racial ones.[46] I also try to follow his rule of thumb and use the names these groups would know and identify with – which, again, is not an easy task for a European scholar relying upon European sources. I am trying to keep up with a number of current debates that address these historical questions (including from an anthropological viewpoint) and keep abreast of recent Indigenous historiographies. I use these words also in the context of learning and hearing from different colleagues, such as Juciene Ricarte Apolinário, a Brazilian scholar working directly on the history of Indigenous societies, and from the Indigenous scholar Ailton Krenak, as they refer, for instance, to the *Potiguara* or the *Krenak* societies.[47]

European sources may open a window to the past of Indigenous and traditional societies, which I am focusing on, because the aquatic animals were elements of their local ecologies and cosmogonies. From time to time, I need to go deeper into European contexts where Western globalised views of the world, scientific concepts, and the sketches of disciplines started to emerge during the early modern age. I am building my discourse based on European productions and that will bias my words and my interpretations of local realities. However, a true effort was made – and I will continue to pursue it – to give voice to silenced agencies. In my future investigations and writings this must, surely, include an ever-greater consideration of the work of Indigenous and non-European scholars, and the recognition of the importance of the Western Hemisphere and the South Atlantic, besides the Eastern Hemisphere and the North Atlantic, to the construction of a global history of the world.

So, as I move across the Atlantic realm, West Africa also has its say; even more importantly, because manatees occur off the shores of both the Eastern and Western Atlantic and comparisons are inevitable. Africa contributed to the construction of the early modern Atlantic, even more than the other way around; its social and cultural influence is clear across the American continent, as it is in the displacement of African ecologies, cosmogonies, and relationships with nature. The place of Africans in their home continent and of enslaved Africans displaced elsewhere in the Atlantic during the early modern period, in a nexus with other animals and ecosystems, is not yet fully understood and I will just barely scratch that surface – there is a

46 Mann (2011), *1491*, Appendix A.

47 When I write about what I have learnt from my Brazilian colleagues, it is my own understanding of their words that I am presenting, and any error or misinterpretation is solely my responsibility.

full narrative to be written regarding these peoples' entanglements with their home and displaced environments.

General and natural histories, letters and accounts, maps, and prints, all include some (or several) aspects of the tropical fauna and flora of this part of the world. These sources document natural novelties from the seas and aquatic bodies were frequently regarded as monstrous, because Europeans were seeing them for the first time, even though they were often very familiar to Indigenous peoples. Marine ecosystems and animals admittedly comprise a smaller portion of the information in these works, as most of them are dedicated to trees, fruits, and plants, or to terrestrial animals, or even dedicated at their core to many different aspects of foreign ways of living and distinct biogeographic regions. But still these marine and aquatic animals represent an important part of this. Both descriptions and illustrations of many different animals are supplied, ranging from the creatures deemed useful and valuable to those feared or odd-looking. Some of these will be discussed in detail in the various chapters of the book.

This book also reflects a personal aspiration. As an environmental historian I expect to achieve this by using a type of interdisciplinary, trans-chronological, cross-cultural investigation. When I consider my research, my readings, my experience with and comprehension of certain marine ecosystems, and the world as a whole system, I see that my own path and the stories of these animals and monsters are bound together. I aim to continuously learn from past human societies and environments, and from nature and animals' agencies, to investigate sustainable and ethical ways for humans and animals to live together. I choose moments in the past that help me to understand my present context and attitudes. This is my current way of carrying on "saving the whales," and the sea turtles, and the manatees and the sharks, and all endangered aquatic fauna – by pushing forward the limits of understanding and getting to know the ocean; by offering historical narratives and building empathy.

This is my personal and very modest way of saving our Earth. I came up with the idea of this book back in 2018, but I was writing a major part of it between March 2020 and March 2021. During this exact year, the world was facing the Covid-19 pandemic; it encompassed the so-called Great Pause of 2020, when most of the world stopped for many weeks and the very dark weeks of early 2021 in Portugal that took a heavy toll on our country's population and on everyone's minds, on the national health system, and our common ways of living. We were in total lockdown once more, restricted in our movements and daily activities, and fighting for our spirits to be free. I felt I had something to say, even if it was addressing sea monsters and

aquatic animals and humans in the past. It made sense to me because we are all interconnected in space but also in time.

I know already that my current views are plural and my perceptions – like those of any *Homo sapiens sapiens* today – are varied and in constant movement. Likewise, the views of people who lived in biogeographically and culturally different Atlantic zones between the 15th to the 17th centuries were naturally different and far from static. Similarly, their understandings of the world – which world was that? – encompassed an incredible multiplicity. This multiplicity reflected, among much else, the variety and richness of adaptations of societies and human groups – as a species dependent on the planet's natural resources and subject to its ecosystematic, environmental, and climatic conditions.

I also now know that I do not have the courage to say that this will be a finished work. I am trying to historicise nonhumans as beings that changed over time and space, trying to find new evidence of nonhuman life and human interactions with it in anthropocentric archives and sources, while most of us have been trained to edit animals out of our analysis.[48] The information from the written and iconographic sources that I have compiled so far, and my interpretation of these, allows the writing of my own narrative about these histories or, at least, a part of them. I would need many lives, many different eyes and viewpoints, and greater expertise in multiple scientific areas, to unravel and relate the profound entanglements of peoples and animals living along those early modern shores of the Atlantic.

This book may also turn out to be my small contribution to the intricate process that has been, and still is, marine environmental management and conservation. Peoples and aquatic populations, or individuals of the different species that inhabit Earth are, for better or worse, interconnected and interdependent. Each and every one of us – humans and other animals – have our own agency. And all need to be addressed and taken into consideration, not as opposite poles of a spectrum, but rather as a web of elements within a common and integrated "human–nature" system.

48 Nance (2015), *Introduction*.

▲ Figure 1 – A representation of animals and monsters from the land (right) and the sea and shores (left), including, among others, a manatee, seals, and a shark. In the background we can see Amerindians spearing and roasting an animal (far right) and a sailing boat with people onboard pulling something from the water (far left). *Poisons, etc. des Indes Occidentales* by Hooghe (1710). © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/266mrf).

◀ Figure 2 – The original title of this image in Portuguese is "*Do monstro marinho que se maton na capitania de Sam Vicente no anno de 1564.*" It is the sea monster, found and killed in São Vicente by a European, off colonial Brazilian shores (today the shores of São Paulo, Brazil), in Pêro de Magalhães Gândavo's work *História da Província de Santa Cruz* (1576). © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/w7hvg3).

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1. The case of Matto, the manatee

Abstract: The so-called magnificent manatee lived in the Guainabo Lagoon in 16th-century Hispaniola. Descriptions offer insights into how different societies reacted and dealt with this aquatic animal. Matto was captured by the Cacique Caramatexi, who nourished and kept it for 26 years, during which it was as friendly as any other pet and held in high esteem. I will reconstruct a chronology of this story, trying to understand how it has been influenced by translation and copying, and interest in exotic natural themes. I will use it as an example of interactions and entanglements between humans and aquatic animals, before delving into origin myths and aquatic deities. I am de-centring history focusing on interactions while giving Matto agency.

Keywords: aquatic animals; marine mammal; indigenous views; feelings and attitudes; encounters and clashes; human and nature entanglements

Since we have come to mention this part of the valley, which is called Atiei, we must make a digression on an unprecedented portent of a sea fish. The chief of this region was fond of fishing, and he is called Caramatex. A dog fish has fallen on his lines, the huge kind of fish that the indigenous call manatee…The chief cared for the young fish at his home for a few days with country bread, the one they make of manioc and millet, and also with other roots that men eat.[1]

Chief Caramatexi and members of his family, of the powerful Taíno Native American group, lived by the Guainabo lagoon on the island of Hispaniola by the time Spaniards get to that part of the world.[2] They shared their daily life, their existence as a group, and their constructed story with all the

1 Mártir (1989) [1515–1516], *Decadas del Nuevo Mundo*, pp. 225–226.

2 Gómara (1605) [1511–1564], *Histoire Generalle des Indes Occidentales, et Terres Neuves qui Iusques à Presente ont Esté Descouvertes*; Tejo (2019), *History and Conservation Status of the Antillean Manatee*.

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surrounding entities and natural realities. This included, at least for some years, a manatee. The manatee was a wild, but not feral, animal; more than a pet, it was a family member, and the family gave this individual being a name.

Matto! Matto!

They would call out this name from the shores of the tropical lagoon they also called home and the manatee would approach the humans.

If true, their pet and friend was the most improbable animal. A large mammal of the waters, a manatee captured by the chief as a young calf and then fed and nurtured by the whole family group. Fed herbs and bread by hand and summoned by name and the sounds of musical instruments, Matto (or Mavali, less frequently used)[3] would come to its human family and interact with them in a rather docile manner. The manatee – possibly a female – was tame and, it is said, lived in that enclosure for 26 years, until the moment it escaped to the open water when a high tide broke the lagoon to the river, allowing the manatee to swim away to its own kin.

> ...the king of that island of Cuba had a certain whale or great sea fish, called Manatee...Having found her by chance, still small and young, the king's fishermen offered him this fish as something rare. The king ordered [them] to build a wide sea-water lake, embedded by the rocky coast, and put there that fish. Every day the king himself would feed him the native bread they call Yucca, and feed her until she became a huge monster, as we said above. And whenever the king fed her, he called her to himself from the farthest part of the lake by the native word *Machatem* or *Manatem*, which in the American language sounds noble. Whenever she heard the king's voice, calling her by her name, she immediately swam towards him and devoured the bread he threw into the water. Later this fish became so docile, domesticated, and human that she played with the king when he bathed or swam with his nobles in that lake. Besides, she let the king himself and some noblemen sit on her back and, at the blow of an arrow, she carried them, swimming around the lake.[4]

Francisco Lopéz de Gómara, a 16th-century historian working in Seville, who described the expedition by Hernán Cortés, was the first to tell the story of Matto the magnificent manatee, when he referred to the fish of

3 Carvalho (1765), *Diccionario Portuguez das Plantas, Arbustos, Matas, Arvores, Animaes Quadrupedes*, p. 356.

4 Philoponus (1621), *Nova Typis Transacta Navigatio*.

Hispaniola Island.[5] He was followed by several Europeans authors who retold it over the centuries[6] up to this day.[7]

As in many other situations, this is a story told by different mouths and tongues, written by many hands and read by many eyes. As with other mighty monsters from the aquatic realm, Matto – "a fish that does exist in the waters of our hemisphere"[8] – had five minutes of fame in the annals of early modern natural history and philosophy. And, if we are to believe the tale most authors say to be true, the manatee also had a long-lived experience of interacting with humans. However, not everyone believed in such a story. The Dutch humanist and grand merchant Joahnnes Laet, for example, was well-acquainted with news from overseas and the Americas and translated the work of López de Gómara; but he excluded from his description the history of Matto, the manatee, probably because he did not consider it to be reliable.[9] More recently, the Portuguese scholar Marília Lopes[10] also used this same example (using the Philoponus image, see Figure 4) to illustrate the concept of fantasy associated with European discoveries and explorations of the Americas' natural world in the early modern times. "Animals, fish, birds, trees, plants and fruits never seen before" are considered great novelties. Sometimes, fantastic wonders were also expressed in graphical form – "artists give way to strangeness and novelty by drawing, for example, a fish, or an amphibian, of enormous dimensions capable of carrying five men on its back."[11]

In fact, much of the information about manatees and other observed aquatic animals was only partially passed to European circles of modern natural history and philosophy. This may have been the choice of a translator or author, or have arisen from a lack of access to relevant sources or apparent

5 Gómara (1605) [1511–1564], *Histoire Generalle des Indes Occidentales*.

6 Mutafarrika (1730), *Historia de la Indias*. This work features a description of the manatee as a creature whose body is like a blown-up hide and whose head is like the head of an ox with pendulous dewlaps and from whose shoulders come two round feet; it suckles its young on the shore of the sea. Ninety per cent of the information in this book is from López de Gómara's Historia de las Indias, and was probably translated and adapted by Emir Mehmet ibn Emir Hasan el-Suudi [?] in 1580. This is the first illustrated book ever to be produced on an Ottoman printing press (Goodrich, T.D. Sixteenth Century Ottoman Americana, Ph.D. diss., 1968).

7 Durand (1950), *Ocaso de Sirenas. Manaties en el siglo XVI*.

8 Gómara, (p. 41) refers many times to species that are tropical and do not occur in European waters, and tries to make comparisons, when possible, with what is known.

9 Barrera-Osorio (2012), *Translating Facts: From Stories to Observations in the Work of Seventeenth-Century Dutch Translators of Spanish Books*, pp. 317–332.

10 Lopes (1998), *Coisas Maravilhosas e Até Agora Nunca Vistas: Para Uma Iconografia dos Descobrimentos*.

11 Lopes (1998).

incongruities or fantastical elements in the descriptions furnished by the sources, making them seem less credible.[12] Thus, much knowledge remained hidden, locked in hand-written manuscripts and letters, published only in vernacular tongues, or lost to time and natural disasters.

Many authors did, however, consider Matto's story to be worth telling, even if deemed incredible. I believe it is possible that a manatee lived in those conditions and showed the behaviours described, being petted and fed by people.[13] There is nothing in their presently known ecology or behaviour that suggests otherwise. Rescued manatees today survive easily in captivity (Figures 5 and 6), are handled by humans for many different purposes and in multiple situations, and may even live a lifetime in such conditions. What we also know from historic documentary sources is that Matto, the noble manatee, was captured as a baby and kept for many years in an enclosure. During that time, "it would go out of the Water to feed in the house, would play with the boys, let them get upon him, was pleased with music, carried Men over the pool, and took up ten at a Time, without any difficulty."[14] The connection between the manatee and the humans was established and somewhat strong, until the moment of a drastic change.

> Once, a Spanish boy, for his own enjoyment, struck the fish with a non-sharp arrow. The fish was so terribly resentful of this man in Spanish robes that, from then on, whenever she saw the king next to someone dressed as a Spaniard, she did not show up at all, or did not come close, even if the king called her to eat.[15]

The manatee, once friendly and meek, would thus no longer approach familiar people and lurk out of sight if she sensed danger. Very soon, nature itself would offer an escape back to her natural habitat, away from the domesticated human world. In an exceptional flood of the River Hatibonico, one of Hispaniola's main rivers, resulting from great winds and a huge

12 Regardless of the reason, much remained untold and unknown about the aquatic tropical fauna of the Americas and only recently some of this information has begun to be recovered by the most recent historiography of natural history or environmental history (see Brito (2018), *Connected Margins and Disconnected Knowledge: Exotic Marine Mammals in the Making of Early Modern European Natural History*).

13 An example of one of these situations is briefly described in Bullen (1909), *Creatures of the Sea*, p. 75.

14 Herrera y Tordesillas (1726), *Historia General de los Hechos de los Castellanos en las Islas i Terra Firme del Mar Océano*.

15 Philoponus (1621), *Nova Typis Transacta Navigatio*.

storm,[16] its waters entered the Lake Guainabo where Matto lived and probably opened an access to the river, allowing Matto to return to the sea from whence, according to the group, she had come. Matto was greatly missed, leaving Chief Caramatexi and everyone in his family very sad.[17]

In this circular story, beginning and ending at sea, we find a little bit of everything we intend to deal with. We find the power of mankind over nature and its environment; the chief of the tribe dominates and controls the animal and its new habitat for his own enjoyment. Furthermore, we find the power of the European over the Indigenous – the settlers who handle, exploit, and use everything according to their needs, people and animals included, without due consideration for what previously existed. Simultaneously, we observe Matto's reaction to an aggressor, in this case the European. Here, we may see a repudiation from a being belonging to that place before the foreigner's abuse. A poetic suggestion arises, turning Matto into a symbol for the history of an empire: "[it is] the better equipped witness who, on behalf of marine fauna, saw and lived [through] these events crucial to humanity: the discovery and conquest of America."[18]

In the cited work by Philoponus,[19] there is an illustration of the manatee of Gómara (Figure 4) and it is mentioned that the island's king had a large fish, or whale, called Manatem, which had an ox's head, small eyes, and was covered with leather and had few hairs. In the image, the imperialist power over tropical nature and its inhabitants is evident, as well as the duality usually present in people's relationship with the animals in their surroundings. In this illustration, we see Matto in the foreground transporting people on the lake. Yet, in the background we see another boat with two Indian hunters or fishermen hunting a turtle and another large sea animal – which we cannot clearly see; it may be a fish, cetacean, or even another manatee. On the right bank, men in European outfits observe. Meanwhile, another figure (possibly a young man) wields a bow and arrow in the direction of Matto; next to him is an Indian man, also armed with bow and arrow, but he is not shooting at Matto.

16 *"El Attibunico, uno de los cuatro ríos que dividen la isla por igual, se lo llevó al mar en un aluvión inaudito, acompañado de horrorosos vendavales, a los que llos llaman huracanes. El Attibunico salió de tal manera, que llenó todo el valle y se mezcló en todos los lagos; siguiendo, pues la corriente del Attibunico el buen matum, el chistoso y sociable, cogió el antiguo cauce y las aguas natales, sin que se le haya vuelto a ver"*, Mártir (1989) [1515–1516], *Décadas del Nuevo Mundo*, pp. 225–226.

17 Gómara (2008), *Historia General de las Indias*.

18 Durand (1950), *Ocaso de Sirenas. Manaties en el Siglo XVI*, pp. 40–41.

19 Philoponus (1621), *Nova Typis Transacta Navigatio*, pp. 59–60.

Besides the representation of the different types of people, with their clothes, postures, and cultures, which Matto observed, the images allow us to identify the level of physical and emotional or spiritual attachment of the people to the animal. As in other cases throughout history and in different cultures, where people ride dolphins, or humans and cetaceans cooperate to get seafood, there is an intimate and close connection between the "knights of the manatee" and the animal. For that moment, manatee and boys "overcome the divide separating human from animal."[20] While this representation can signify a complete control of the tamed animal and nature, it may as well be reconceptualised as "the union between an animal living in the sea and an earthbound human being, between nature and culture, between the sacred and the profane."[21]

In my current view, where Matto is a pet, the animal undoubtedly plays the role of a symbolic element of the past of a natural ecosystem and the unfolding of historic links between people and animals. The case of Matto represents a moment in which the contradictory ways in which humans could see marine creatures comes to the fore. It was a paradoxical entanglement of aesthetic and emotional appreciation with utilitarian and commercial use. This early modern colonial moment marked the start of the commercialisation and commodification of these and other aquatic resources. Thus, it is possible to interpret Matto's return to the natural habitat as an overlap of the forces of nature over human life and human agencies. Nature ultimately commands the lives of its various animals, plants, and environments and, consequently, people become dependent upon and indebted to nature itself.

In the understandings of Europeans, who observed tropical aquatic animals and their relationship to different Indian tribes as sometimes being one of equality and sometimes one of superiority, the hybrid being was starting to emerge from the manatee. In several historical written descriptions, the species belongs simultaneously to the earth and water realms and is both real and metaphorical. Manatees, therefore, function as both the object and subject of study, and as agents of history they embody the agency of nature. In this case, it is the agency of the manatees and the rivers and coastal waters they inhabited on the broader "ecocultural" systems found in and around them, including on human choices and practices. The agency of an animal, a part of an ecosystem, an element of nature – which may range from the flow of a river to the fury of a hurricane. Following

20 Ritcher (2015), *Where Things Meet in the World Between Sea and Land*.
21 Ritcher (2015).

the concept that Coates[22] introduces to us, there is a non-reflective agency that emerges from the ability of an animal to produce or condition certain outcomes. In his view, which I share, the actors involved need not be rational or intelligent, only effective. Moreover, as Coates argues, if possessing will, logic, and a sense of direction are to be considered essential attributes of agency, then, animals, including manatees, also qualify as active agents.

If people are familiar with nature's rhythms, they will be able to adapt and use natural elements to their advantage. If they do not know or understand natural forces and events, there would be little option left but to submit to them. In this case, the river is the agent that takes back what it had earlier brought.

> These fish [manatees] are mostly found in some rivers, or bays of this coast [Santa Cruz, Brazil], especially where some stream or brook gets into the salt water: because they put out the snout and pasture the herbs which grow in similar parts and also eat the leaves of some trees they call mangroves, which are abundant along the same rivers. The inhabitants of the land kill them with harpoons and some also in fisheries, because they come with the flood of the tide to such places and with the ebb they return to the sea where they came from.[23]

The presence of manatees in the early modern Americas is recurrent in the work of humanists and naturalists, from the beginning of the European presence in these geographical spaces, and thereafter constant throughout the centuries. The aforementioned Matto appeared repeatedly in several works, such as *Jardín de Flores Curiosas* by Antonio de Torquemada, who, according to Durand,[24] was particularly fond of the unlikely and the unusual.

Unbelievable to some authors yet credible to others, the story of the domesticated manatee indicates that the people of that tribe saw, in the peaceful spirit of Matto, the best rules of social conduct within their group and a way of understanding broader society. Like the dolphin that transported the Greek Arion, it becomes a figure worthy of inclusion in fables and human epics.[25] It shows us how people from different cultural backgrounds interacted in various ways with the animal, confronting the Indigenous with the European, and partially assigning the latter the responsibility

22 Coates (2013), *A Story of Six Rivers: History, Culture and Ecology*, pp. 7–31.

23 Gândavo (1980) [1550–1557], *Tratado da Terra do Brasil*, cap. 8.

24 Durand (1950), *Ocaso de Sirenas. Manaties en el Siglo XVI*, p. 28, pp. 38–41.

25 Durand (1950), p. 28, pp. 38–41.

for the animal's disappearance from the apparently happy and balanced "human–animal" community in which she lived.

But much more than being a story of the romanticisation of natives and their relations with a pristine nature, it seems to effectively tell us that the domestication of natural life is rarely attained, at least totally. This human attempt at control is even more difficult with aquatic animals living in a three-dimensional environment, very different from terrestrial realities. These animals migrate, move, hide, become more elusive, change behaviours, and may even change their living area. As a result of these changes – often imposed by or in reaction to human presence – societies, which depended on certain types of animals, may thus also move according to these modifications in the structure of the natural habitats and systems. Ecosystems are complex networks that involve all dependent beings inhabiting them, as well as all connections amongst them, including cultural ones as well. It is a true web of life, which knows no barriers. Even when including humans, who historically are organised by socio-political standards, limited by nation states and all kinds of borders – physical, mental, and epistemological – imposed on them.[26]

Seen as nourishment and a medicinal resource, a religious or magical element, far beyond a friend or pet, the manatees kept their agency active throughout the entire history of their interaction with Indigenous and colonial societies. The creature's existence has been incorporated into the life of Europeans both locally and in Europe, like that of all other nonhuman elements of this tropical world, which were common in the daily lives of the Indigenous tribes of the Caribbean and South America.[27] This was done through direct contact and empirical knowledge, or via transatlantic economic or scientific communications, which brought information to Europe. The development of human relations, whether already existent or formed from the early modern era on, with the nature of this region, was not based on complete opposition or antagonism, but, on the contrary, on a close connection between people and other species.[28] In this context, a study of the relevant aquatic systems may reveal moments of protagonism by Native American peoples[29] in the Americas in pre-Columbian and modern times, as well as situations where animals themselves are the protagonists.

26 Rangarajan (2011), *Nations, Nature, and Environmental History*, pp. 27–30.

27 Braham (2018), *Song of the Sirenas: Mermaids in Latin America and the Caribbean.*

28 E.g., Cabral (2015), *Into the Bowels of Tropical Earth: Leaf-Cutting Ants and the Colonial Making of Agrarian Brazil*, pp. 104–105.

29 E.g., Almeida & Kater (2017), *As Cachoeiras como Bolsões de Histórias dos Grupos Indígenas das Terras Baixas Sul-Americanas.*

It is nevertheless clear that, in relation to Matto in particular, there is a common astonishment, since: "For a long time the whole island rejoiced in a special way, because every day there was a great crowd of natives and Christians to contemplate the portentous monster."[30] But their look was different. The people of the Caramatexi and other groups who came to see the marvellous monster had a look of admiration. The view held by Europeans was clearly different, both towards the animal and its relationship with the locals. It was also a look of surprise, but connected to the need to confirm what the stories had told – was the animal's skin that hard and resistant? This is ultimately the "fatal" blow in the so-called harmonious relationship between this manatee and humans. Paradise ends and turns into purgatory.

> But if she looked up at a Christian when she raised her head, she would dive in and stay under water; because a certain young Christian, petulant, had treated her badly, throwing a sharp pole at the tamed and domestic fish; although it did not hurt her, because of the hardness of her skin, which is warty and rough, she felt the offence, and, from that day on, if she was ever called by her acquaintances, she would first look around, with great diligence, to see if there were some clothes and manners of Christians around.[31]

This manatee encompassed within itself many meanings, possible uses and words – great, useful, ugly, rare. It was also valuable and monstrous. The manatee, not only Matto, but the biological entity, was magnificent.

Also magnificent, and often frightening and incomprehensible, were the numerous types of sea monsters that populated the geographical and imaginary realities of early modern America. We find almost everything: from hybrid beings of the aquatic environment, like marine women and men[32] – not readily identifiable as any actual species – to truly dangerous and large animals, such as river fish, alligators, sharks and rays, sea lions, and the like. Amid all this, we also find some that were simply unknown. In cases where the real animal was not easily perceived, people took refuge in the concepts of fear, culturally mediated perceptions of the rare and strange, myths, traditions, and practices. These evolved to explain the

30 Mártir (1989) [1515–1516], *Décadas del Nuevo Mundo*.

31 Mártir (1989) [1515–1516].

32 There are many descriptions of seamen and marine women in the so-called natural histories of the Portuguese America, and we will come to this later in the book. See, for instance, Cardim (1980) [1540?–1625], *Tratados da Terra e Gente do Brasil*; and Vasconcellos (1668), *Noticias Curiosas, e Necessarias das Cousas do Brasil*.

inexplicable and were often transported between different regions of the Atlantic world and then replicated, adapted, and given different meanings and contents locally. When sighting or observing the animals, sometimes only some parts were known and perceived, and the monsters were created from these parts becoming a whole.

Monstrous, in a generic way, could mean anything that was large and enormous. It was anything that created a sense of vertigo and strangeness, which undermined established visions of the world and simultaneously emphasised the fragmentary and inadequately understood aspects of that same world. In a world of categories, regardless of the human culture, monsters were true challenges to the prevailing systems of categorisation. This is also connected to the way cultures define monstrosity from within. But we must recall that monsters are equally defined from without.[33] The monstrous was always a negative category, aiming at defining the borders of humanity and warning people to keep within these limits. While the monster brings us the idea of ambiguity and unwillingness to reside in a single, fixed location, it can only do so because of our own competing social and human desire to limit ourselves to one place, accompanied with our will to escape it. It is not the geography of ambiguity that endangers us but the absence of such flexibility. Whenever someone, or some culture, insists on a solid and inflexible identity, people will simultaneously break those categories apart, learning that it is certainty that is unsustainable, not ambiguity.[34] In this sense, monsters were always human constructions, even those susceptible of association with real and known beings. Monster existed but were not real. The result of a process of creation, reconstruction, categorisation, and definition of these strange beings was almost always creatures of a hybrid and anthropomorphised character. The monsters become "ours,"[35] and, in this sense, human.

The ocean is a great setting for the monstrous. We can refer to the deep and pelagic waters of the open sea, far from shore, and where we see nothing but the surface, and we will find those beings breaking the barrier between (salt)water and air. We can also refer to the still and murky waters of a coastal zone, such as an estuary or mangrove, which also conceal possibilities of unimaginable beings. Together, the depth and darkness allow the existence of the strangest possibilities. The ocean and waters may vomit forth all possible monsters, be they creations of a natural or divine origin – and

33 Mittman (2012), *Introduction: The Impact of Monsters and Monsters Studies*, pp. 1–14.
34 Oswald (2012), *Monstrous Gender: Geographies of Ambiguity*, pp. 344–363.
35 Mittman (2012).

these are portentous and can give rise to the recreation, discovery, and exaggeration of the natural reality of all those who observe or find them.[36] Water is a key element of life on Earth; it is the beginning of everything but also the end. As such, the oceans of the world are privileged spaces for the manifestation of the wonderful, strange, rare, and monstrous. Likewise, such adjectives also portray many of the animals and monsters of the sea because all things are possible in the ocean.

We already find marine monsteras in the first early modern reports of the "new" worlds encountered, colonised, and described by Europeans. Portuguese and other European scholars described monsters from the water in less than clear ways. Many questions arise when we try to understand their views of nature and to unveil the creatures they may be referring to. Is it an animal? Where does it occur? What are its physical characteristics? Is it perhaps an imaginary being, the so-called archetype of the marine monster? But, if we go back in time, we will see that Indigenous fishers and foreign scholars have often caught, captured, and described actual animals, and not simply the idea of them.

The general environment and its quality are described as very good by the Europeans reaching the shores of the South Atlantic, and the coastal peoples there are described as peoples from the sea – great fishermen that could capture large quantities and diversities of fish. Fish and other marine animals caught by native peoples living along the shores are abundant, large, and round as never seen before; their flesh and meat were exceptionally good and tasty, their forms and colours astonishing and quite different. Sometimes, they were comparable to fish from European latitudes, whereas at other times they were compared to somewhat analogous mammals or animals from the land – and thus became known as sea pigs, sea wolves, sea cows, and more.[37]

Many of the sources do not ultimately allow us to draw any clear conclusions; they simply open multiple possibilities. But then there is this case of the manatee.

Matto provides the perfect example of the main topic of this book – the different worldviews and perceptions of nature and animals in the early modern Atlantic world; the appropriation of information, knowledge, and experience from local ecosystems and peoples, and the expropriation of

36 See, as an example, Vasconcellos (1668), *Noticias Curiosas, e Necessarias das Cousas do Brasil*, p. 324.

37 Anonymous (1812) [1551–1552?], *Navegação de Lisboa á Ilha de S. Thomé Escrita por Hum Piloto Portuguez*.

it into the so-called civilised world of the time, the transformation and exploration of ecosystems and resources both by Europeans and Native Americans prior to European contact. A narrative of disruption, extractions, and of external constructions of natural realities can be drawn from the Matto account alone.

In the story that I am telling here, I see the possibility to corroborate the influence and impact of an individual manatee, through the direct interactions of this animal with humans. Did Matto have agency? Matto held, in its own existence, the symbolic and tangible value of human–nature relationships that hold on to the passage of time, from the ones who dealt with the animal, to the pages of those writing about it, and to the eyes of contemporary scholarship and readers. It is possible to write the biography of Matto, of the life of this manatee almost from birth to death. Matto stops manatees from being plain resources to be hunted and consumed into a cultural and social entity, placing them side by side with human historical realities. What we will find is convergence of dimensions – the animal-resource turned into the animal-symbol. An emergence of systems of *naturescultures* where the human and the nonhuman are seen together and as a jointly co-existing and co-dependent entity.

> The Manatee and Dugong, moreover, have an additional claim upon our notice, and a proof of their close connexion with the higher land intelligence, in that they have been tamed. The late lamented superintendent of the London Zoological Gardens once trained, or, rather, took over the training, of a young Manatee in Surinam, which would come to him as he waded into its pond and permit him to hold it in his knees while he gave it suck from a feeding-bottle. And there is a record of one of these strange anomalies being kept as a pet by a Spanish South American governor for twenty-six years, during which it behaved itself quite as sensibly as any exclusively land animal could have done, even to the extent of allowing the boys of the household to ride it round its lake.[38]

Friar Gaspar de Carvajal (1504–1584) was possibly the first to describe the American manatees, but Pedro Mártir de Angliera was the one to present us with what would become the well-known life history of Matto, the magnificent manatee. Carvajal's account is of the discovery of the Amazon – a voyage down the famous great river, which Captain Francisco de Orellana, by good fortune, discovered, starting at its source and coming out at the

38 Bullen (1909), *Creatures of the Sea*, p. 75.

sea, accompanied by fifty-seven men whom he took along with him, having launched forth at random upon said river, which came to be named the Orellana River.[39] He refers to the occurrence of manatees close to several villages down the river, where the Indigenous groups used their hide to produce shields and used the animals as gifts and offers in the exchanges between local and Europeans.[40] Here manatees make their debut as objects and food items, functions that Spaniards and Portuguese will continue to remember in centuries to come. They were such an important aquatic resource that I will present and discuss this aspect in the next chapter. At the same time, however, manatees were also viewed as wonders.

> When twelve days of the month of May had gone by, we arrived in the provinces belonging to Machiparo…Before we had come within two leagues of this village, we saw the villages glimmering white, and we had not proceeded far when we saw coming up the river a great many canoes, all equipped for fighting, gaily colored, and [the men] with their shield on, which are made out of the shell like skins of lizards and the hide of manatees and of tapirs, as tall as a man, because they cover them entirely.[41]

Pedro Mártir de Angliera, who was living in the Americas, heard or read about the manatee from Bartolomé de las Casas. Subsequently, he spread the story of this unheard of wonder of a sea fish to the world.[42] Soon after, Torquemada, Oviedo, Gómara, and Herrera y Tordesillas followed his trail.[43] Oviedo prefers to omit the story of Matto,[44] so I will come back to him a bit later. But, as said in the previous chapter, Gómara refers in his writings to the existence of a fish-pig and seamen that are humanlike in every respect.[45] He may have been inspired by the medieval wonder stories or by different legends, perhaps also local observations and Indigenous myths, we cannot say. But aside from where he got the knowledge of such eccentricities from the sea, it is even more interesting to realise that he was truly impressed by the American flora and fauna; and he seems to be very familiar with local nature. Gómara's work is rich with lists and

39 Heaton (1934)*, The Discovery of the Amazon According to the Account of Friar Gaspar de Carvajal*.
40 Heaton (1934), p. 190.
41 Heaton (1934), p. 190.
42 Mártir (1989) [1515–1516].
43 Durand (1950), *Ocaso de Sirenas*, pp. 31–41.
44 Durand (1950), pp. 28–29.
45 Gómara (2008) [1511–1564], *Historia General de las Indias*, Introduction.

descriptions of animals – fish, lions, tigers, pigs, buffalos, birds, reptiles, insects. And in the case of manatees as an animal group, he calls them fish, even though, based on his account, it is clear that he knows it is a mammal, due to its ability to reproduce in the same way as a cow – the manatee, he says, has breasts where its young feed.[46] He wanted to be faithful to the truth but did accept the wonders of the new world easily enough and was kind in conveying these marvellous and strange things to his readership. He combined and harmonised Oviedo's manatee description (Figure 3) with Mártir's trickery.[47] Matto gains a life of her own and has agency as she influences not her life – the manatee was in captivity for most of its life – but the lives of the Other. The lives of the "Radically Other" living by her side were changed by her existence.

> …the Cazique Carametex took one [manati], and fed it twenty-six years in a Pond, and it grew sensible and tame, and would come when call'd by the Name of Mato, which signifies Noble. It would eat whatsoever was given it by Hand, and went out of the Water to feed in the house, would play with the boys, let them get upon him, was pleas'd with musick, carry'd Men over the pool, and took up ten at a Time, without any difficulty.[48]

Described in more or less detail, depending on the different accounts, the manatee was captured alive in nets at a young age and brought to the lagoon where it lived for many years for the amusement or entertainment of the members of the local tribe. She was fed grass by hand and treated as a domesticated animal. It is said that she liked to hear people sing and, attracted by their songs or sounds, would approach her human companions and would also allow youngsters to cross the lagoon on her back. The lyrical details of Gómara's account reveal the aesthetics of the relationship.[49] The manatee had a relationship of proximity and or interdependence with the people it lived with, as much as one would have today with a home pet or domesticated farm animal. Matto was a pet for the *Cacique* and his family members. And it was as a friendly pet that she grew to full adult size.

46 Gómara (2008) [1511–1564], Introduction.
47 Durand (1950), pp. 34–35.
48 Herrera y Tordesillas (1725), *The General History of the Vast Continent and Islands of America*, pp. 278–279.
49 Durand (1950), pp. 36–37.

Over time, many scholars have questioned the veracity of this story. It is possible that Laet and Oviedo also questioned the authenticity of the story – which may be the reason this animal and related events were omitted from their accounts. What is true is that manatees can be kept and do survive for long periods (years, even) in captivity; they can be turned into captive or domesticated animals. Manatees have also been kept in captivity for short periods of time – either in human-made pools or small natural lagoons. There are examples of reintroductions in more recent times, in West Africa (in Senegal),[50] in Brazil,[51] and in the USA,[52] mostly associated with wildlife conservation programmes. But there are also early examples of public display or transportation. In the 19th century, a seventeenth-month-old manatee was captured to be placed in a zoo in London. It was captured in the Maroní River, on the border between Cayena and Surinam, and it was necessary to take a special milk cow on board to feed it. The animal made the journey well, but, approaching the British coasts, it succumbed to the cold because they had not remembered to warm the water properly. Around the same time, several specimens from the north of Brazil were on display in the Passeio Publico, in Rio de Janeiro.[53] Apparently, manatees can survive being handled and kept in small enclosures, and they can be fed by hand; in short, they allow for close interactions with humans, while in and out of their natural habitats. At least, with humans that do not hurt them.

Most of the historical interactions relating to Matto were between the animal and people from that specific Taíno group – friendly people the animal was used to living with. At a certain moment, however, a European is introduced into the plot, representing the contrast of ways of living and seeing nature, but also adding an extra point of interest and probably of truth. The Spaniard, who comes to see the manatee and attest to what the animal really is and whether what is said about it is real, is referred to by Pedro Mártir and described in detail by Gómara, who seeks to give his readers a reliable account. The soldier in question has heard about this

50 A very young manatee calf is rescued in Nigeria by members of the African Aquatic Conservation Fund, after it was caught in a fisherman's net and then kept in a well for three days (October 2015). https://africanaquaticconservation.org/

51 People feed a *peixe-boi* found in a beach of Olinda, on the Brazilian shore (2015) before setting it free in the wild. http://g1.globo.com/pernambuco/noticia/2015/08/moradores-alimentam-peixe-boi-encontrado-em-praia-de-olinda.html

52 See e.g., the news about a "Young manatee in 'cold distress' rescued outside water treatment plant," in Florida in 2016. https://www.fox13news.com/news/young-manatee-in-cold-distress-rescued-outside-water-treatment-plant

53 Goeldi (1893), *Os mammiferos do Brasil*, pp. 120–121.

giant and strange fish and wants to see it with his own eyes, reflecting the aphorism that "seeing is believing."[54]

The early modern spirit of empirical knowledge needs to be obtained by observation of the events, in this case, the natural world and the animal. Only the sight of it can guarantee its existence. The concept of experience as the mother of all scientific practices emerges from the early 16th century – the superiority of knowledge acquired from first-hand experience becomes evident – largely as a result of Iberian journeys of exploration, expansion, and conquest. From this moment on, the role of experience in the process of knowledge acquisition becomes ever more relevant in the pre-scientific worldview.[55]

> The fish wandered free in the water for twenty five years, and grew immensely. What is told of the Bayas and Arioneo dolphins, has nothing to do with the deeds of this fish. They called him Matum, which means generous or noble; and when someone of the chief's family specially of those that the fish knew he would scream at the edge of the lagoon: matum, matum, generous, generous, remembering the benefit that men had bestowed it, raising its head it would go to the one who called it, and they fed it by hand. And if someone made signs of wanting to cross the lake to the other side, lying down it would invite those that were going to cross. It is verified that, on some occasion, ten climbed on top of the monster all at once, and he passed them all without incident, with them playing and singing.
>
> But if it raised its head and saw a Christian, he dived and did not want to come out; for a certain young, smug Christian had treated it badly, throwing a sharp shaft at the tame, domesticated fish; as much as it didn't hurt it, for the hardness of its skin, that he has warty and rough, nevertheless it felt the offense, and from that day on, if acquaintances

54 Durand (1950), pp. 36–37.

55 "Experience as the mother of things" is an important concept for establishing the degree of mental transformation that slowly occurred in the minds of those involved in the early modern overseas travels. By tracking its use in Portugal and other European countries, Onésimo de Almeida confirms the idea that experience had replaced the authority of the classics as a criterion of truth, thus showing the gradual transition from knowledge based on classical authorities to one based on empirical evidence; moreover, he makes clear that what happened in Portugal and its empire constitutes a remarkable steppingstone in such a process. See Almeida (2012), *Experiência A Madre das Cousas*, p. 385; and Almeida (2009), *Science During the Portuguese Maritime Discoveries*. Other authors have discussed this for the Spanish empire, for example, in the book edited by Bleichmar, De Vos, Huffine, and Sheehan (2009).

> ever called it, first, with great diligence, it looked around if there were any dresses and the habit of the Christians.[56]

On the other hand, the outsider also represents the conflicts of European with local cultures and local nature; these societies thought differently about animals and their purpose in the world, at least in certain circumstances. Let us also not forget that the foreigner poked the manatee's body with a sword to check the hardness of its skin. This frightened the docile animal, which, from that moment onwards, would no longer approach its human friends when they called it. This episode heralded the disruption of what had previously been an apparently good co-existence. The story does not have a happy ending either. Well, possibly good for the animal, freed from its captivity, but definitely not happy for the human family it lived with. The day came when Matto – the generous and friendly manatee – was lost in the wild waters, where she had been taken from, never to be seen again.[57] Chief Caramatexi, no matter how much he wished, could not keep his manatee friend forever in the pond under his control. Nature overcame the will of the tribal chief, and the manatee returned to its natural environment.[58]

> The Attibunico, one of the four rivers that divide the island equally, took it to the sea in an unprecedented flood, accompanied by terrible gales, to which they call hurricanes. The Attibunico overflown in such way, that it filled the whole valley and mixed with all the lakes; thus following the current of the Attibunico the good matum, funny and sociable, took the old channel and native waters, never to be seen again.[59]

By the end, the manatee was back in the waters of the sea and in its natural environment, becoming a testimony of the history of marine fauna entangled in the history of humankind.

Given the multiple references to peoples from the pre-European contact period who were dependent on ocean resources and nearshore ecologies, including the maintenance of living animals for future consumption – fish, turtles –[60] I consider it possible that manatees were kept in such

56 Mártir (1989) [1515–1516].
57 Durand (1950), pp. 42–45; Mártir (1989) [1515–1516].
58 Brito (2019), *People, Manatees and the Aquatic Environment in Early Modern Americas*.
59 Mártir (1989) [1515–1516].
60 Buisseret (2010), *Jamaica in 1687*, pp. 230–242.

enclosures. Could it be that Matto was not a pet, but rather an animal being kept alive for current and continued use? Might Matto's lagoon have been a nursery?

The local appropriation of nature and resources by Native American groups, for control and continued access to important resources, was not just done for land animals but also for water animals. Domestication formed part of the process of using natural resources until recently,[61] and the use of "fishpond enclosures" to capture aquatic megafauna is a historical practice continued to this day in many parts of the world.[62] Using and transforming nearshore ecosystems – coastal lagoons, estuaries, and rivers – is part of the eco-cultural reality. Littoral or riverine societies dramatically shaped the local natural environment, and the reverse was also true. The fact that local peoples were obtaining much of their food from rivers, coastal lagoons, estuaries, and coastal waters, structured almost every aspect of their lives.[63] Agency, here, works both ways.

Was Matto, and other manatees, domesticated and farmed for consumption? There is no way of knowing, but one can surely wonder about it. Fish, lobsters and crabs, sea turtles, and manatees were dietary staples for those peoples that enjoyed access to the richness of the Caribbean Sea and North and South American shores. The existence of such bountiful subsistence resources was emphasised by European chroniclers, as was the fact that some of these wild resources were husbanded.[64] Indeed, Europeans took the local practices and adapted them to their own needs and demands, and thus animals became resources. No longer manatee-animal, manatee-food, manatee-kin, and manatee-pet, these creatures of the water became simplified and, most of the time, became manatee-commodity.

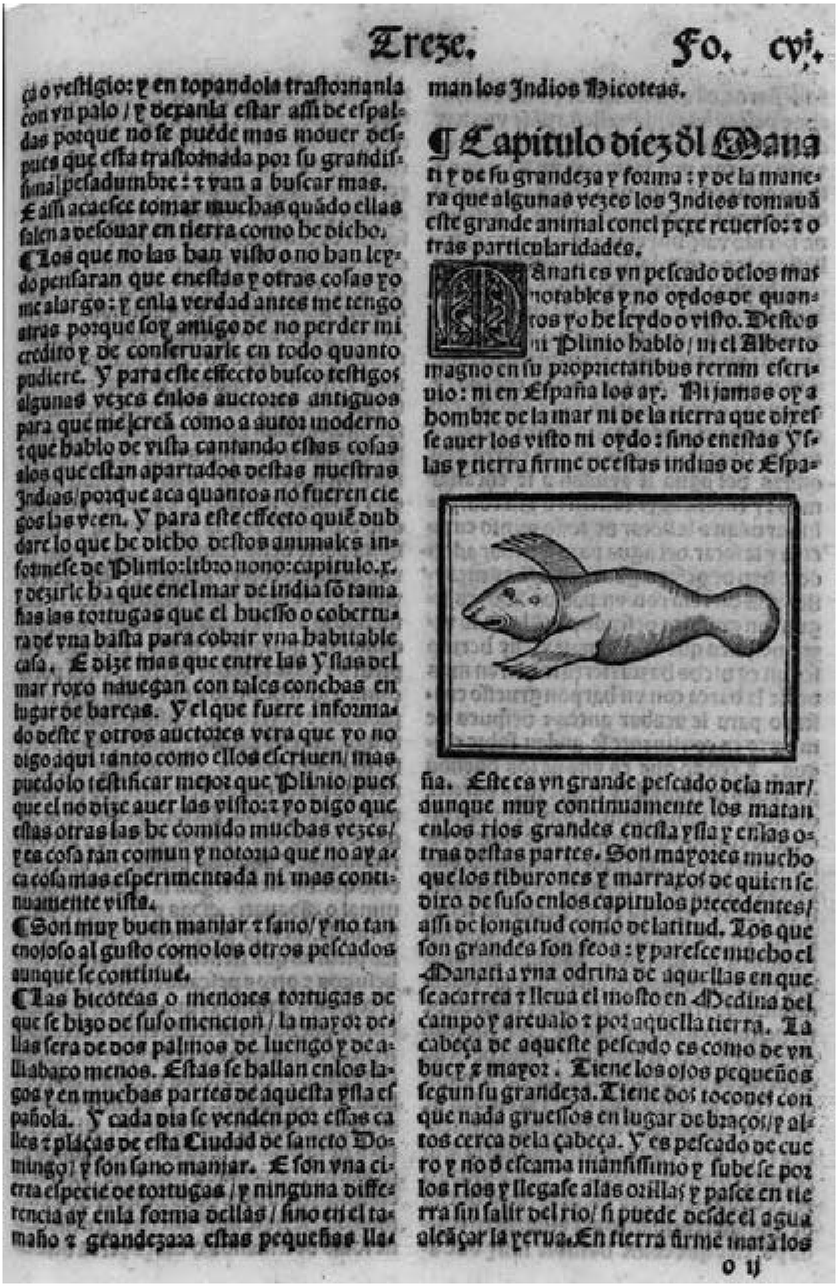
I see Matto, the mighty manatee – whether she existed or not as described – as a symbol of the common and interdependent history of the "human–nature" interactions of that period and region. The story highlights the paradoxical relationships of both species, of an aesthetic and emotional appreciation, and a utilitarian and commercial use that never achieved an easy point of balance in the past, or today in our interpretation of the past.

61 Prestes-Carneiro et al. (2021), *Waterscapes Domestication*; Siciliano (2017), *On the Potential Use of the Amazonian Manatee for Pisciculture*.

62 Abass et al. (2020), *Socio-Economic Aspect of African Manatee Hunting and Capturing*.

63 Van Hoose (2020), *Sophisticatedly Engineered "Watercourts" Stored Live Fish*.

64 Helms (1984), *The Indians of the Caribbean and the Circum-Caribbean at the End of the Fifteenth Century*, pp. 50–52.



Treze. Fo. cvi.

cio o veſtigio: y en topandola traſtornanla
con vn palo / y dexanla eſtar aſſi de eſpal-
das porque no ſe puede mas mouer deſ-
pues que eſta traſtornada por ſu grandiſ-
ſima peſadumbre: z van a buſcar mas.
E aſſi acaeſce tomar muchas quãdo ellas
ſalen a deſouar en tierra como he dicho.
¶ Los que no las han viſto o no han ley-
do penſaran que eneſtas y otras coſas yo
me alargo: y enla verdad antes me tengo
atras porque ſoy amigo de no perder mi
credito y de conſeruarle en todo quanto
pudiere. Y para eſte effecto buſco teſtigos
algunas vezes enlos auctores antiguos
para que me crea como a autor moderno
z que hablo de viſta cantando eſtas coſas
alos que eſtan apartados deſtas nueſtras
Indias / porque aca quantos no fueren cie
gos las veen. Y para eſte effecto quiẽ dub
dare lo que he dicho deſtos animales in-
formeſe de Plinio: libro nono: capitulo. x.
y dezirle ha que enel mar de India ſõ tama
ñas las tortugas que el hueſſo o cobertu-
ra de vna baſta para cobrir vna habitable
caſa. E dize mas que entre las Yſlas del
mar roxo nauegan con tales conchas en
lugar de barcas. Y el que fuere informa-
do deſte y otros auctores vera que yo no
digo aqui tanto como ellos eſcriuen / mas
puedolo teſtificar mejor que Plinio / pues
que el no dize auer las viſto: z yo digo que
eſtas otras las he comido muchas vezes /
y es coſa tan comun y notoria que no ay a-
ca coſa mas eſperimentada ni mas conti-
nuamente viſta.
¶ Son muy buen manjar z ſano / y no tan
enojoſo al guſto como los otros peſcados
aunque ſe continue.
¶ Las hicoteas o menores tortugas de
que ſe hizo de ſuſo mencion / la mayor de-
llas ſera de dos palmos de luengo y dea-
llabaxo menos. Eſtas ſe hallan enlos la-
gos y en muchas partes de aqueſta yſla eſ
pañola. Y cada dia ſe venden por eſſas ca
lles z plaças de eſta Ciudad de ſancto Do-
mingo / y ſon ſano manjar. E ſon vna ci-
erta eſpecie de tortugas / y ninguna diffe-
rencia ay enla forma dellas / ſino enel ta-
maño z grandeza a eſtas pequeñas lla-
man los Indios Hicoteas.

¶ Capitulo diez dl Mana
ti y de ſu grandeza y forma: y de la mane-
ra que algunas vezes los Indios tomauã
eſte grande animal conel pexe reuerſo: z o
tras particularidades.

Manati es vn peſcado delos mas
notables y no oydos de quan-
tos yo he leydo o viſto. Deſtos
ni Plinio habló / ni el Alberto
magno en ſu propietatibus rerum eſcri-
uio: ni en Eſpaña los ay. Ni jamas oy a
hombre de la mar ni de la tierra que dixeſ
ſe auer los viſto ni oydo: ſino eneſtas Yſ-
las y tierra firme deeſtas indias de Eſpa-
ña. Eſte es vn grande peſcado de la mar /
aunque muy continuamente los matan
enlos rios grandes eneſta yſla y enlas o-
tras deſtas partes. Son mayores mucho
que los tiburones y marraxos de quien ſe
dixo de ſuſo enlos capitulos precedentes /
aſſi de longitud como de latitud. Los que
ſon grandes ſon feos: y pareſce mucho el
Manati a vna odrina de aquellas en que
ſe acarrea z lleua el moſto en Medina del
campo y areualo z por aquella tierra. La
cabeça de aqueſte peſcado es como de vn
buey z mayor. Tiene los ojos pequeños
ſegun ſu grandeza. Tiene dos tocones con
que nada grueſſos en lugar de braços / y al-
tos cerca dela cabeça. Y es peſcado de cue
ro y no de eſcama manſiſſimo y ſube ſe por
los rios y llegaſe alas orillas y paſce en tie
rra ſin ſalir del rio / ſi puede deſde el agua
alcançar la yerua. En tierra firme matã los

o ij

▲ Figure 3 – In *Historia general y natural de las Indias* by Gonzalo Fernández de Oviedo y Valdés (1547) we find a description of the manatee and what is most probably the first depiction of the animal. © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/op2fv8).

▲ Figure 4 – Representation in Philoponus' work (1621) of Gómara's story about the manatee tamed by the Caramatexi chief that carried members of the Taíno tribe between the two banks of the lagoon. In the lagoon waters we can see other aquatic animals and a boat with two native men and, on the right bank of the lagoon, Europeans stand by watching the scene. This manatee is an anecdotal interpretation of López de Gómara's description of an animal that allowed boys and men to ride on its back. Wolfgang Kilian (1581–1662), an Augsburg printmaker, is presumed to be the artist for all the images in this book not obviously derived from the Petits Voyages and Grands Voyages of Theodor de Bry. Honorius Philoponus is a pseudonym, probably for Caspar Plautius to whom this book is dedicated. © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/to25kw).

▲ Figure 5 – Captivity enclosure for the recovery of manatees, a place where the animals are kept for several months after recovery for adaptation to the environmental conditions prior to their release into the wild. © ACERVO FMA. Published with written permission from João Carlos Gomes Borges, Fundação Mamíferos Aquáticos, Paraíba, Brazil.

◀ Figure 6 – A monitoring technician handling a recovered manatee while adjusting tagging accessories, following its release into the wild environment. © ACERVO FMA. Published with written permission from João Carlos Gomes Borges, Fundação Mamíferos Aquáticos, Paraíba, Brazil.

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— Manatee in a Lake —

The light of my first day was not very clear, it was liquid and mushy. From the internal aquatic environment, I burst out onto the outside of mother, straight into the girded space between the translucent water surface and the dark, muddy bottom where my mother's tail was now drooping, creating a mixture of mud, seaweed particles and patches of bodily fluids. I was pushed to the surface, there I tore through a new barrier – the second in as few moments – and inhaled deeply, nostrils open, flooding my lungs with fresh air.

I think I lived an eternity thus held by the pectoral fins, below which I could suck, lulled by gentle thrusts up and forward at intervals with rest just below the waterline and a murmur of sweet and sour breezes just above the boundary between my two elements. Others like us were pacing back and forth. All around us, there were pushes and salty sounds and there was also a joint, coordinated movement that accompanied the rise and fall of the slow, sleepy tide that, like us, moved little more than what was imposed by the gentler currents of this watercourse.

It was a lake for manatees, and I lived in it.

I lived during this time, which I felt long and comfortable, but which would have been only the first months of this life of mine that would prove to be long. This whole life, the real one, would be spent not in the lake of manatees, but in the lake of people. Already after the initial, comforting embrace of my mother and what should have been my world, I was hand fed by the head of more men, women and children who lived near my new address, my nearly closed lake. My final abode became a portion of dark water, confined and still, and some branches not far away, not very deep, where, only very occasionally, I met some of my own kind. The people, those other animals so radically different from my own kind, were the company beside which I grew up, and the land beyond the banks and the green grasses I could see, the farthest horizon I had the opportunity to gaze upon. The people of the land were my daily neighbours and became my closest relatives. Other manatees, but a memory.

It was a lake for humans, and I lived in it.

Here, in this interface of connection between the elements earth-water and water-air, manatee-being and human being, I and They lived together moments of peace and cooperation. I lived alone but strangely in good company. When I got hungry, peeked out and rose slightly above the water, they threw tender herbs at me different from the ones I had in the lake. They scratched and rubbed my back, releasing some of the parasites that sometimes bothered me; they let me sleep near the shore where the water was even warmer. I, after quickly

understanding the meaning of each touch, would let them march from shore to shore, clinging to me, avoiding their disastrous swim. They and I swam side by side and shared my water and the edge of their land line. Time and time went by. I grew up bringing and fattening and being lazy. Could this reality be possible?

I really enjoyed the sounds of the little waves and the gentle rocking of the tide. I produced few vocalisations but responded to those I heard that were directed at me; however, I did not appreciate loud noises. I appreciated touch, caress and squeaking but did not enjoy the use of force. It was precisely a loud noise and unprecedented force that woke me up one day and suddenly left me frightened, scarred and unable to comprehend the pain I felt on my skin and the pain I felt inside me. He, an Other, stinging me, screaming at me scaring me, forever, pushing me, fatally, away from my others. I let myself stay, but lingered in the absence of the familiar touch, to get away from the frightening touch. The distant eyes became small, and to familiar calls I did not respond. I was silent and at peace that I ruminated the tender grasses of the lake bottom and remembered who I was, trying to remember who my real relatives were, and what their lives were like, whether different or the same as mine, and how others saw me. Me, Us and the Others. A misunderstood otherness.

*

"I didn't know anything about geography, let alone that my house was an Ocean, because I always thought it was an aquarium. One day, I understood that life had changed. Strange monsters arrived in large walnut shells decorated with triangular and round scarves that the wind blew like my pregnant belly. I heard that these were candles, and the animals, men. Curious, they watched me as if I were an ox. They said among themselves that I looked more like a cow. Perplexed, they appreciated how I could swim faster than their rigged boats. They called me a fish. And not satisfied with that yet, they called me Guaraguá…They invented a thousand stories about me, they confused me with mermaids. In the end, they said I had a fish tail and a woman's body…

Where does this leave us?

They tried everything. They fished (or hunted) me with big harpoons as if I were a whale. They investigated my body to find out what I would look like inside (woman? fish? cow?)…They ate all my flesh. They cooked it with cabbage, sautéed it, dissolved my fat in lard or butter. Each of them invented a new recipe and boasted about it in their scientific books: "This fish is for the most part very tasty, and tastes as good in appearance as in

flavour, and roasted it is no different from pork loin. It is also boiled with cabbage and stewed like meat…" Now I am also a pig!…

There is one thing that everyone agreed on. I am very much a mother and I feed my children with my milk until they can fetch the herbs and leaves from freshwater rivers (because I don't eat animals, I'm too evolved). They saw that I chose the cow because it is the only way to have tits, and I don't even dare to say what they said about males (things like "bull penis" and other barbarities). Like women, I only have one offspring at each birth, and I was incredibly happy when they wrote that "females give birth to only one child." One child is a woman's, isn't that so? And my maternal side is so strong and deep that Cristóvão de Lisboa, in his '*História dos Animais e Árvores do Maranhão*', describes it this way: "I saw a female being killed and skinned and putting her skin on land by the water; and the next day, when they went to fetch water, they found her son lying on top of the skin…"

Do you think it's touching?

Today, I am virtually extinct in all seas. I will only remain in Camões' legends of mermaids and in old natural history books.

Remember me as a sea cow, fish-woman, or ox-fish, but do not forsake me."[1]

***

I too became a mother, revolving the past in my mind and births arose from my body, but that is the normality of existence, nothing to report, though I do not know where my children are. I review the possible memories. I keep the ones that identify me. I am not sure who I am, but I know that I am. After a mismatch with a certain man, I wandered peacefully until my final release, the silted opening of the riparian current became a stormy flood and took me with it away from my Them. Finally, the end of my story in the manatee lake.

Me and Mine, Me and the Others, all gathered in our equality of simply existing.

1 Translation of parts of the poetic work by Maria Adelina Amorim where a manatee is the main subject and narrator of its own life story. Full reference: Amorim, Maria Adelina (2004), *Peixe-boi ou Peixe-mulher?* (Rubrica Bestiário). Revista Atlântica de Cultura Ibero-Americana, nº 1, pp. 46–47.

2. Cosmogonies, aquatic deities, and water myths of origin

Abstract: In this chapter, I address aquatic origin myths and deities in human societies around the world. Then, I focus on the shores of the Atlantic, and how these magical–religious understandings are linked to different perceptions of aquatic animals. Other topics discussed in the chapter include the symbolic significance of aquatic bodies, open oceans, coastal waters, lagoons, estuaries, and some of the aquatic entities that are commonly related to them. Although it departs somewhat from the main theme of the book, this chapter allows us to contextualise, in the early modern learned societies, the concepts of mermaids and hybrid ocean beings that are "received" and "reclaimed" during the European Renaissance and the oceanic expansions and early globalisation.

Keywords: sea monsters; mermaids; origin myths, worldviews and waterscapes; reception of antiquity; beliefs and symbology.

The mermaid is an animal that swims in the sea and imitates people.[1]

Também há outro [*demônio*]*, nos rios, aos quais chamam igupiara, isto é, moradores da água, os quais igualmente matam os índios.*[2]

The human view on surrounding environments, the human fear of a catastrophic weather phenomenon, or the uncertainty about the darkness of the night or an unfamiliar place, are some of the primary causes of all cultural constructions of the species currently dominant on the planet.

1 Vasconcellos (1980), *Etnografia Portuguesa*, p. 539.

2 Anchieta (1900), *Carta Fazendo a descripção das Innumeras Coisas Naturais, que se Encontram na Província de S. Ficente*, p. 48.

Brito, C., *Humans and Aquatic Animals in Early Modern America and Africa*. Amsterdam: Amsterdam University Press, 2023
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People always used their powerful intellect to explain and justify what they do not understand. Spirituality, beliefs, faith, and the use of symbolic elements were the mechanisms that during the millennia of human presence on Earth allowed – and still allow – for explaining the unknown and the incomprehensible.

Therefore, nature – Earth, land and mountains, seas and tides, phenomena and strange animals – became closer to human reality through the deities that represent and personify them and, consequently, help people to understand and dominate. They remain, theoretically and philosophically, under our control. The representations of nature, as well as of its aquatic spaces and elements, have often a human form, both male and female bodies. The power of nature, as the generator and protector of life, reflects the ancestry of the importance conferred to the feminine and masculine, since the first human societies.[3]

There were many cultures across the globe – some of them highly spiritual – that invoked the ocean and water masses to create their deities. Some used the ocean as a ground for creation myths and a global vision of the world, as the source of all evil and a sign of bad omen, as a protective and giving spirit, or as a comforting power and source of sustenance, as well as an access road to profit and prosperity.[4] The origin of all water deities, or mythical–religious entities related to and controlling water-generating forms, lies at the very inception of human societies. There is a symbolic significance of water bodies – open oceans, coastal waters, lagoons, estuaries, mangroves, rivers and springs – as well as the underwater world as sites of birth, death, and renewal. These water bodies are an entity, but they also have numerous aquatic entities associated with them.

Many religions, traditions, and cultures engage the ocean and some even centre on it. In many myths of creation, the ocean was perceived as a giant womb that comprised the known and the unknown, all the possibilities of life, and all the elements of fear and fascination, terror and wonder. Across the world and the ages, a wide number of cultures have in common myths in which a creator figure ventures to the bottom of the ocean to bring up soil to create the first land.[5]

3 To know more about the symbology of the feminine and masculine in the Neolithic of the Ancient Near and Middle East, see the thesis by Almeida (2015), *A Construção da Figura de Inanna/Istar na Mesopotâmia*, p. 96.

4 Winchester (2010), *Atlantic: A Vast Ocean of a Million Stories*, pp. 161–163.

5 Roorda (2020), *The Ocean Reader. Creation*, p. 5.

In the pre-world, before the beginning of the human world, everything was water.

For the Mesopotamians, the cosmic order arises from the primeval ocean. The whole world began as water, with just two primordial deities – the god Apsu, who commanded freshwater, and the goddess Tiāmat, who commanded seawater.[6] From the ocean order is formed, yet, this was not seen as definitive, rather as being under constant threat of a return to the confusion of the primordial moment. This is what happens during the deluge, when the light goes out, and the shapes turn blurry, in an overwhelming silence. This constructive and, paradoxically, destructive power, is often associated with the aquatic realm, movements of the bodies of water, and natural disasters related to water – storms, deluges, floods.

Everything begins in the primordial aquatic chaos to which it is possible to return at any moment.[7] The flood thus becomes a symbol of destruction, but also a new opportunity to recover the cosmic order. The double sense of the flood naturally ends by shaping its use as an attribute of the divine personages. The gods, as they control the flood, embody a powerful force, encompassing within themselves the power of destruction, to establish a new time.[8] Likewise, aquatic divinities or entities that rule over the aquatic world carry and represent an absolute power over water, over lakes, rivers and springs, and seas and oceans, their tides, and all events related to them. In this way, they are portrayed from the beginning of civilisations as creatures that mix – both physically and symbolically – human characteristics and those of aquatic beings. This brings us immediately to the mythology associated with mermaids.

In Antiquity, mermaids, or different representations of "merfolks," were creatures with a head and chest like a woman and the rest of the body like aquatic animals, either fish-like or serpent-like. In the Greco-Roman world, they were partly women and partly birds. Later, in Northern European legends, they were again partially a fish or sea serpent. Mermaids show, in similar traditions, simultaneously or over different time periods and contexts, a dolphin or whale-like tail, a fish tail, or even a serpent-like shape in their half-aquatic part of the body. They can be associated both to sea serpents and the Leviathan or the kraken. They appear in the folklore and myths of many cultures worldwide and across chronologies. Sometimes, even within the same culture, they are represented as contradictory beings

6 Roorda (2020), *The Ocean Reader. Babylon by the Sea*, p. 9.

7 Almeida (2015), pp. 189–192.

8 Almeida (2015), pp. 189–192.

both in their nature and attributes even in present-day traditions and water cults. But the story goes way back. The enormous power of the mermaid – or the mother of all waters – over the elements suggest that this myth could go back to extremely archaic mother-goddess figures, such as the Sumerian Ninhursag, the Babylonian Tiāmat, and the Greek Gaia.[9]

Mermaids and their like usually come from the ocean.

What all these gods, deities, or entities have in common is the fact that they are dual in their relation to their living environment and, likewise, to their qualities; while some are helpful deities, feeding and nurturing people and fields, other have a destructive power and they frighten people. Like the ocean, which is also depicted and perceived in its duality and ever-transforming power, ranging from calm to rough and dangerous waters, from the clear surface to dark abyssal depths. All of them will keep on being appropriated and reconceptualised by different cultures and incorporated in distinct traditions and myths in several moments in time. In fact, many of these legends were reconfigured in different cultural contexts and societies over time. Classical, medieval, and modern aquatic deities may result from the adaptation and transformation of previous mythological compositions.

In the Greco-Roman mythology, we have mermaids and tritons turned into semi-gods, daughters, and sons of many different gods. They were half human and half marine and lived in the bays and shores of the Mediterranean Sea. These semi-gods held the ability of metamorphism, changing their human-fish shape into rocks or other marine subjects. Regardless their origin and format, they were "ichthyo-anthropomorphs" creatures.[10] They embody the revitalisation of past cosmogonies and former myths possibly that from Ancient Mesopotamia and, in their new contexts, they will be the source for fantastic new creatures re-entering the stage of natural philosophy, science and, simultaneously, religions and traditions.

In different parts of the world, cosmogony myths place the birth of Earth and of all living things in the back of a large whale or a shark, or even of a sea turtle. These become divinised animals that may also evolve into the construction of mythological creatures in traditional and religious rites. In other cases, like in some tribes and societies living in and from the ocean, most people picture and give voice to the rising of land out of

9 Sax (2000), *The Mermaid and Her Sisters*, pp. 44–45.

10 Almeida (1960), *Sereias de Além-Mar*.

the fathomless depths of ocean.[11] For instance, Hawaiians and Tahitians base their accounts of creation on their experience of living by the open ocean. From the nothingness, the first gods create life – usually from the ocean – and then a period of chaos emerges before giving space to order in the world. In these traditions, water was made to be a nest that gave birth and bore all things in the womb of the depth. So, all living things emerged either directly from the aquatic realm or, sequentially, from the ocean and then from the earth, first the simpler organisms and then the more complex ones.[12]

Pre-Colombian art depicts the sea in a more accepting and sympathetic way than other traditions and mythologies. The monstrous and the terrifying were not as prominent in the portrayal of the Atlantic Ocean on its western side as they would become, especially in the north-eastern Atlantic. The Incas, even though not an Atlantic civilisation, showed their gratitude to *Mamacocha*, the goddess of their sea; and the Mayans both utilised and adored elements of the sea. People living on the Pacific coasts represented this deity like a protective embrace, the supplier of fish and whales that were their livelihood, and generally emanating a mood of benevolence. This mood could on occasion be altered – albeit with lethal ferocity – whenever humankind had not been suitably attentive to her needs.[13]

In some West African countries, we will find *Mami Wata* as well as the *Quianda or Kianda*, the *Quiximbi*, the *Iemanja* or the *Calunga*,[14] all water deities, equally symbolising the birth from water, the rebirth, and the nurture and protection of Mother Nature as well as death and transformation. They can also represent contradiction in the relation of humans with

11 In many of these maritime societies, or in groups of peoples with a close connection with the coastal sea or the open waters, marine animals remained enshrouded in myth and some degree of obscurantism, in relation to their possible natural counterparts. This is true for the Indo-Pacific cultures, as many other across the world. For instance, in Papua Nova Guinea, reports up to the late 20th century refer to the occurrence of a marine mammal, which natives call *Ri* or *Ilkai*, which they believed to be a semi-human creature, much as the mermaid of Western art and folklore. See Dietz (1992), *The Call of the Siren*.

12 The Kumulipo (1972).

13 Winchester (2010), pp. 161–163.

14 *Kianda* is an Angolan (pre-colonial) mythological creature believed to be the goddess of the ocean, still today resignified by writers and scholars as a symbol of control and destruction/preservation of the environment; see Melo (2020), *You Can't Kill a Kianda*. In Freitas (2005), *B.I. da Sereia.*, pp. 12–13, the *Iara* and *Iemanjá* from Brazil are part of the group of African deities' pantheon that evolved across the Atlantic in a process of transference and syncretism during colonial period.

the environment – hunting versus sustaining the resources – and with their surrounding "worlds" – human versus non-human; terrestrial versus supernatural. The accentuated presence of the ancestral imaginary and the myth of *Kianda* and other African water goddesses in current day societies also directs the narrative towards these confrontations and cosmovision of creation and destruction.[15] In the Haitian religion of Vodou, which derives from West African beliefs, the serpent god *Damballa* created the ocean and then fell in love with and married the rainbow to raise above and to control humans.[16]

Mami Wata has a long and entangled story (Figure 7). It is an African's pantheon water spirit, which represents the waters, from where it emerged and where it lived. It may take the form of the archetypical mermaid, or siren, the half-bodied woman-fish, as well as that of a snake, or even a marine reptile. As with many other African water deities – mythological beings related to different water bodies, either marine or freshwater – it is still present nowadays in many magical–religious rituals in Africa.[17] It may take different names, and forms, according to its place of origin, but it is transversal to many local traditions, tales, and folklore. Throughout the 20th century and to current day it was still widespread across the African diasporas in the Caribbean Islands and the South American countries.[18]

It is not totally clear when these water deities emerged in the history of African societies. Yet, they are common to many different tribes, groups, and cultures; they were possibly present from the moment individuals realised their dependence on water and other natural resources. These kinds of relationships of dependency were clear to humans from the moment they became sedentary and developed through time into different legends, symbolic, and religious traditions. Some developed in convergence, while others diverged. Some represent the direct observation of nature's phenomenon while others are the result of peoples' creative interpretation or imagination.

Anthropologists believe that at the origin of the *Mami Wata* spirit are large marine mammals of West Africa, manatees or sea cows. In the 18th century, Cavazzi[19] described these animals for the Kingdom of Congo, referring to them as *ngulu-a-maza*, which means a pig of the water in

15 Melo (2020), *You Can't Kill a Kianda*.

16 Williams (2020), *The Sea-Creating, Rainbow-Loving Serpent God of Haiti*.

17 Mack (2011), *The Sea*.

18 Braham (2018), *Song of the Sirenas: Mermaids in Latin America and the Caribbean,* pp. 35–39.

19 Cavazzi (1965) [1687], *Descrição Histórica dos Três Reinos do Congo, Matamba e Angola*.

Kikongo; it is also called *Peixe Mulher*, *Pesce Donna*, or fish-woman by local peoples. Both description and name can relate to the water deity, as Cavazzi himself also compares it to the tritons (males) and naiads (females) of the springs and rivers. Recent authors mention that an older local name might have existed for this animal, the *Mbisi-a-ngulu*, which would be the pigfish in Kikongo.[20] The animal is also present in the description by Filippo Pigafetta for the late 16th century, but I will come back to this part later.[21]

Mami Wata is usually depicted in recent times as being quite pale-skinned, blonde, and wearing jewellery; she is finned like a mermaid, with a woman's breasts, and often holds a serpent. The value and cultural significance of this water spirit may have changed throughout the centuries and suffered many adaptations as it travelled with people across the ocean, but its presence is still a reality in so many Atlantic geographies.[22] In the Atlantic, there is still a great deal of this kind of reverence for the ocean today. Female water spirits, benevolent and often erotic, are enormously important in the tribal cultures of the sub-Saharan coast – especially among the Yoruba of Nigeria and in the various voodoo cults of Benin and Ghana, as well as in Liberia, Gabon, and on the island of Fernando Pó (nowadays Bioko in the Gulf of Guinea). It is a popular figure,[23] appearing for hundreds of years in the folk art of West Africa. Since the onset of transatlantic slavery, it has also popped up among members of early African diaspora on the western side of the ocean, especially in colonial Brazil and across the Caribbean basin. The Haitian god of the Ocean, *Agwé*, rules the sea creatures and plants and is the patron of fishermen and sailors. *Agwé* has two wives: *Erzulie*, the goddess of love and beauty and *Mami Wata* (or *La Sirena*), a mermaid goddess.[24]

Enslaved Africans carried by Europeans to the Americas brought many of these myths with them. Along with habits, food, and religion, they transported worldviews and myths about nature, which, again, evolved in the different contexts of the Americas. In that part of the world, and this moment in history, myths and traditions were built and kept evolving from the mixing of ancient practices with European culture and local Indigenous

20 Etambala (2006), *La Faune du Royaume de Congo et de l'Angola*, pp. 185–186.

21 Pigafetta (1881) [1591], *Kingdom of Kongo, and of the Surrounding Countries*. I will return to this author and his description further on.

22 Winchester (2010), pp. 162–163.

23 *Mami Wata* is also known as *Wata-mama* or, more popularly now, *Mammywater*; Winchester (2010), pp. 162–163.

24 Williams (2020).

cultures and ways of living and perceiving the world. The cultural and religious syncretism resulted in many similarities across Atlantic regions and a permanent connection of the present with the past. The process of creation of certain religious traditions and beliefs is a result of the contact and confrontation between Europeans, Amerindians, and Africans.[25] The importance of water in the cultures of the African diaspora, as a way of moving and of livelihood, and as a symbol of enslavement, death, liberation and rebirth, cannot be overstated. The vitality and diversity of mermaid-like spirits, goddesses, and associated cults do reflect the sociocultural and economic processes by which contemporary Caribbean and South American cultures came into existence.[26]

Mami Wata is, moreover, mirrored in local African tales and oral traditions replete with the *Peixe-Mama* (Guinea Bissau), *Nha Tia Pêxe Cabalo* (Cape Verde), *Santo d'Água* or *Ocosso* (São Tome and Principe),[27] as well as in the *Iara* or *Iemanjá* (Brazil).[28] *Iara* and *Iemanjá* are the archetypes of *Mãe d'Água* – they are Mother Water – and powerful deities in their cultural matrixes. There seems to be a clear syncretism in the creation and dissemination of local fables and ritual ceremonies across Atlantic regions that, from the early modern age onwards, became deeply connected.

Iara is an aquatic entity – of the rivers and the oceans – and in the legends of the Amazon region it manifests in scenarios that always involve the liquid realm, such as waterfalls, lagoons, rivers, streams (*igarapés*), or flood forests (*igapós*).[29] These habitats are of great importance in the life of tribal communities, Indigenous peoples who use water as a means of transportation, for food, rest, and recreation. *Iemanjá* is a female *orixá* of the African pantheon of the Yoruba religion, whose cult in Brazil is mainly linked to coastal waters. Stars, clouds, and the first gods were

25 Soares (2008) mentions that some commonalities can be traced in the indigenous *Iara*, the European mermaid, and African water deities, as already mentioned by Freitas (2005).

26 Braham (2018), *Song of the Sirenas*: pp. 42–43.

27 Almeida (1960), *Sereias de Além-Mar*. According to Almeida (1957), *Cinco Fábulas da Ilha do Príncipe*, marine animals featuring local African folklore narratives, either in the Atlantic or Indian Ocean islands or coastal areas, are quite rare; if present, stories of animals are usually inspired by manatees and dugongs (Order Sirenia) or small cetaceans (Order Cetacea, Suborder Odontoceti); sea turtles and fish may also appear.

28 Almeida (1960), *Sereias de Além-Mar*. Soares (2008), *B.I. da Iara, do Boto e de Iemanjá*.

29 Soares (2008) places *Iara* and *Boto* in the same space, since both legends arise from this immense hydric mass, which is the basin of the Amazon and its tributaries. Moreover, both entities have zoomorphic and metamorphic characteristics; usually, they appear associated with the spell they exert on men and women and the possibility of love relationships between humans and nonhumans.

born from the primordial waters of this African mother goddess. The main characteristic of this goddess of the black theogony is its driving force in the creation of the world. As such, it takes on traits of the primordial mother – it is dynamic, creative, and protective, yet also potentially destructive and fatal.[30] Like with the Mermaid, *Boto* and *Iara*, and their powers of attraction, transformation, and even punishment and death, should not necessarily be considered as carrying a solely negative connotation. They also encompass the possibility of transfiguration, passage, and movement between worlds, as well as an invitation to change, travel, and discovery, in a process as seductive as it is frightening. To this day, several local and indigenous rituals incorporate elements of the life of the manatee in association with the power and virtues of the water.[31] In popular folklore and in indigenous cosmologies, these water deities exhibit the vital characteristics and energies of the waters and represent the ambiguous virtues of this fluid element – its creative and destructive force. Thus, all these *orixás* and cultural manifestations show an ambivalent nature, hybrid and even androgynous.[32]

Moreover, we can also link all these hybrid creatures or deities from the waters to the *Igpupiara*, which is a monstrous seaman that frightened – and eventually killed – all those who faced him.

> These seamen are called Igpupiára in their language; They terrify the natives so much that many die just with the thought of them; and no one who sees them is spared; some died already, and, when asked about the cause, they referred they had seen the monster; they look like men of good stature, but their eyes are very blurred. The females look like women, have long hair, and are beautiful; these monsters are found in the bars of fresh water rivers.[33]

I will discuss the *Igpupiara* in the next chapter as an element of the history of the natural realm. But, as a reference, we must also include it here as a possible setting of origin for such deities; a definition of such a creature as a mythological being belonging to the waters is found in the paper by Camenietzki & Zeron.[34]

30 Soares (2008), pp. 36–39.
31 Ponnampalam et al. (2022), *Historical and Current Interactions with Humans*, pp. 303–306.
32 Ponnampalam et al. (2022), pp. 303–306.
33 Cardim (1583–1601), *Tratados da Terra e Gente do Brasil*.
34 Camenietzki & Zeron (2000), *Quem Conta um Conto Aumenta um Ponto*, pp. 111–112.

> The one who lives in the water springs; the one who lives in the water deeps. It is the genie of the springs, mysterious animal, that the Indians would call seaman, enemy of fishermen, shellfish gatherers, and washerwomen.[35]

As mentioned above, all female aquatic deities may, in fact, find their male counterparts. In Brazilian history, seamen are ultimately a matching part for some female deities or genies, and they were incorporated in both local traditions and folklore, as well as in some circles of European natural history.[36] However, there was no perception of the *Igpupiara* being part of Indigenous cosmogonies, such as *Tupi*-speaking groups.[37] They were, nevertheless, part of daily life and most local people would assume their existence and fear them.

> The Mermen, or men of the Sea, are called in their language Ypupiapra. The men of the country are so afraid of them, that many of them die only with the thought of them, & none that seeth them scapeth. Some that died already, being demanded the cause, said, that they had seene this Monster, they properly are like men, of a good stature, but their eies are very hollow. The Female are like women, they have long haire, and are beautiful; these Monsters are found in the bars of the fresh Rivers.[38]

We find tritons and many different mermen, seamen, or watermen in European cultures, while in Africa (Guinea), *Irã* is a malefic water genie and bad omen: "In Africa, too, there is this fish or man, which appears seldom, as if it were a ghost, yet it is certain to inhabit the River Nalú, and perhaps Pongo, on the west coast."[39] In Portugal, we are also able to trace mermen or, at least, some kind of marine men, some of whom were spotted on the shores by fishermen, while other where exhibited for all to see. In the old coastal lagoon of Óbidos, in western mainland Portugal, *Musaranhos* are described as a half-marine half-men creature that, according to local legends and oral tradition, may have their source in the past occurrence of otters or

35 Cascudo (1954), *Dicionário do Folclore Brasileiro*, p. 316.
36 Brito (2016), *New Science From Old News*, pp. 42–70.
37 Camenietzki & Zeron (2000), p. 113.
38 Purchas (1625–1626), *Hakluytus Posthumus, or Purchas his Pilgrimes Containing a History of the World,* p. 1315.
39 Freitas (2005), p. 13.

vagrant seals in the region.[40] Mermen and merwoman, nereids and water nymphs – sometimes also associated with enchanted Moorish girls – are said to be a common presence in Portuguese aquatic bodies, springs, or coastlines and, consequently, became common in folk and popularised literature.[41] Many of them are described by scholars, writers, and poets, or immortalised by painters and sculptures. They are always complex creatures that result in complex interpretations, and resignifications, evolutions, and adaptations to local aquatic (or oceanic) contexts as they are transferred from European enchanted girls to South Atlantic water goddesses in the early modern period.[42]

In the Portuguese archipelago of the Azores, we also see the connection between male and female, in this case the human males with the fantastic female creatures, in the legends of encounters of fishermen with mermaids. In fact, many local tales of women from the sea and their profound connection to the men of the sea – fishermen – are common. Mermaids or enchanted girls are the aquatic beings that upon coming ashore are transformed into beautiful women that give life (descendants) and richness (abundant captures or harvests) to their beloved men. Their powerful beauty and their physical and psychological features of plenty are sometimes associated with Scottish selkies[43] and other water nymphs. They come from the same mythological, religious, and folkloric roots and oral traditions.

> In Praia, in Santa Maria [Azores], very close to the sea, lived a fisherman who had a grown-up son. On full-moon nights they used to sit outside, watch the sea, and sometimes they heard a very beautiful voice. The father, questioned by his son, told him that the beautiful voice belonged to e mermaids, but that it was necessary to run away from them because they used to bewitch men with their singing and take them to the bottom of the sea. The more the father warned, the more his son dreamed of mermaids…The night was quiet, and the silver glare encouraged the young fisherman who hid behind a high boulder, waiting for the mermaids to approach the beach…They were girls half fish, half woman, with red hair,

40 *Memory for All*. Recordings of Portuguese oral traditions that refer to the Óbidos Lagoon. https://memoriaparatodos.pt/portfolio/maximino-alves-martins/

41 Vasconcellos (1905), *Religiões da Lusitania*.

42 Caselli (2020), *As Sereias que Singraram o Atlântico*.

43 See e.g., Parsons (2004), *Sea Monsters and Mermaids in Scottish Folklore*.

> very beautiful…The young man could not believe his eyes and soon fell in love. He took her with him.[44]

These mermaids, often present in Azorean legends, are frequently called *Marinhas*, literally "marine" or the "marine ones," and are beings of a dual nature. They are mixed creatures, able to turn into full women and then return to their marine form – just like the Brazilian *Boto* and *Iara*. Their beauty makes them attractive, but something remains hidden – the tail that reflects the character – something that threatens to destroy those they seduce; the monstrous character of these creatures is founded on this duplicity.[45]

All these different deities may arise from salt- or fresh waters. Sometimes, these goddesses and gods are described as half woman, half animal; other times, they are transformative – transfiguring from aquatic to human shape and vice versa – and others are totally abstract and have no natural form. Either way, they are hybrid entities, in their shape, in their value, and in their powers. They are happy and good, or evil and destructive; most of the time, they are plainly contradictory. Like the waters, the one that gives life also takes it away. This means that peoples must take care of these deities as much as their natural water bodies – springs, rivers, lakes, mangroves, estuaries, coastal waters, and the open sea. However, their symbolic meanings could change from place to place and even from one individual to another. Generally, those attracted to the mother-water deities, which are connected to good fortune and prosperity, fertility and abundance, cannot escape the sacrifice demanded by their devotion.[46]

All this ambiguity demonstrates, more than the hybrid character of the deity or mythical being, how the human eye operates and its ambiguous perception of the creature and its waterscapes.[47]

The image of the mermaid, as it is familiar to most of us today, emerged with the development of trade through coastal and oceanic routes and all maritime-related culture by the end of the Middle Ages.[48] During voyages and ocean explorations, the Europeans carried with them the myths perpetuated in the Middle Ages and translated from early and classical Antiquity accounts, loaded with dragons from the air and the depths,

44 In many Azorean legends, encounters of men with mermaids resulted in marriages, such as the detailed here called the "Mermaid of the Beach," in Freitas (2005), pp. 31–32.

45 Freitas (2005).

46 Mack (2011).

47 Freitas (2005), p. 34.

48 Sax (2000), *The Mermaid and Her Sisters*, p. 48.

mermaids and newts brought from the North Sea or the Mediterranean.[49] Although many of the mysteries and secrets of the newly discovered Ocean Sea began to unfold, there was enough space to fill with the new and unknown, with critters that could not be compared with European fauna. The early modern crossings of the open sea, where an incredible biological richness and an inexplicable biodiversity abounded, were easily filled with *colossal cephalopods and beasts*, *kilometric sargasso*, and *magnificent cetaceans*.[50] The Europeans reached the seas, islands, and coasts of the Americas coming from an already deeply humanised coastal territory, vastly altered natural environments, and an enormous scarcity of resources, and landed in a space that was almost pristine – or, at least, much closer to pristine than those they knew. When faced with unfamiliar animal species that only existed in the tropics, they rekindled memories of past readings and storytelling, and that was how the mermaids reappeared, now most likely associated with the fat, ugly, slow, and much-hunted manatee or Atlantic manatee, or the Indo-Pacific dugong.[51] The term *Sirenia* was used to classify the order of manatees and dugongs, but the inspiration for this name came from the mythical Sirens – merman and mermaid.[52] And, with this, many questions arise regarding the evolution of nature perception.

Can we explain the origin of certain water myths? Can we assume that real animals are always the source fuelling human imagination, beliefs, and faith? Is it possible to trace the origins of the first mermaid? Or even what came first, the mermaid or the manatee, the myth or the animal? Where can we find the source of all the sea myths and, consequently, some of the most known and culturally transversal sea monsters? Is this possible at all? And why did so many authors, naturalists, and scholars include them in their books? In the past, as today, they were sought after, scrutinised, and conceptualised. They are a source of discussions and of multiple narratives. The sea, the liquid element itself, may provide some responses.

The answers might lie in the exoticism and the mysticism of these beings, in the reception of Antiquity knowledge and legends, the incorporation

49 La Croix (1978), *História Secreta dos Oceanos*, pp. 9–34.

50 Taunay (1934), *Zoologia Fantástica do Brasil* (*séculos XVI e XVII*).

51 Dugongs (*Dugong dugong*) are members of the Order Sirenia; they are marine sea cows living on the shores of the Indian Ocean and in Indo-Pacific waters. Like manatees, their distribution is currently constricted and they are threatened by many human activities. They are listed as vulnerable by IUCN (Marsh & Sobtzick (2015), *Dugong dugon*).

52 Bullen (1909), *Creatures of the Sea*.

of different local and traditional mythologies from around the world as in all kinds of controversy related to these creatures in the early modern Europe. It can also be that, as the land is tamed, the ocean – either coastal or deep – keeps its symbolism as the last wilderness across time. The variety of life in the oceans is far greater than that on land and it is far less known and explored.[53] The deep ocean, with its abyssal valleys and bizarre creatures of the depth and the darkness, is still today the most unknown and least explored place on Earth.

In fact, tradition makes the ocean a remnant of the primeval chaos, surrounding the land and its kingdoms. Sea water, where symbolic mermaids, in their multiple forms, drag their prey, embodies an image of total dissolution. On the other hand, it is simultaneously the source of all life. It impressed early peoples as an endless fertile womb, from which new forms could emerge at any moment.[54] These are the paradoxes of the sea; the beginning and end of human life, and mermaids are the creatures that best represent them.

Mermaids have persisted hitherto as a legend nearly as old as the written records of humankind and in the accounts of those who have tried to trace its line of descent.[55] Today, mermaids are usually described as legendary aquatic creatures with the upper body of a human and the tail of a fish. And what we identify as a mermaid in European traditions – a modern (re)construction of an ancient mythological element[56] – is also the siren (in Greek mythology), the merrow or the selkie (in the Celtic mythology), or many other variations, nereids, naiads, and *ondines* (in many European traditional and oral stories). We can also find the male counterparts of the feminine mermaid, such as the merman or tritons. All of them are hybrid beings with a plurality of meanings. They are a symbol of transformation and metamorphosis (specifically relating to alchemy) and symbols of unity that link Earth and Water, body and soul. They could be evil, like the sirens of Greek mythology that lured sailors to their deaths,[57] or simply a feminine spirit of fresh or ocean waters that bestow love on humans. They can be good and nurturing, like when, as far back as 5000 years ago, Enki and his *apkallus* started to teach people about the world and feed people with fish. Their hybrid characters are

53 Sax (2000), *The Mermaid and Her Sisters*.

54 Sax (2000).

55 Sax (2000); Carrington (1957), *Mermaids and Mastodons*.

56 Pliny, the Elder, provided the first classical description of the mermaid.

57 Sax (2000).

based not only on their human and aquatic shapes, but also on the fact that many of these entities belonged simultaneously to land and sea and behaved as such.

Other types of duality can be found in these aquatic entities. The twin-tailed mermaid may be the picture of Good and Evil on different occasions, or even in simultaneous contexts. Sometimes, it represents Melusine and is commonly portrayed as being half-serpent/fish, half-human, and having a fish tail divided in two. Mirrored mermaids, or pairs of mermaids (sometimes one female and one male) are also common and they resemble a sole being with two heads and two tails. These representations of double-tailed mermaids are rarer than the typical mermaid but, even so, they are deeply rooted in many different cultures and represented in architecture and sculpture, medieval bestiaries and herbaria, in literature over time, and in different cultures, as well as in cartography and visual art. Plain-tailed mermaids may also, eventually, find their source in the sightings of rare or unknown animals from the sea and oceans.

Descriptions and illustrations of strange, large, and quite bizarre sea monsters about in medieval and early modern sources. Mermaids, tritons, and all kinds of half-fish, half-human beings are amongst them. They generally have their own entries in most bestiaries[58] and natural history treatises, such as in the *Hortus Sanitatis*.[59] As an example of an artist in the transition between the late medieval and early modern mind frame, Hieronymous Bosch, also known in Spain as El Bosco, offered mankind a representation of two mermaids, side by side, in the central panel of the Garden of Terrestrial Delights; this can be interpreted as a double mermaid. This type of representation of two mermaids, showing two tails (either with just one upper body or two) – the double or twin-tailed mermaids – is present in many European Renaissance natural history works, for example by Ambroise Paré,[60] Adriaen Coenen, Ulisses Aldrovandi, John Jonston,[61] and Caspar Schott.[62] All these authors included multiple mermaids in

58 Medieval bestiaries incorporated the sum of knowledge about all creatures (all living beings) of the world and, due to the limitations of the authors (likewise of most readers), there was little attempt or need to differentiate facts from fables. Even real animals were said to comprehend human qualities, virtues, and sins, and were used for moral purposes most of the times. See Ellis (1994), *Monsters of the Sea*, pp. 78–89.

59 *Hortus Sanitatis* (1497), *De Herbis et Plantis*.

60 Paré (1982) [1510–1590], *On Monsters and Marvels*.

61 Jonston (1657,) *Historiae Naturalis de Piscibus et Cetis*.

62 Schott (1662), *Physica Curiosa*; Conlon & Vollrath (N.A.), *The Correspondence of Caspar Schott*.

their natural history tomes multiple mermaids, as if they were different specimens of real-life nature. Paré,[63] like many other naturalists and physicians, offers early modern audiences similar views of these so-called marine monsters.

> …it must not be doubted that just as one sees several monstrous animals of diverse shapes on the earth, so also are there many strange sorts of them in the sea, some of which are men from the waist up, called Tritons, other [are] women, called Sirens, [or, Mermaids], who are [both] covered with scales.[64]

In the late 16th century, Adriaen Coenen, a European fishmonger, an autodidact naturalist and avid collector of novelties and curiosities from the marine realm, described a panoply of marine animals of the Northern Seas, and even some from tropical waters, in his Book of Fish and a bit later in his Book of Whales.[65] He also included accounts of different types of sea monsters – and at least one human monstrosity – mermaids and other "merfolks."[66] But according to his own words, and different from other described species, he had never seen a mermaid or even known someone who had.

> I come across all kinds of renderings of mermaids and mermen in writings, and they are described in many books. But I have never found or seen a person in the whole course of my life who has seen a merman or mermaid with his own eyes. When I wrote this I was 70 years old, in the year of Our Lord 1584.[67]

Yet, mermaids are out there in all their myriad shapes and kaleidoscopic meanings. Moreover, mermaids, as other sea monsters in Renaissance's natural history and cartography, reflect an intriguing mixture of fantasy, information from books, and some first-hand observations of the sea.[68] Sirens, nereids, and nymphs abound in all types of medieval and early modern cartographic productions. But from the 1500 onwards, in the context of the Iberian Empires and a new, exotic, tropical geography, (sea)

63 Paré (1982) [1510–1590].
64 Paré (1982) [1510–1590].
65 Coenen (1585), *The Whale Book*.
66 Brito (2016), *New Science from Old News*.
67 Brito (2016).
68 Van Duzer (2013), *Sea Monsters on Medieval and Renaissance Maps*.

monsters became omnipresent, simultaneously distant and yet nearby European societies. At the end of the 16th century, we see cartographers incorporating the latest available information and images about sea creatures while older traditions of representing sea monsters persisted.[69] These cartography and natural history monsters (Figure 8) constituted by then a common element in the empirical observation of nature, as I will discuss further on in the book, as well as in the development of theories about the diversity, abundance, and the functioning of nature and the oceans.[70]

This same trend is found in most European Renaissance naturalists' works that depicted and described sea monsters and sea animals, side by side.[71] Caspar Schott, similar to Ambroise Paré in the previous century, dedicates most of his work to human monstrosities and deformities. But we also find many sea monsters in his book that are also referred to and depicted in the works of Aldrovandi or Gessner or Paré. Indeed, much of Schott's work is inspired by previous pieces and by previous authors, naturalists, and philosophers. Particularly relevant is his veneration of and affection for his teacher Athanasius Kircher,[72] which we can assume is reflected in his depictions and descriptions of monsters and mermaids. In Schott's *Physica Curiosa*, there is one plate full of hybrid marine creatures, such as the triton,[73] the *Monstrum Marinum effigie Monachi*, and the *Satyrus Marinus*. There is another plate featuring winged monsters with lower bodies full of scales, and in his frontispiece, we find, among other large marine animals or creatures, a double-tailed mermaid.[74] All the curiosities, wonders, and possibilities of nature are captured in the 16th and 17th centuries' European naturalists' works. Citing Aristotle and Pliny, as well as contemporaneous colleagues, and including state-of-the-art information – and specimens – obtained through their networks of exchange, these naturalists aimed to encompass as many details as possible on life across the world. For them, the ocean, containing all types of life forms and peculiarities, such as fish-shaped men and woman-like marine beings, did not remain in the shadow of the Earth.

69 Verberckmoes & Thomas (2006), *Introduction*, p. v.

70 Verberckmoes & Thomas (2006), *Op. Cit.*.

71 Brito (2016), *Op. Cit.*.

72 Conlon & Vollrath (N.A.), *The Correspondence of Caspar Schott*.

73 Schott's Triton does look very alike Kircher's engraving of Derceto.

74 Schott (1662), ***Physica Curiosa***. See also the blog entries 'Physica Curiosa' (https://www.oddsalon.com/physica-curiosa/, accessed 31 May 2019) and 'Monsters, the Scientific Revolution, and Physica Curiosa' (last accessed May 2020).

Just as it has been shown, and I will continue to discuss, merpeople appeared frequently among the pages of early modern printed texts, were visually represented in illuminated manuscripts and maps, and were the subject of literary, scientific, and religious texts.[75] The definition-defying mermaid offers a fascinating window onto the malleability of early modern concepts such as sex and gender, selfhood and otherness, discovery and mystery,[76] as well as natural and unnatural. This is like the construction of the concept of (early) modern zoology or natural history, where nature and culture were co-players and knowledge production was hybrid and interconnected. For that reason, these boundary-crossing, hybrid aquatic creatures offered a case for debating different aspects of the creation of the world, of nature's productions and organisation. Additionally, they provide us with an opportunity to discuss the construction of an early modern history of the exotic natural history, knowledge evolution, and key players involved.[77]

European scholars, humanists, and naturalists have been considered the leading actors in the creation of state-of-the-art natural history information, which included both real animals and fantastic beings, myths from the ocean and water bodies, and all types of monsters. This was the mainstream knowledge of the early modern age that would continue to be copied or cited well into 18th and 19th centuries' zoology compendia, dictionaries, and classification systems.[78] Though colonising local "natureviews" and worldviews they, nevertheless, incorporated those traditional and Indigenous knowledge and practices that it was possible to rescue. Of course, this also happened the other way around – "the development of these syncretic entities [of the waters] is never linear; nor is heir fixed nature."[79] We cannot forget that sirenians have been and still are culturally significant to human societies throughout their range and across time.[80]

Hybrid creatures – mermaids, sea monsters, and other aquatic critters – and myths of hybridity survived the passage of time, circulating across many ages up to the present. The African *Mami Wata*, the European mermaid, the Caribbean *Serena*, or *La Sirena*, the Brazilian *Iara* and *Iemanjá* all prevailed.

75 Pederson (2016), *Mermaids and the Production of Knowledge in Early Modern England*.
76 *Ibidem*.
77 Brito (2018), *Connected Margins and Disconnected Knowledge*.
78 *Ibidem*.
79 Braham (2018), *Song of the Sirena,* pp. 42–49.
80 Ponnampalam et al. (2022), *Historical and Current Interactions with Humans,* pp. 300–302.

◀ Figure 7 – Sculpture of the African water deity Mami Wata. Associated with health and wealth, love, and good fortune, she is celebrated throughout Africa and the African diaspora as a being of great spiritual power. Her non-African appearance is perhaps due to the fact many Africans associated the early European traders and explorers with the sea and water spirits. For her followers today, however, Mami Wata represents modernity, worldly sophistication, and access to a cash economy. From Nigeria (Igbo). 1950s. Wood, pigment. Original in the Minneapolis Institute of Art (The Norman Gabrick Endowment for African Art). Public Domain (https://collections.artsmia.org/art/111879/mami-wata-figure-igbo)

▼ Figure 8 – A representation of a mermaid in the Americas speaking to European men. In the foreground, men in the settlement run from area upon viewing the mermaid, and in the distance men on a ship attack the mermaid. Text describes the account of Sir Richard Whitbourne in Newfoundland when he saw a strange creature swimming in the harbour of Saint John. It came up to the ship and tried to get in but the men on the boat struck it until it fell back into the water. Having blue streaks resembling hair and a tail, Whitbourne acknowledges that it might have been a mermaid, but he was not sure. This image is derived from Theodor de Bry, America, part 13, p. 4. © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/nv9a3d)

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— (My) Mermaid of the Island —

In a land of volcanoes and fishermen there is no other way than to have faith and believe, always living in the hope of a miracle. On one end, there is land – a loud, enraged, and unpredictable monster. On the other, there is the ocean – another loud and enraged monster, claiming the souls of the most reckless and the bold. Thorn between fire and water, there is constant hoping for non-destruction and faith in permanence and survival. Thus, the church is never empty, even today, but especially on Sunday mornings. They need to keep their faith. They pray as if mumbling imperceptible words. They do the sign of the cross. Fresh holy water is sprinkled over them to soothe the rages of the salty elements. They are men of the land, and the sea, sprayed by salt and holly water.

The bundled clouds are up there, hand in hand with the sky. Rays of sun passing through their interlaced fingers, paths of light open to all-time believers, blessing the people and the ocean, mirror of hope. And these men believe. The archipelago is the father of all islands. As a portentous sea horse, it nurtures its baby calves in his belly, giving birth to pieces of land, sea, and life. Clusters of disjointed islands, they are bits of land rising from the sea, spaces of deep contradiction. It is not paradise, but almost. It is not hell, but it looks like it.

And, thus, their offspring, men, and women, pray, blessing themselves, hoping...In their own time, they do anything to make sure that they take from the land and the sea their much-needed livelihood. That is why they pray their litanies, bless themselves and believe in their bounded future.

Here time occupies its own time and space. Here you have that feeling of depth and thickness that you feel more in some places in the world. In the Azores, centre of the Atlantic world, time occupies space in a very perceptible way – it is profound and dense.

Early in the morning, I watch people leaving the church, treading heavily on the embedded black stone steps. It is a sunny morning. There's a cat moving around.

The grey cat's back is warm and almost camouflaged, and obviously languid, it tiptoes on the black stonewall where I lean. It stares at something beyond it and licks its whiskers. A lilac hydrangea shakes beneath its padded paws and some petals fall. I hear something that sounds like a purr. Is that the cat?

Our guide arrives. We start walking; now it is us treading the black stones. He speaks his stories.

His grandfather was a serious man, he says. According to his almost mumbled words, this fisherman from Ponta Delgada was not a man of lies;

he believed in the truth and had faith. He had been the one whispering to everyone, while rocking his little daughter to sleep, our guide's mom, that mermaids were real.

And his mother still urges her son, the carrier of the family's memories, who speaks to us, to believe that mermaids exist. Still today, she keeps claiming that they are real, although she does not believe in dragons nor dinosaurs. She believes that mermaids live somewhere out at sea and sometimes come to land. Because her father once whispered to her that one day he had caught a mermaid, one of those watery, fishtailed women. And the old and strong fisherman was not a man of lies. If he told her that when he was young he had caught a small and delicate mermaid at sea, brought her home and put her in a small tank filled with sea water, then it must be true. Undoubtedly, he had brought her home and kept her in seawater. But he also said that the mermaid, whose body reflected all colours of the sea, and whose soul sang enchanting ballads, soon after, had become sad, and feeling trapped and far from the sea, quickly became lifeless and stopped singing. She had lost her sea glow. She used to sing beautiful songs in a language and melody that he did not understand but loved so very much. He, who had experienced that one and only love, tender and passionate, casted his feelings in the wind, muzzled his heart, and took her back to the liquid realm that was her home, remaining alone on the shore, in his youthful solitude. He kept dreaming of the beautiful mermaid for a few more years. Yet, as no longer hearing her, he started looking for a real woman to marry, with a good voice and better legs – yes, legs are quite important and only out of love had he had excused the fish tail before. And he eventually found her. And, while he was building his own family, he kept on telling the story of the mermaid.

While leading our group around the island – still today a land of seafarers who carve the memory of their lives and their beliefs in both water and land – he told his story, which contained all our conflicting love stories among mismatched equals. And, as his deep, calm, and undulated voice carried us along his story, paying tribute to the past, it also led my steps and dreams. With his long, dark, and dancing hands, he wove another sea legend in my entwined memories.

For me, the sea is always an all-encompassing everything, and the power of this permanent presence in myself constantly demands me explanations and justifications. Yet, for those who live on this island, its ancestry is so clear and simplified. There is no other way, they tell me, when the earth dries and hardens – hunger pushes the bodies to the sea life. Then, fishermen, fishwives and sailors of all kinds act out of chance or need, seldom driven by a nostalgic love. In any case, out of boldness.

The people of today and their ancestors many generations before, decided to build their house right here on these islands, in the heart of the world, in the middle of the ocean and on top of a volcano. And because they built it in a land of volcanoes and sea, they depend solely on their faith – that kind of faith that builds paths and destroys barriers.

We continue our journey, immersed in this reality and in the thick, sticky immateriality of this place. In the same space, flowing waters reflecting coloured backgrounds, flowers with garish voices and intense white fumaroles produce an evident timelessness.

Camellias and sulphur. Or the absence of perfume, in an obscene partnership with the tenacious smell of the earth. Paradise and hell in the same square metre.

The craters change their place from time to time; everything changes. The black stone walls remain in the same place; everything remains.

The same square metre reflects change and permanence. The magic forest rises from the deepest depths, from the core of the boiling earth to the green and light blue of the sky. And suddenly, at this exact moment in space and time, we realise that the islands are no longer just sea and fluidity and become matter too. Their primordial element is the womb of the pregnant earth, about to burst a new island life. It is fire that nourishes water. Fire and water are opposed, but eternally interconnected.

On our way back to where we had started, our guide opens a gate in the middle of the black wall and enters his own house, inviting us in; cool white walls ready to welcome us. I see the hydrangeas and red camellias stripped and trampled on the dirt floor and realise that the story is back to its beginning. The story is circular, and it comes alive. As all stories do.

I walk past his backyard where the cat still crawls and licks and wags his whiskers and I look into one of his hidden corners. There, under the shade of the climbing vine, lives a mermaid inside a blue plastic bowl filled with seawater. She stretches one hand in the air, to ward off the cat with silent words, while her tears and rhymes draw maps of deep lines on her face. The mermaid watches the blurry hydrangeas at the edge of her world, silently, as she craves for the multi-coloured waves of her sea and her true love.

3. Aquatic monsters: From imaginary animals to sharks, caimans, and sea lions

Abstract: This chapter covers the occurrence and description of mythological aquatic beings and similar creatures in both indigenous and European cultures, and how they relate (or not) to real animals of tropical latitudes. Strange or frightening sea monsters populated the early narratives of American geography and nature. They were described as existing outside the natural realm, breaking the boundaries of local and European categories of knowledge. Gândavo's sea monster, or the feared sharks and alligators, reinforce my idea of the circulation of natural curiosities. I also offer the perspective of the monster – the animal itself – as an agent in the construction of a historical narrative of interspecific encounters.

Keywords: sea monsters; aquatic critters; mermaids and manatees; colonial Brazil; early modern perceptions; Indigenous societies and Europeans.

These marine men are called in the language Igpupiára…they hug the person so strongly kissing her, and hugging her to itself that they leave her in pieces, though being whole, and feeling her dead they moan as if feeling for her, and dumping her they run away…[1]

An interesting fact and that touches us closely: the sirens revived, in America, specially after the narratives on the Amazonian explorations. And it seems that the cause of such revival was the bulky, heavy, disgraceful and horrendous faced, cow fish, the pacific and so persecuted manatee![2]

1 Cardim (1925), *Tratados da Terra e Gente do Brasil*, pp. 89–90.

2 Taunay (1934), *Zoologia Fantástica do Brasil*, p. 55.

Brito, C., *Humans and Aquatic Animals in Early Modern America and Africa*. Amsterdam: Amsterdam University Press, 2023
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Are mermaids real? This question has been posed often, by different people, and repeatedly. The answer may vary and depends on those who looks at the ocean and the living organisms in it. Humans are fascinated by the radically diverse and different, and so stories, objects, and subjects may have different meanings at different moments in time for distinct observers. If we believe in something, does this belief make it real even if not true? May a real thing, critter or perception, not be, in fact, a true thing. Because being true is quite different from being real. It may very well be just a matter of perspective, of memory and understanding, and of positioning in time and place.[3] And then, the untrue and non-existing elements, or unseen forces, may shape actions and choices.

> *I do not approve of all* [monsters]*, because I know that some are doubtful, if not false; others superstitious; others perhaps even manifestly false.*[4]

> *That the wonders of the Deep are infinite, and that the water does afford more various and sundry kinds of Monsters then the earth, is undeniable…*[5]

On 27 June 2012, NOAA[6] – the US National Ocean Service – felt the need to clearly respond to this question and issued an official statement reporting that there is no scientific evidence of the existence of aquatic humanoids. This online news[7] contains a very brief history of mermaids and describes the fascination they have exerted on people over time and in different cultures, concluding with the unequivocal statement that such beings are not real. The article leaves us questioning why these mythological elements occupy the collective (un)conscious of almost all peoples connected to the sea all over the world. It turns to historians, philosophers, and anthropologists to provide answers to all of those interested in this subject. A considerable number of people believe in mermaids, in their cultural manifestations, and many known physical forms. They are not true, but they are real. No

3 Lisboa (2018), *Então, O Quê?*, pp. 28–33, p. 190.

4 Schott (1662), *Physica Curiosa*. 'Monsters, the Scientific Revolution, and Physica Curiosa' (https://blog.biodiversitylibrary.org/2013/05/monsters-scientific-revolution-and.html, accessed 31 May 2019).

5 Anonymous (1680), *Strange News from Gravesend and Greenwich*.

6 NOAA is an acronym for National Oceanic and Atmospheric Agency, an institution part of the U.S. Department of Commerce.

7 http://oceanservice.noaa.gov/facts/mermaids.htmt. Reviewed February 26, 2015, and accessed November 1, 2016.

evidence holds up because this is not about evidence and proofs of existence.[8] It is about beliefs.

As we have seen, this belief became legend and it crosses geographies and chronologies, emerging to the surface of the sea in the different oceanic bases of the Earth since remote times, lurking here and there in water streams, coastal zones, and river fronts, and surviving to this day without constraint. At the beginning of the 21st century, people still believe in the existence of these mysterious and elusive creatures, half human half marine. This arises both from the remembrance and repetition of old stories lost in the mists of time and the creation of new stories by the most modern technologies of the digital world.

Thus, mermaids kept their position in our memory and oral history, in symbols and beliefs, and in the traditions and ethnography of cultures of the non-Westernised world. Yet, they are also clearly present nowadays, in times of instant across-the-globe information, in distant and close geographies, in coastlines, legends, writings and letters, in the imagination and imagery of a multitude of educated and up-to-date people in different continental locations of the so-called developed world. Mermaids are truly global.

Books and children's stories present several versions of small (and emancipated) mermaids, either in the form of a fragile underwater princess or an obscure selkie.[9] Movies keep creating a surrealistic vision of marine women[10] and writers, poets, and artists[11] keep materializing, in words and paintings, old conceptions of human beings coming from the sea.

Yet, a whole new perception and belief in mermaids and their bizarre underwater world was reborn when the television network Animal Planet launched, in 2012 and 2013, respectively, the movies *Mermaids: The Body Found* and *Mermaids: The New Evidence*, in the format of a television documentary. It thereby reached one of its widest audiences in recent years.[12]

8 Lisboa (2018), *O Falso e o Elefante na Sala*.

9 Such as, for instance, the recent children's animation movie, *Song of the Sea*, by Tomm Moore, in which the main character inherited from her mother the special powers to turn into a seal when in the sea and to assume a human form when back on land.

10 For instance, Neil Jordan's film *Ondine* inspired by Irish mythology, in which Syracuse, a fisherman played by the actor Collin Farrel, captures in his net a strange woman of the sea, who his daughter believes to be a magical creature.

11 Throughout the 20th century, we can revisit the works of the painters John William Waterhouse or Herbert James Draper, even those of Gustav Klimt or the Portuguese artist António Dacosta, and in many of them we will find mermaids and aquatic nymphs.

12 *'Mermaids: The body found'* had 1.9 million views on the day of its television debut on May 27, 2012.

These alleged fictional documentaries, called "mockumentaries,"[13] based on exaggerated (if not fake) stories, incorrect interpretations of sightings and unrealistic images – that rely on an advanced digital technology and should be filed as science fiction – provoked a real frenzy in their public, scientific circles and all forms of communication and social media. The effect was contradictory, leading some to start believing in mermaids, as the documentary validated their existence, and others feeling outraged by such an abuse of the production and dissemination of films. In addition to NOAA's denial, a month after the launch of the programme, other institutions and media exposed the scam. Yet, this should not have been necessary, since it was expected that a curious but attentive viewer would realise the goal of these films. There was a footnote, which appeared in very small letters, stating that the programmes were fiction, based on "scientific theories" and not on reality. Nevertheless, the truth is that these new stories, displaying complex digital visual effects and an intricate imaginative plot, brought mermaids back to the limelight.

In the 16th century, Ulisses Aldrovandi, the renowned Italian encyclopaedic naturalist, the so-called father of natural history, who produced several treatises in profusely illustrated editions, also presented his audience with fake marine beings posing as fantastic elements produced by the wonderful creation of nature.[14] At the beginning of the modern era, European consumers were people from all social and education strata with a wide range of awareness of the world, eager for information on the natural history of the exotic. Despite their social status and level of literacy, they absorbed every news on the different and recently discovered beings; sea monsters were dovetailed for these new categories. Like today, the Renaissance author would offer what his audience desired, responding to its demand with an abundant offer. Thus, Aldrovandi published (during his lifetime and posthumously) editions full of marine, terrestrial, and flying beings presented as real,[15] in addition to many animals that actually belonged to the natural environment. They were monstrous beings, magnificent productions he knew to be a creation manufactured in his cabinet of curiosities or elsewhere in Europe or the globe. The exotic, monstrous, and unknown strongly attracted people at the time,

13 'Mockumentary' or 'docucomedy' is the name for certain types of movies or television programs in which fictional events are presented in a documentary format whether to create a parody or to try to create a reality effect within the presented fantasy.

14 Aldrovandi (1642), *Monstrorum Historia*.

15 Senter et al. (2013), *Solution to a 440-year-old zoological mystery*. Brito (2016), *New Science from Old News*.

as it represented the opening of the distant natures and geographies to Europe and the ownership of that world. These reasons underpinned their beliefs. Nowadays, it is also the discovery, innovation, and possibility of the existence of something yet to be revealed to mankind, which maintains the keen interest in such natural aberrations. In addition, these beings embody, in their eternal duality, the beautiful, grotesque, good and bad, water and earth, normal and abnormal, reflecting many fears, doubts, and insecurities of human beings and the fragility of all attempts to create hermetic categorisation systems.

It is precisely this need to know, control, systematise, and categorise, inherent to the human species, in order to make sense of the surrounding world, which leads us to the present story. At the inception of the modern biological sciences, around the mid-18th century, when zoology and botany began to establish their roots, several naturalists started categorising, in a systematic and increasingly global way, all known living beings. Several had tried, over the previous centuries, using very different systems, forms, and justifications, but the hero of them all was Carl Linnaeus,[16] who attributed a Latin binomial classification to each known species of fauna and flora. Thus, he created a method that is still used in the sciences. Linnaeus was the first to officially describe the manatee in the history of science. He travelled back to ancient mythologies to find the term used for mermaids – s*irena* – and created a category for this species, which displays unique characteristics and was sparsely known at the time. There were many previous descriptions (and illustrations) of manatees by Castilian and Portuguese authors at the dawn of the Atlantic explorations.[17] The manatees – their extinct relative that lived in the Arctic, the Steller Sea Cow, and their current Indian Ocean's counterparts, the dugongs – large herbivorous marine mammals, may be at the origin or rediscovery of myths about aquatic hybrid animals. Together they are the sea cows and each of them tells their own story.

The three species of manatees live solely in the Atlantic Ocean, occupying coastal areas, riverfronts, and even inland waters. They may be distinguished from dugongs by their geographical distribution, besides small anatomical details. Currently, the number of manatees has diminished dramatically, and they occupy an increasingly smaller area due to the continued direct and indirect impacts of numerous human activities on the coasts of West Africa,

16 Lineu (1939) [1758], *Systema Naturae*.

17 Acosta (1590), *Historia Natural y Moral de las Índias*. De Lisboa (1967) [1647], *História dos Animais e Árvores do Maranhão*.

the Caribbean, and South America, including the Amazon River. Centuries ago, when they were much more abundant, they must have been part of the natural reality of many Indigenous societies and known to Iberian explorers and chroniclers. These strange marine animals were initially found on the African coasts of the Atlantic from the mid-15th century onwards. Yet, it was Christopher Columbus who first mentioned, in 1493, encountering three female forms at the ocean's surface in the Caribbean.

> Last day, when the Admiral was going to the Rio del Oro, he said that he saw three mermaids who came out of the deep sea, but they were not as beautiful as they say, they looked somehow like a man in the face. He also said that other times he saw some in Guinea, on the coast of Manegueta.[18]

Those who observed and described these animals mixed real biological characteristics with fragments of their imagination or their preconceptions. They were possibly inspired by the knowledge of Mediterranean mythology or the works of humanists like Damião de Góis, who also described such beings on the European coasts. Such accounts imbued the animals with the face of an ugly, shapeless beast but a woman's body, hence names such as the "woman fish" of Guinea, in addition to the well-known "manatee" that the missionaries – such as Fernão Cardim[19] or Jean de Léry[20] – often described with reference to Brazil. Quite contrary to some of the editions by other European scholars, most of the Iberian descriptions did not circulate in their own time, or in the subsequent centuries, mostly due to the fact that they were written in Portuguese and also as a consequence of a politics of secrecy and silence by the Portuguese Kingdom regarding the overseas.[21] This resulted in a lack of differentiation in those early times of modernity between the mythological being and the sea animal, the mermaid and the manatee. Carolus Clusius[22] registered the animal in the annals of natural history for the first time and later came Ulisses Aldrovandi's descriptions, and both inspired the Linnaean taxonomy.[23]

18 A transcript of a Christopher Columbus's passage, as it appears in the book of Joseph Durand book. Durand (1950), *Ocaso de Sirenas*, p. 22.

19 Cardim (1583–1601), *Tratados da Terra e Gente do Brasil*.

20 Léry (1578), *Histoire d'un Voyage Fait en la Terre du Bresil, Autrement Dite Amerique*.

21 Costa (2009), *Secrecy, Ostentation, and the Illustration of Exotic Animals in Sixteenth-Century Portugal*.

22 Clusius (1605), *Exoticorum Libri Decem*.

23 See a discussion in Brito (2018), *Connected Margins and Disconnected Knowledge*.

One would expect – at least I would – that the Linnaean characterisation and imprinting of the manatee in the annals of natural history would dissolve all mermaids from medieval bestiaries, general histories of the new world, tomes of monsters from beneath and beyond, accounts of sea voyages, and explorations of the beginning of the Atlantic, in the waves of the sea like an obsolete magic. In fact, many naturalists and scholars had long thought that the discovery of the Sirenia and the accumulation of scientific knowledge on these marine mammals, since the modern era, would take the space previously occupied by the legends and myths of mermaids and other mythological aquatic beings. António de Almeida said in his communication to the Science Class of the Science Academy of Lisbon, in 1958, when referring to manatees and dugongs:

> …modern naturalists of the 16th and 17th centuries have provided detailed news, naming their main somatic characteristics, habitat, forms of capture, use of the remains for nutrition, prophylactic and curative therapeutics, underlining superstitions related with these animals… the evolution of the natural sciences in modern and contemporary ages has enshrined the accuracy of most of the testimonies of the ancient Portuguese about manatees and dugongs; yet this knowledge definitely contributed to undo the marvellous and exciting myth of mermaids whose influence deeply and long-lastingly imbued the imagination of some of the most illustrious writers of literature and art in Europe and the Americas.[24]

The anthropologist was correct as to the value of the empirical observation made by the Portuguese and the Spaniards and the knowledge built from the 16th century onwards on the manatees. Nevertheless, it is not true that the mermaid tale dissipated quite differently from other equally famous mythological beings, also inspired in marine and terrestrial animals.

Some claim that the unicorn, a famous mythological winged quadruped with a magical horn and supernatural powers occurring in legends and stories, possibly inspired by an extinct animal in prehistoric times,[25] disappeared faster from European natural history in modern times. Aldrovandi kept it alongside rhinoceroses and other quadruped beasts, side by side

24 Almeida (1958, 1960), *Sereias de Além-Mar*.

25 Shpansky et al. (2016), *The Quaternary Mammals from Kozhamzhar Locality* (*Pavlodar Region, Kazakhstan*).

narwhals and sea cows beautified with horns.[26] Yet, the unicorn disappeared from oral tradition and from many European beliefs following a greater familiarity with the African rhinoceros, its first Renaissance representations of the 16th century, and the attribution of its horn to the narwhal[27] in the 17th century.[28] Just as the rhinoceros seems to have replaced the unicorn in the European realm of exotic terrestrial beings, the manatee could easily have replaced the mermaid in the kingdom of waters. But that is not how the story goes, as we very well know.

History jumps between mermaids and manatees, which often touch and mingle, crossing medieval and modern centuries through different types of scientific and cultural productions. Mermaids live side by side with manatees and dugongs; seals and sea lions occupy the same habitats, share the same space, and contribute to the same taxonomies, stories, and traditions. Currently, they maintain a presence in literature, painting, cinema, music, and in the legends that persist and are renewed in subsisting local cultures, as well as in habits and traditions related to the sea all over the world.

There seems to be no other marine being entailing as many existential doubts or bipolarity in its historical essence as the mermaids and the animals that inspired their creation. And the difficulty in separating one from the other remains until today, leading us to swing between a strict belief in scientific truth and episodes of an epic hope from the unknown depths of the oceans, from which a novelty arises that will change our view of the natural world. Although unreal, sirens persist alongside their biological counterparts. And perhaps will even survive them, as manatees and dugongs are currently under great threat of extinction[29] and danger, while myths and legends tend to remain.

Inevitably, we return to the initial question, to which we still do not have a rational answer. In fact, we know mermaids are not real, but, somehow, they exist. How did imaginary beings, which have never been true, become

26 Aldrovandi (1642), *Monstrorum Historia.*

27 The narwhal is a species of cetacean that only inhabits polar waters, whose males have a long spiral tooth that erupts from the jaw to the outside of the body and can reach half the size of an animal.

28 Look at the brief news in the Portuguese journal 'Observador' on '*The unicorn horn is a sensitive tooth*' http://observador.pt/2014/05/31/o-corno-unicornio-e-um-dente-sensivel/ last accessed on November 1, 2020.

29 Currently, all extant Siren species (manatees and dugongs) are on the list of endangered species and are considered vulnerable according to IUCN criteria – International Union for the Conservation of Nature (http://www.iucnredlist.org/).

tangible in the pages of books and museum specimens, and move legions of fans and believers to this day?

In the spring of 2015, I shared these wandering thoughts in a lecture I was invited to give by João Luís Lisboa. Whenever I mention marine mammals in the history of the Atlantic or marine monsters in works of early modern European scholars, mermaids are radically unavoidable. We come across all types of mermaids – be they legendary beings and semi-representations of real animals, abstract conceptions, or expressions of the human condition. That day, after the lecture on these subjects to that small class of young college students of history, sociology, and tourism, they asked their questions. By the end, a sad and discouraged face looked at me and posed one last question.

So, there are no mermaids at all?
No, there aren't. I answered.
She then replied in a whispering voice:
I must tell my sister the truth; she'll be so disappointed.

Back in medieval Europe, people were easy believers; they fell for not just mermaids, but also unicorns, dragons, and a whole panoply of mythological beings that were considered real. Brief observations of animals, or even catastrophic or rare natural phenomena, may give space to a crescendo of possibilities, alongside an absence of explanation for some of these events. God the Creator would have made all possible, for the good and bad of mankind, and nature shows all those possibilities. A natural phenomenon that is not understood, or not well understood, may lead to the creation of monsters and fantastic beings. For the great majority of human history, it was not possible to stop or slow the moment of natural observation. It was impossible to freeze time or stop the motion of the observed animal, particularly if it moved quickly (both in the sea and on land) or was well camouflaged in its habitat, or under severe climatic or oceanographic conditions. A glimpse did not allow the capture of the full essence of the animal. The speed of events in nature overcame the mental record of the occurrence, especially if the animal or its environment were not known. It was easy to add a part of a fish to a whale or a mermaid's tale to a manatee or incorporate fins or limbs where they did not exist. However, in modern times, we also created monsters in the style of Mary Shelley's famous Victor Frankenstein. By putting together some parts, you create a whole. Yet, this whole, does not correspond to a real being.

In the European Renaissance, we find in Aldrovandi a person who excelled in creating manufactured beings; he sewed together different pieces of different animals into a whole that did not exist previously. He then exhibited his creations to the public and included them in his encyclopaedic treatises. He would follow his own inner orientations, as a great naturalist of his era who wished to include the entire natural knowledge of the world of that time in his well-publicised and widely disseminated work. But naturalists who followed similar procedures before him were also an inspiration to this author. The case of the winged dragon[30] is a paradigmatic example of a specimen created and assembled in the "laboratory," which was nothing more than a staged natural scam, for the sake of the educated audiences of 16th- and 17th-century Europe. In one of his volumes,[31] Aldrovandi described it as having been killed in 1572. It was a famous specimen and centrepiece of his natural history displays. Although many scientists considered that it could be one of the last examples of a Pterosaur,[32] it was in fact a fake specimen. It was just one of the many natural falsities that abounded in the cabinets of natural curiosities and aimed to draw people's attention to the strange productions of nature. In this set of false beings, we also find the equally famous "Jenny Haniver,"[33] a little, yet terribly monstrous sea-creature. Also called devilfish, representing a mermaid, a sea dragon, or demon, or, paradoxically, a marine angel, it was a modified and dried carcass of a streak, taking on a totally different, truly grotesque, and almost humanoid appearance. It appeared first in the Animal History of Konrad Gesner,[34] but the naturalist indicates that it is a transformed specimen and not a true sea monster. This animal is often associated with the marine monk, which is also described in the encyclopaedic treatises of this time and reproduced until the 19th century. Later, it was linked with the so-called Fiji mermaid,[35] one of the many myths of the Japanese millenary culture. Even today, "Jenny Haniver" is sold and exhibited in some parts of the world as having healing or magical properties.

30 Aldrovandi (1640), *Serpentum et Draconum Historiae Libri Duo*.

31 The Pterosaurs correspond to an extinct Order of enormous flying reptiles of the Mesozoic period.

32 Senter *et al.* (2014), *Investigation of claims of late-surviving pterosaurs.*

33 Grundhauser (2018), *The Long, Strange Legacy of One of the World's Earliest Fake Mermaids*.

34 Gesner (1558), *Historia Animalium Vol. IV.*

35 See the blog entry at Atlas Obscura '*Tenshou-Kyousha Shrine Mermaid Mummy*' https://www.atlasobscura.com/places/fujinomiya-mermaid-mummy (last accessed March 21, 2020).

Likewise, several mermaids were created. These beings, hybrids in their constitution as in their origin and symbolism, expanded from the printed, translated, and copied pages of European encyclopaedias to inhabit human minds and legends full of different types of marvels.[36] As with previous monsters, the certainty that they were not real prevailed most of the time; yet, they were flanked by sea creatures. Mermaids, newts, seafarers, sea monks, side by side with whales, sea cows, and sea lions, were grouped and described since the first Renaissance treatises.[37] The authors of natural history books of the 17th and 18th century – either naturalists and zoologists, or other practitioners such as cosmographers, travellers, settlers, and missionaries – continued describing while trying to understand and to categorise new, strange, and monstrous beings,[38] even after the taxonomic systematisation of living beings was formalised from the mid-18th century onwards.[39]

Mermaids, just like dragons, were part of the assets of the elites of European collectors and were also the result of the manipulation of different animals into one. Bodies and tails of several fish, heads, and limbs of monkeys or other terrestrial mammals, created the illusion of a marine human being, which was likely to live in coastal or oceanic waters, both in the nearest and the farthest ones. Aldrovandi reserved a privileged space in his tomes for mermaids and other fish (or monsters) with a human look. Just like other marine wonders, they were not only part of nature, they also transcended nature itself. Few authors distinguished the monstrous from the mundane, and, although sirens were often associated with supernatural creatures, such as whales,[40] their description would fit both the categories of marine animals and monsters or even mythological beings. Thus, mythological and real beings overlapped, the beautiful mermaid and the bestial manatee.[41] Both were sea monsters.

Mermaids inhabited the seas and oceans and, in the form of nereids or nymphs, also freshwater courses and springs. In the same way, they sprinkled sagas, epics, poems, literature, traditions, children's stories, leaflets, newspapers, art, sculpture, television, and cinema, crossing cultures and chronologies. Mermaids have been depicted and disseminated in all possible forms and continue to weather the erosion of time.

36 Amorim (1999), *Viagem e Mirabilia*, pp. 144–146.
37 Rondelet (1554), *Libri di Piscibus Marinis.*
38 Smith (2007), *On Toucans and Hornbills*, pp. 113–115.
39 Lineu (1939) [1758], *Systema Naturae.*
40 Szabo (2008), *Monstrous Fishes and the Mead-Dark Sea,* p. 26.
41 Brito (2018), *Op. Cit.*.

The same applies to mermaids with certain peculiarities, like those featuring a double tail. Double-tailed or bifurcated-tailed mermaids, whether with a single or double torso and head, are common, albeit strange. These representations appear recurrently, whether in sculptural forms or in decorated capitals in the European Romanesque style, in medieval European and Arab bestiaries and herbaria, or in classical and modern tiles, and Renaissance painting. We find them, for example, in the *Hortus Sanitatis* of 1497. In what was one of the most popular and influential herbaria of its time, we find representations and descriptions of living beings and their multiple applications, uses, and features. These incunabula are rich in images; each treatise begins with a dedicated and tailored frontispiece and each chapter is headed by a dedicated illustration. When published, it served as an encyclopaedia of all knowledge and folklore about plants, animals, and minerals, combining elements of natural history with subjects traditionally found in herbaria, and the description of numerous mythical creatures. The section on animals is especially interesting with a significant detail put into the description of several marine animals with the inclusion of numerous woodcuts. As in other works, of different periods, there is evidence in the discussions on these animals of confusion between the real and the imaginary realms. Real and mythological beings are treated equally in terms of their importance. Although this work has a clear naturalistic purpose, aiming at acquiring knowledge on life forms, and a practical and direct application to medicine, it also includes several events typical of medieval bestiaries. In these, features of living beings are attributed or compared to characteristics or traits of human features and personalities or associated with human values and behaviours.

The fish treatise in the *Hortus Sanitatis* opens with a frontispiece displaying a sea landscape and a vessel, two background figures, and visible in the water are fish, crabs, and sea monsters. In what concerns marine animals, as well as associated activities and practices, such as fishing, there are 94 entries and 106 woodcuts.[42] It is not possible to understand how many entries refer to marine mammals, yet there are several references to mermaids and other types of marine women and men, such as marine monks. Sea horses, sea cows, sea lions, sea wolves, seabirds, sea rabbits, and other sea creatures and monsters are equally present in written descriptions and images. References to sea unicorns

42 *Hortus Sanitatis* (1497). This same number of marine animals is repeated in subsequent editions and translations.

are also to be found, with a human representation similar to the *licorne*.[43] Many of these marine monsters with human features are later repeated in the *Palace of Animals*[44] and in Coenen's *Fish Book*[45] and *Whale Book*.[46] In addition to various types of mermaids or nereids being described as long-haired, human-like, sea monsters, it is further reported that when one of them is dying, she moans with a loud, clear human voice that can be heard from afar. This includes several double-tailed mermaids, whose iconography and properties are certainly already present in earlier works. This is particularly true in geographic and cartographic works on the North Sea, which served as a template and inspiration for later visual representations.

The double-tailed mermaid is undoubtedly a monstrous being. Not only because it is a marine hybrid (half fish and half woman), but mostly because it represents the duplication of the marine symbolism, the essence of the mirror, and of the lives facing each other. It has been profusely described and depicted in the early modern literature, bestiaries, and natural history treatises as in the iconography and cartography. Usually shown as a female form with one head and upper body and holding its two fish-like tails, it represented the epitome of nature's beautiful creations, but also its strangeness and hybridity. With virtues and sins, love and danger within the same body, it could be the reflection of the (dis)conformities of moral and human acts.[47]

Could some of these aquatic beings – real or not – have been inspired by animals from inner water bodies or the seas? The accounts of fantastic beings may be the result of misidentifications of animals sighted at sea, in different sea and climate conditions. Moreover, they can also find their source in strange and extremely rare natural events occurring anywhere in the world, from the open sea to nearby shores. If rarely seen and/or described, they were surely not known or understood. For instance, marine animals living in the depths and approaching either the sea surface or coastal areas

43 Image inspired in the tapestry 'Lady and Unicorn' in the Musée Cluny and present again, later, in the 16th century's manuscript of Alchimia, the 'Virgin of the Licorne'. See also Chevalier & Gheerbrant (1982), p. 408.

44 *The Palace of Animals* (*Der dieren palleys*) was printed in Brussels in 1520 and consists of a translation and compilation of *Hortus Sanitatis*. This work, in turn, was cited by several authors, for example Coenen (2003) [1585], *The Whale Book*, p. 42.

45 Adriaen Coenen's Fish Book (1580). A collection at The Public Domain Review. Check the link https://publicdomainreview.org/collections/adriaen-coenens-fish-book-1580/. Last accessed on August 2019.

46 Coenen (2003) [1585], *Op. Cit.*, pp. 115–139.

47 Brito (2019b), *Fantasy, Cryptozoology and/or Reality*, pp. 335–351.

could give space to the description of monstrosities or eccentricities from the sea, particularly if they were large animals such as large cetaceans or giant squids.[48] In the case of bifid mermaids, the physicality of their double fish tail can eventually be connected to the real, yet highly obscure occurrences of conjoined twins in sea animals.[49] Conjoined or Siamese twins have rarely been described in marine mammals but a couple of cases in cetaceans just came to light in recent years, such as the stranded calves of grey whales or the bottlenose dolphins. These are rare events worldwide, but then there are some rare or unusual occurrences of vagrant individuals that may give rise to surprise, or fear. Or, even if well known, animals spotted in extraordinary conditions – such as night-time, or during storms – may also allow speculation to gain ground on reality, and wrong impressions on certainty. When people are not clearly aware of what's out there, all possibilities can emerge.

So, could natural news coming to Europe from the tropical shores of Central and South Atlantic have contributed to adding some new elements, untold events, or different features and behaviours to animals already known? And what about the tropical marine and aquatic animals, seen and described by Europeans, branded into European treatises, encyclopaedias, and leaflets? Are they incorporated in the circles of science or are they forgotten? And did these publications and engravings include local natural knowledge of Indigenous groups and their expertise and relationships with water, oceans, and their animals? Let us look at the early modern Atlantic and the local and European encounters with strange or rare megafauna from the open oceans and coastal waters. Am I talking about animals? Or do I truly mean sea monsters?

Aquatic monsters are a common, rather frequent element in descriptions of journeys and natural life throughout the early modern maritime voyages across the Atlantic and the Indian Ocean. They are sighted on islands and on the shores of the North and South Atlantic Ocean ranging from East to West (Figure 10).

> It happened in Bahia, in the summer of the year 1584, where they call Tapuã, came a great figure of the sea making great noise from onwards

48 I discuss elsewhere that some of the historical documental and iconographic descriptions may have been the result of misinterpreted encounters with local (but rare) or exotic/tropical marine mammals, or even misconceptions of observations of real elements and events from the aquatic environments. In Brito (2019b) *Ibidem*, I showed some other examples from the documental and iconographic sources, while offering some possible sources for the evidence of double-tailed mermaids' descriptions and representations.

49 Brito (2019b).

> after the small fish that had been fleeing to the land, until it hit the dry; and as he came with great strength, he went ashore on the beach, from where he could not return to the sea because the tide was out and he lacked the water to swim…which fish did no one knew it's name, because there was no one among the Indians or Portuguese who knew how to say that he saw or heard that the sea cast another fish like this, which they greatly admired.[50]

Sometimes, their descriptions overlap with those of the fabulous, fantastic, and mythological tales of Antiquity and European mermaids; at other times, with Indigenous or local knowledge and ritual practices; and at others still, with those of new tropical marine life just starting to be discovered, described, and depicted by Europeans in new geographies overseas. They are sighted alongside other marine creatures and real marine animals, such as whales and manatees. And they are described in many treatises, histories, and bestiaries alongside diverse fauna and flora elements. In the modern age, sea monsters are part of nature and they are described and classified as such. They are viewed through the glass of empirical observation, detailed description, classification, and understanding of all forms of nature, but they do encompass local peoples' perceptions, uses, and practices. Even if written and presented to wider European audiences by the viewpoint of travelled naturalists and of eminent philosophers, they do incorporate their own locality and more-than-European reality.

Gândavo's sea monster takes its central role on this stage. The floor is now his.

First mentioned by Father José Anchieta,[51] it was fully described for the first time by Pero de Magalhães Gândavo,[52] who set the natural tone for the accounts, repetitions, and translations to come. The sea monster was something never seen before by the Portuguese settlers (Figure 9). For the *Tupi*-speaking groups it was considered a water devil, a rare monstrosity called *Igpupiara* in the native tongue. It reflected local fears and unknowns, and it incorporated – I assume – all different types of rarely seen aquatic monstrosities and frightening animals: large and rare marine mammals; eventually coastal sharks; large freshwater fish; and possibly

50 Sousa (1879) [1587], *Tratado Descriptivo do Brasil*, p. 255.

51 Anchieta (1812) [1560], *Epistola Quam Plurimarum Rerum Naturalium.*

52 Gândavo (1984) [1576], *História da Província de Santa Cruz a que Vulgarmente Chamamos Brasil.*

giant aquatic reptiles, such as alligators and snakes. According to recent discussions, Anchieta did not consider it a part of the natural world, but rather a devil's appearance based on the stories of the local peoples at the location S. Vicente.[53] After him, the descriptions are diverse and, even if fundamentally the same, they may imply different meanings for the *Igpupiara*. The authors discuss that most of the descriptions of the *Igpupiara*, or the sea monster of S. Vicente, reveal many attitudes different from the European one in relation to the colonisation of the Americas. This means that their look at nature aims at its exploitation as well as the dominance and appropriation of local resources, of the Indigenous peoples and their culture.[54]

Following Anchieta, different authors, including Gândavo, describe this demon from the water alongside alligators and caimans, followed by sharks and other large aquatic animals, giving the reader the clear feeling that they are addressing a totally different category of beings from nature. These beings were real, in the sense that they did interact with people, local people mostly, but could nevertheless be a symbolic entity. They might kill men and women, but many would haunt fishermen and seafood gatherers, who, in awe, would not fish for days, even if they survived an attack.[55] *Igpupiara* or (*H*)*upupiara* was a category that included the ghost of the waters, or a water devil, the marine man; the creature whose fatal embrace would take any living soul under the waters, whatever animal or spirit it could be.

> There are also, in the rivers, other ghosts, called *ipupiara*, that is, that live in the water, that kill the Indians just the same. Not far away from us there is a river inhabited by Christians, and that the Indians crossed once in small canoes, which they make of a single trunk or of cork, where they were often drowned by them, before the Christians moved there.[56]

> These seamen are called *Igpupiara* in their language; they terrify the natives so much that many die just with the thought of them; and no one who sees them is spared; some died already, and, when asked about the cause, they referred they had seen the monster; they look like men

53 Camenietzki & Zeron (2000), *Quem Conta um Conto Aumenta um Ponto*, p. 114.
54 Camenietzki & Zeron (2000), p. 114.
55 Sousa (1879) [1587], p. 256.
56 Anchieta (1812) [1560], p. 162.

> of good stature, but their eyes are very blurred. The females look like women, have long hair, and are beautiful; these monsters are found in the bars of freshwater rivers.[57]

Usually, dangerous animals such as sharks and rays, and other large fish, or even large reptiles, or animals of "notable size," such as dolphins and whales, sea turtles, seals and sea lions, or sea cows, are given some space in the books of different authors. These first-hand accounts, based on encounters of events of observation, were common and reply and comment on, or add information to previous stories, either written or in oral formats.

The *hombre marino*[58] are marine men present in many narratives of the Iberian Americas since early settlement, like many other sea monsters – animals that we cannot easily identify today (Figure 11). They must also have been part of the (daily) life of, and of the contact with the aquatic bodies and its animals by natives, as they are usually referred to as being known by coastal groups of Native Americans with local words currently in use. These marine men were monstrous due to their impact on human lives – they seemed to be hungry dangerous sea monsters – and to the perils they posed and constraints they imposed on the use of the aquatic environment by the people.

> Sea monsters have been going out to the coast, they belong to a species that we had never heard of before or after that, in any other part of the world. Those Discoverers of Brazil saw the first, which we referred already, on the beaches of Porto Seguro: and after them so many have been seen, and of such monstrous species that they would require a very large treatise. I saw great limpets from the men fish and the women fish by the sea, full of bones from the dead, and their captives, which were the same as men and women, apart from a hole in the head, through which they say they breathe.[59]

Leon Pinelo mentions that "there is no lack of evidence that in the Seas of the New World the Tritons are found, marine men of which so many fables the Poets write about."[60] Joseph Sanchéz Labrador, a local naturalist from

57 Cardim (1925), pp. 89–90.
58 Pinelo (1943), *El Paraiso en el Nuevo Mundo*.
59 Vasconcellos (1668), *Noticias Curiosas, e Necessarias das Cousas do Brasil*, pp. 279–280.
60 Pinelo (1943), p. 117.

South America, states in his book that "*hombres marinos y del agua*...[*y*] *mujeres marinas*" are seen in the River Paraná, and Uruguay and Paraguay, as well as in many other close and distant seas. People from the Guarani nation tell how they were caught in the waters and were considered things of astonishment – they called them *Tupoyyara* – and the author says that they are like the *Ypapapia* from Brazil.[61]

All these tritons have a human face and upper body, they come to the surface, either to breathe or to spy, and the lower part of their body is dolphin-like or fish-like. Humans' reactions to their sightings are similar – surprise, astonishment, and fear. They are seen by the Portuguese and Spaniards in many parts of the central and south Americas, both in islands, the open sea and in the shores (Figure 10). Europeans sometimes get confused, as if these creatures are tritons and mermaids or real marine animals, but for most local peoples, whether real or not, these beings seem to have a symbolic meaning. It would be possible to include not just an animal but all typologies of fantastic and mythological creatures under *Igpupiara*. Nevertheless, for both locals and foreigners, they look alike and have a kind of human way of understanding their surroundings. They are thinking creatures – creatures that follow boats, that look around them, that have some specific human-like behaviours. According to Leon Pinelo, this sea monster is "looking at people as if it has understanding."[62] And this may eventually be their only "human" feature, which is then shaped into their physical features. Their monstrosity may lie in the fact that these sea animals are showing human characteristics and behaviours, as we can read in this following quotation in Pinelo where he cites Pedro Mártir de Angliera.

> Pedro Martir says that in the Araya Coast, certain Spanish navigating saw on the water a figure with human head, very full of beard and neat beard: surprised those on the Ship yelled at it, and the frightened animal submerged, uncovering part of the middle lower body that was of a fish, and so big that it left the Sea troubled for a long time. In Cubagua Island another similar Monster was then seen. Juan Lerio Burgundo but the date is wrong; he did not see it himself but was told by a savage; of whose account he doubts very much because he says that in all the time that he

61 Lavilla & Wilde (2020), *Los Anfibios y Reptiles de El Paraguay Natural Ilustrado de Joseph Sánchez Labrador*, pp. 188–190.
62 Pinelo (1943), p. 118.

> navigated he did not see a triton nor siren nor anything like it. He refers that sailing in a boat on the coast of Brazil out of the water came a hand that seized the boat either to or to jump inside, which he saw and with the sword that he carried he cut that hand that fell inside the boat, and had five fingers almost as a man's, and that in a short time and distance, they saw a figure with human face on the water complaining; and the Author leaves to the judgement of others, if that was Triton Sirena, or Ximio Marino.[63]

Leon Pinelo was a scholar of his time, well acquainted with all the authors for the Americas, such as Francisco Hernandez, as well as with the European naturalists. In fact, he cites them all, ranging from Oviedo to Aldrovandi. His work compiles the coeval "state-of-the-art" for the marine creatures that we are discussing here – his treatise is limited to the rare, singular, and strange animals, those outside the realm of the common. As far as he is concerned, if there are tritons or marine men then, of course, there are mermaids out there in the ocean. And he elaborates on mermaids and tritons, known as anthropomorphic fishes by different authors.[64] To this end, he mentions the creatures with a human figure spotted rising out of the sea near Colon, as well as the mermaids or sirens spotted off Virginia – a kind of sea monster with blue hair falling down its back. The human form is always described, despite the hybridity of such ocean monsters, and even when the features of the animals may be different here and there, they do resemble humans, both male and female. Could the mammals that were spotted by the sailors and explorers look directly into their eyes, and did this experience give them a sense that these animals had human qualities? Or could their behaviour – swimming together, staying by the side of calves, sleeping on the surface or the beach sands, spying out of the water and looking around – resemble human traits and ways of being? Either way, such monsters were commonly imbued with humanity.

And among all those that we have mentioned here, Pinelo offers a copy of Gândavo's description and depiction of the sea monster in which human physical characteristics can also be found.[65] Gândavo's account of the S. Vicente sea monster reads as if local people may have already been in contact

63 Pinelo (1943), pp. 117–118.
64 Landrin (1870), *Les Monstres Marins*, p. 272.
65 Brito (2016), *New Science from Old News*.

with monsters, such as the *Igpupiara*.[66] Despite this, they seem to be rare, as people were not really familiar with them.[67]

These monsters are sometimes found alongside really frightening, physically dangerous, and potentially lethal animals from the sea and other water bodies (Figure 12). Since time immemorial, sharks have been the scariest fish of all. Sharks and their ferocity towards people provide a very good example of long-lasting negative perceptions about a large marine animal, as well as of the reluctance among people to shift their attitude about them (Figure 13). The persistent human fear of sharks can be traced in European documental sources to, at least, the 16th and 17th centuries, in descriptions of a large beast found in the open sea during oceanic journeys:

> There are many kinds of sharks…it is a cruel and ferocious fish, and it kills many people.[68] The Saylers tooke a Shark, a man-eating Monster.[69]

If the Spaniards could catch sharks during maritime travelling – "some sailors eat happily this monster's flesh"[70] – it is said that the Portuguese did not usually use them as a food item, except if in great need; at least, not those large sharks that were not very familiar to them. Sharks induced mostly fear in sea people and there are numerous accounts of sharks taking men who fell overboard while navigating. This tricky, dangerous, sometimes mortal, relationship between people and sharks is evoked time and time again.[71] And sharks have elicited fear, as well surprise, in Europeans and

66 "*Hanse visto algunos como este, aunque raras veces. Fr. Juan de los Santos dice que vio uno muerto en la Cafreria, que se diferencia mui poco; y segun led escrive devia ser el macho, y este seria la Hembra*." Pinelo (1943), p. 116.

67 Coeval narratives mention that they are not sharks, due to the type of attack: "There are also sea men, who have already been seen coming out of the water after the Indians, and some of them, who have been fishing, died in there, but they just eat their eyes and nose, from which we know that they were not sharks. There are many in this sea that eats legs and arms, and all flesh" (Salvador (1889) [1627], p. 21). However, descriptions do vary sufficiently from one another for us to consider that different types of animals can be causing these injuries and attacks.

68 Cardim (1583–1601).

69 Herbert (1634), *A Description of the Persian Monarchy*.

70 Bru de Ramon (2015) [1784], *Colección de Láminas que Representam los Animales y Monstruos*, II, p. 68.

71 One example is *The Journal of Edward Barlow*, Barlow (1656–1703), in which the author, who is familiar with the tropics and all its strange happenings, still describes shark attacks, monstrous and large animals, and a monstrous baby being born aboard a ship, among other eccentricities. In the *Périple de Beauchesne à la Terre de Feu* (1698–1701), the author also describes sharks as a most dangerous fish of the ocean; see Duplessis (2003).

Indigenous people alike. However, some African individuals or those from Native American groups were said to be exceptionally good and fierce swimmers, sometimes fighting and even killing sharks with a simple knife.[72]

> The Shark…is an extraordinary ravenous creature.[73] The Shark, whereof there are two sorts…both these are very large, bold, voracious and dangerous fishes, especially to those that have had the misfortune to fall over board. It is reported, that they will follow Ships for hours together, and if either Man or Dog, or any other living Animal happen to fall into the Watery they immediately seize and snap in two, having exceeding sharp, and several rows of teeth in their heads.[74]

When Europeans settled in the Americas, different species of sharks started to be captured, mainly as a food resource, but sometimes simply out of sheer fear or even surprise.

> On the same day our sailors took a shark that had not left the vessel for two or three days; it was difficult to get it on board, it was more than ten feet long; it is the same fish that we call in La Rochelle a sea dog, but the ones I had seen were no more than two feet long; its skin is rough when dry…it is armed with three rows of strong, sharp, pointed teeth; it is a voracious animal, daring and dangerous…we found in its womb everything we have thrown overboard since he accompanied us….[75]

For this period, anyone dealing with sharks usually placed together with caimans and sea serpent-like animals (Figure 14) in terms of their ferocity. And many of the "marine men" described as ferocious animals, biting and ripping off parts of peoples' bodies, or even embracing them in an underwater dive, may possibly be one of these aquatic animals. Caimans or alligators could be described as ferocious and having many and strong teeth with which they could shatter everything that came their way. Amerindians are described and depicted[76] as having the ability to push a pole into the mouths of large crocodiles or alligators. It is not clear, however, if this is a hunting or defensive technique. On the other hand, we also find descriptions

72 Brickell (1743), *The Natural History of North-Carolina*.

73 Barbot (1732), *A Description of the Coasts of North and South-Guinea.*

74 Brickell (1743).

75 Labat (1722), *Nouveau Voyage aux Isles de l'Amerique*.

76 Francisci (1688), *Erasmi Francisci Ost-und West-Indischer Wie Auch Sinesischer Lust-und Stats-Garden*, plate 1, following p. 130. https://jcb.lunaimaging.com/luna/servlet/s/6z818y

mentioning that the "*jacare*" does not harm humans and that it is easy to capture.[77]

> The Jacare Lizards are of a notable greatnesse, and some are as bigge as Dogges, their snowt is like a Dogge, and so have they their Teeth verie long, they have over all the bodie certaine plates like an armed Horse, and when they arme themselves, there is no Arrow can pierce them, they are painted of divers colours, they doe no hurt to the people, but rather they take them easily with Snares, some have beene taken of fifteene quarters (or spans) long, and the Indians esteeme them much, and hold them for estate as the Rimbabas, that is, Dogges, or any other thing of estate.[78]

Europeans believed that American fauna comprised unlimited bounty but could, simultaneously, be dangerous if not controlled. The same way the caiman could easily kill a human, any other element of American fauna could punish the unwary. People were being alerted to pay attention to nature and its dangers, while being reassured that those dangers could be tamed. To do so, and to try to triumph in the Americas, the newcomers recognised that they would need to rely on and to acquire knowledge of the natives. This new local information about local fauna, resources, and how to use and explore them was crucial for the settlers' success and thus it was constantly sought after.[79]

Like caimans and alligators (Figure 15), sharks and manatees are continuously observed and described and (re)signified in a similar way by different naturalists, humanists, and missionaries, even if there is a large gap between publications. Unpredictability and fear are a constant in the case of sharks and caimans – the latter a very fast animal[80] that could kill quickly[81] – but less so with respect to manatees (or sea monsters). Naturalistic curiosity, utilitarian interest, and commercial value appear across the descriptive passages about manatees.[82]

Feared by Indigenous peoples and Europeans alike, there are many interactions described between sharks and local people in different regions

77 Cardim (1925), pp. 101–102.

78 Purchas (1625–1626), *Hakluytus Posthumus, or Purchas His Pilgrims Containing a History of the World*, pp. 497–498.

79 Mancall (2018), *Nature and Culture in the Early Modern Atlantic*, pp. 80–81.

80 Bru de Ramon (2015) [1784], II, p. 75.

81 Mancall (2018).

82 Brito (2019c), *People, Manatees and the Aquatic Environment in Early Modern Americas*.

of the Atlantic.[83] As Bru de Ramon mentions it could be found in the riverine waters of Amazonia and Africa, but also in those of Ceylon and the Philippine Islands.

> Despite its fierceness, there are some Blacks so daring, that without further arm nor defence than a piece of curved wood dare to take them on, introducing it in their mouth and keeping it inside the sea or river water; and since this animal has no tongue it cannot but drink water until it drowns; and they quickly get it on land.[84]

In the case of sharks, we also find examples of fearless or Indigenous individuals who could hunt them or swim across the waters full of these "man-eating monsters," which were easily defined as a "*very voracious, astute, and human flesh lover.*"[85] A good example is the hammer-head shark, known by the Spaniards as *Martillo de Mar* and by the local Amerindians as *Zigena*.

> The sailors fear very much the encounter with this fish, which is a kind of dog or cat of the sea. It is voracious, and is found normally near the coasts of Africa. Its head, which is flat, extends to both sides, and represents a hammer…Despite its fierceness the Blacks chase them in the water, and they are skilled in killing them.[86]

The relationships between peoples and these ferocious marine monsters represent individual perceptions and even local expertise, but also the way different societies perceive and experience the ocean and their animals. Sailors coming from Europe to the new grounds, where new and different fish were larger and more abundant, could not easily relate to them and, in the presence of potential danger, avoided them. Historically, and until recent times – not to say the current day – there has been a stigma in relation to sharks as a group. It arises from the fact that "the word Shark

83 We find written as well as iconographic evidence of these humans–sharks relationships in the sources. For instance, a sea monster (possibly a shark) larger than an island is described off the Azores archipelago; and the shark fish as a voracious shark eating a man is also included in Herbert (1634), "*A Description of the Persian Monarchy.*" Gallica, France National Library. In the permalinks http://gallica.bnf.fr/ark:/12148/btv1b2300763h and http://gallica.bnf.fr/ark:/12148/btv1b2300763h, respectively.

84 Bru de Ramon (2015) [1784], II, p. 76.

85 Bru de Ramon (2015) [1784], p. 67.

86 Bru de Ramon (2015) [1784], p. 53.

has become a synonym for a murderous thief, a creature without feeling or honour or repentance."[87] In the early 20th century, Frank Bullen admits that sharks have always been pursued, mostly out of ignorance, and that some truth needs to be reset; even though they may not be beautiful, they are "wonderful creatures of the deep sea."[88]

There has always been a disproportionate human reaction to man-eating sharks described in historical and recent literature. A single man-eating shark is enough to trigger panic, despite the infrequency of such attacks and even though it is human agency that has turned many sharks into endangered species.[89] Recently, biologists, conservationists, and scholars of nature have been attempting to change the way people see sharks, and thus are trying to change negative actions that are perpetuated upon them,[90] as well adding shark species to international conservation lists.[91] It seems obvious, now, that knowledge about a certain marine species brings people closer to it and makes them less fearful. This produces positive – or at least, not so harmful – actions on the part of individuals, populations, and their habits. Equally, over time, local and traditional knowledge on natural environments and their habitants has resulted in different perceptions and practices relating to some animals.

Shark attacks seem to spark deep-rooted fears about being at the mercy of forces beyond human control.[92] They fill a position in the relationships of marine animals with humans that is quite unique; sharks and humans occupy and explore the same marine environments and their active roles as predator and prey are interchangeable. When people are familiar with their environs – particularly in non-Westernised societies – they may feel more at ease in the presence of such animals.

In the early modern coastal regions of the Southeast Atlantic, Amerindian societies were very much familiar with their own natural reality – in which they lived and on which they depended – and exhibited different behaviours and actions towards sharks and other potentially dangerous animals. Despite fearing some such animals, they could be more adventurous or possibly more trustful of their own abilities to surpass, defeat, or capture such dangerous beasts. They could capture or hunt them as food or medicinal items, or as a display of courage, bravery, and dominance over

87 Bullen (1909), *Creatures of the Sea*, pp. 97–98.
88 Bullen (1909), pp. 97–98.
89 Kluwick (2015), *Food for Sharks*, pp. 139–140.
90 E.g., Martin (2011), *When Sharks Don't Attack*.
91 Kluwick (2015), p. 140.
92 Kluwick (2015), p. 140.

the environment. This is the case for the animals under discussion here, but also for many other dangerous and frightening animals, such as large snakes (Figure 14). For instance, the large *cucurijuba* snake, the *curucucu* snake, or the *giboya* are described as animals of great size and strength; nonetheless, they were captured by local people.[93] The traditional and empirical knowledge gathered by local populations in their daily contact with their natural surroundings gives them a more realistic impression of animals' habitats and behaviours.

This, of course, could lead to a higher and more realistic perception of these kinds of animals and how to deal with them. The experience of living in a certain environment gives local peoples the much-needed know-how to survive based on trial and error, and the process of learning through oral tradition. Let us also not forget that, in the case of aquatic animals, any of the Africans and Amerindians living by the sea or other water bodies would have a deep experience of swimming and survival in these aquatic environments. This is quite contrary to the arriving European explorers and settlers, who did not master the local environment. As we know, and will discuss later, Indigenous expertise proved essential in the Europeans' access to local resources and local methods of exploitation across different tropical regions, and with respect to the possibilities of gaining control over different regions in the Americas.[94] The continued capturing, utilization, and commodification of previously unknown animals was only possible due to the good/forced will of Indigenous people. Europeans soon realised that they depended on understanding nature[95] – both physically and conceptually.

Even though there were different ways of perceiving and relating to these sea monsters, we find many similarities between peoples from different cultures and realities when addressing and dealing with the rare, unknown, or strange monstrosities of nature. In our example, if it was neither a shark nor a caiman – I will get there, eventually – the Gândavo sea monster truly frightened people, locals and foreigners alike; it was huge, dangerous, and scary. And it is referred to by Leon de Pinelo, while citing Gândavo, in a good example in the written sources of previous authorship identification and of the coeval relevance of continuing to communicate the fantastic event to different audiences and in different languages.

93 Purchas (1625–1626), pp. 1303–1304, 1317–1318.
94 Mancall (2018), pp. 81–84.
95 Mancall (2018), pp. 81–84.

> Singular and wonder sea Monster among many who have been in the Sea, and even on Land, was the one seen at the Captaincy of San Vicente of Brazil in the year 1564, as referred by Pedro de Magallanes Gandavv: one night an Indian woman went to the Beach, and saw a figure that terrified her, and moreover with the bellows or hoarse howls that it did, went back to warn her Master who was Balthasar Ferreyra, sun of the Captain major: who having sent her back to recognise what she was saying, and her making sure that it was something big, left his house in his shirt with only his sword, believing that it was some Tiger, the animal of the Mountain, and so he went where the figure was, which, acknowledging him, kept going toward the Sea: the Lad (who given the action must have had good bravery) when recognizing the monstrosity of the figure, to prevent it from entering the water, ran and stepped in front of it: The Monster finding itself intercepted rose up on the fins of his tail to attack the man, who lightly pierced his belly with the sword, and stepped to one side, because the Fish threw itself to fall on top of him, but the coup was in vain, and it felt on land, losing much blood from its wound that reached the Lad in the face, and almost blinded him and left him unconscious; but quickly regaining his senses and seeing that the animal came to hit him again with teeth and nails, he stabbed it in the head stunning it and forced it to give up on its revenge, by seeking only to escape to the Sea. The Indian who saw the fight, given that she could not, dared not, help her Master had convoked some Slaves with her screams, who arriving with sticks and other guns and finding the Monster already weakened and almost surrendered due to the bleeding from the two wounds; they ended killing him: and the brave boy remained without breath due to the event, so that for a while could not speak nor come to his senses: it was this fifteen-palms width wild Animal, the *Hipupiará* Naturals call it the equivalent of water Demon, and it suits it, because its fierce appearance does not deserve another name; for lack of description and for being so solitary, and because I have not seen it drawn, nor its news in another Author, and not finding easily those who do, which is all this relation, to satisfy the curious ones its Print has been copied here, which is this.[96]

This description refers to the moment when the son of Baltasar Ferreira killed a terrible sea monster on the coast of São Vicente (currently Santos in the state of São Paulo, Brazil) in 1564.[97] The written description in both

96 Pinelo (1943), p. 115.
97 Brito (2016), p. 45.

Gândavo and Pinelo is accompanied by an illustration of the sea monster, albeit they are slightly different. The story was repeated several times but may very well be itself a copy, as Gândavo's story is also likely second-hand or hearsay. The first account of such a sea monster is found in Brochado's *Primavera dos Mininos*, where the author mentions that illustrations of it with a written caption were sold in Lisbon, possibly as handout leaflets.

> And now in our times we have well seen the portrait of the monster that was killed somewhere in Brazil, which is very unsightly as can be seen in its painting & the its content is such as it is written & printed close to such picture of which many were sold at the door of santa misericordia of the city [of] Lisbon. In the lands of Brazil was found by one Antonio Ferreyra a Portuguese outcast there from Lisbon, a monster of amazing appearance 16 feet long & 6 wide the head and snout as a bearded dog & different teeth, the breasts & women-like arms & the large belly & white with no hair, and in it had a male nature on the belly button part & below a woman's nature had a man's legs & wide feet like a duck & the fingernails of a dog, was killed by this men in the month of April 1565, in the island of sam Vicente along the sea.[98]

Following Gândavo,[99] it was retold by several other Portuguese chroniclers of Atlantic natural history, such as Father Vicente do Salvador, who briefly described a sea monster that landed on a beach.[100] Moreover, it was translated and commented on by different European authors from different nations and languages. Several authors were responsible for this type of empirical gathering and compiling of Atlantic information, such as Fernão Cardim,[101] Gabriel Soares de Sousa,[102] and Vicente Salvador.[103] These Portuguese humanists and explorers contributed to European knowledge about America and, to some extent, to the development of communication between the two continents. This American sea monster shows us that this story and the specimen portrayed in images, and the circulation of associated knowledge and dissemination (from local sources of information to European circles of natural history), were possible. We find it in

98 Brochado (1569), *Obra Chamada Primavera dos Mininos*, pp. 7–8.
99 Gândavo (1984) [1576].
100 Salvador (1889) [1627], *História do Brasil*, pp. 21–22; discussed in Brito (2016), p. 47.
101 Cardim (1925).
102 Sousa (1989) [1587], *Notícia do Brasil*.
103 Salvador (1889) [1627], *História do Brasil*.

Ulisses Aldrovandi, Adriaen Coenen,[104] Athanasius Kircher, and Caspar Schott,[105] among others. And it shows the coeval interest, translations, and analyses made by different naturalists and scholars, as well as the interest of audiences across Europe. This is an interest that is a product of the European Renaissance, but also of the knowledge being gathered across the globe and transferred using the networks of commerce newly established. And under the many stimuli of these times, men were incited to study and understand natural history – real and elements of nature, but also curiosities and eccentricities – with an unprecedented enthusiasm and fervour.[106]

The 16th-century surge in the popularity of news-oriented broadsheets and pamphlets was made possible by thriving systems of communication along Europe-wide trade networks. Along with financial and commercial correspondence, handwritten news reports on a broad range of topics – which included curiosities, calamities, and wonders – were sent and received. Wonders were also transmitted via traditional letter correspondence, for example, among humanists, naturalists, and clerics, and thus were communicated to spheres of societies outside the realm of commerce.[107] Of those, natural history and philosophy were the most important. The case of the whale stranded in Lisbon, Portugal, in 1531, represents an example of news transmitted along European commercial routes. The reports tell of a whale sighted in the Tagus River followed by bloody and fiery signs in the heavens, a rain of blood, and a devastating earthquake, to cite a written communication from Portugal – possibly a handwritten newspaper or a simple letter. This case demonstrates how information that was originally carried along paths of communication established to serve commerce ultimately shaped contents and new information in different social circles.[108]

European authors, whether explorers, settlers, or missionaries travelling the Atlantic and experiencing nature with their own eyes, or naturalists sitting in their cabinets of curiosities and removed from the tropical exuberance of the South Atlantic, were all interested in the full possibilities that this part of the world could offer. This was either from the viewpoint of natural history and philosophy, or the viewpoint of resources' exploitation

104 We find entries for the sea monster in his 1580 *Fish Book* and later in *The Whale Book*, Coenen (2003) [1585].

105 Schott (1662), *Physica Curiosa.*

106 Gudger (1934), *The Five Great Naturalists of the Sixteenth Century*, pp. 21–24.

107 Waterman (2017), *Miraculous Signs from Antiquity to the Renaissance*, p. 18.

108 Waterman (2017), p. 18; Brito (2016); Brito (2019a), *The Voice of Skogula in Beasts Royal.*

– and one might not exclude the other. One European writer after another wrote and published about the Americas as containing a bounty that many could not have imagined existed. However, this unlimited nature could also be dangerous without controlled use or proper local knowledge.[109] This fuelled interest due to potential economic prospects, but also the imagination. Sea monsters, especially those located in distant parts, symbolised all the exoticism of such continents and the abundance that could be found there.

Sea monsters populated the real days of those living in the tropical regions and of those that could hear, read, and learn about them from a safe distance.

After discussing it in my previous book, I was able to find it once more in Erasmus Francisci's book, which recounts a conversation among several individuals with different interventions. The dialogue extends for several pages and, at a certain moment, goes on to discuss the sightings of a sea creature, a seaman, or a sea wonder. This is accompanied by an illustration with the caption "men of the sea captured in Brazil."[110]

The description indicates that those involved in this story – European, of course – are on a journey and look up to the sky around them and to the sea to feast their eyes on their surroundings. One of the travellers asks about the men of the sea, more specifically if his companion has seen some of these marine men upon his stay in America. To this he replies that he has seen them on the coasts of Brazil more than once, especially some seven or eight miles from Bahia (on the Day of the Dead, 1 November) and also in Porto Seguro. He tells him that they are called *Ipupiara* (*Yupiapra*) by the Brazilian natives. Their face and appearance are like those of a human being and some of them, particularly the females, have long and beautiful hair and a delicate figure. He goes on to say that if they get close to a man they can take him in their arms and squeeze him so much that they can suffocate him. However, this does not happen out of bad instinct, but rather due to their incredible friendliness; these men of the sea are not aware of their strength. The creature is, no doubt, a wonder of the sea. Those involved in the discussion believed that the "sea men" are an allegory of human and mundane vanity.[111]

Like a mirror of human reality that is found hidden under the surface of appearances, these hybrid beings of the sea reflect the essence of being human and of deep human feelings – those that cannot (or must not) be

109 Mancall (2018), pp. 62–63, 75–80.
110 Francisci (1688), pp. 1412–1418.
111 Francisci (1688), p. 1413.

revealed. In a European matrix of the modern period, marked by Catholic religion and the respect and duty before God and the King, it is normal that one sees obscure elements and hidden, or unspoken aspects in what is not fully comprehended. In a highly structured and hierarchical vision of the world, in which there is no interrelation among people and the natural world, strange animals are symbols of evil and of human sins. In this perspective, the nonhuman world is removed from the earthly reality of people.

The dialogue continues with one of its participants saying how it is often heard that human bodies thrown into the sea arrive on land without eyes and noses, and with no fingers, and thus we may assume that these creatures of the sea did their work. They question whether the person is killed and taken to deep waters. However, they add that this is more likely to be the work of sea birds than these marine creatures. The conversation proceeds, indicating voyages near Brazil during which several merchants of the Dutch West Indian Company caught one of these marine men and sent it to Leiden where it was opened and dissected. There, it was observed that the head and chest, up to the belly button, seemed very human, but that from there down to the feet it had no shape, not even a tail shape. They continue by saying that it must be the same "Siren" that another famous anatomist had dissected and described, because its hands had five fingers with several joints like our human ones, but they are thicker and longer and the fingers have skin that keep them together. The ribs are almost human, but three times bigger and thicker. The image that accompanies the text shows these body parts of the alleged marine man, which may also be a mermaid: the external anatomy, the hand and the rib. The illustrated "Siren,"" probably the being that was dissected, no doubt the mermaid that was found and sent to Europe, could also be an unsightly or "monstrous" human. There are no longer any visible elements of a direct comparison to a marine animal. Perhaps it was a human being with malformations, those "monsters" that were also frequently portrayed, described, and disclosed in European natural history circles,[112] as exotic as the most tropical of animals. A similar monster – but here, no doubt, referred to as a human monstrosity – appears in Adriaen Coenen's *Fish Book*, which also features the Gândavo monster. Large parts of this eclectic and detailed book are dedicated to reports of strange mythical sightings of creatures, such as the "zeebisschop" – a creature described as possessing a hat, a wand, slippers, a chasuble, and gloves – or a seventeen-foot-long

112 E.g., Costa (Ed.) (2005), *O Corpo Insólito*; Costa (2004), *Between Fact and Fiction: Narratives of Monsters in Eighteenth-Century Portugal*.

sea monster (f52v) seen on the Brazilian coast in 1564 standing on its hind flippers.[113]

The intervention described here is the dissection or "autopsy" – in the sense of something seen with one's own eyes – by the Dutch doctor Pieter Pauw to whom Johannes de Laet, director of the Dutch West India Company in Amsterdam, had offered a specimen of a marine monster captured by sailors of the company in Brazil at the beginning of the 17th century. This doctor may have dissected said monster in Leiden, a fact that was narrated by Thomas Bartholin in the mid-17th century.[114] The latter possessed in his office the rib and hand of the monstrous animal, whose illustrations we also find reproduced in the aforementioned work. Indeed, both illustrations are very similar. We find another visual representation with close resemblance to the previous, although here we do not dwell on it in detail. Although its origin is unclear, it is no doubt a marine monster. This reinforces the importance of such encounters and representations for a Renaissance construction of science and natural history that was increasingly inclusive, in terms of the biogeographic spaces of the portrayed fauna, as much as in terms of the several productions of nature. Similar representations of monstrous animals from the sea recur in multiple European productions of natural history, text and illustrations running side by side, ensuring that the reality of these beasts is comprehensible to audiences. In a 17th-century manuscript of a world voyager[115] we find a description of a mermaid (a manatee or *meerminne*) also called woman of the water or girl of the sea. In the plate, we see a human torso, a head with no hair, and the bottom of a fish, the full body covered in fish scales. Alongside it are another strange monster from the sea ('*krake*?'), possibly a giant squid, and a quadruped, maybe a hippo, or could this be the representation of the manatee? Confusion prevails.

Returning to our previous account, another interlocutor in the speech, at another point, affirms having seen somewhere in New England a being similar to the one being discussed. He mentions that, in 1610, the captain saw a marine man, on the first morning, a real wonder creature from the sea, which swam very quickly in his direction. Its figure was very beautiful, and every part of its face looked like a virgin's, with turquoise blue hair that fell below the shoulders. It appeared and disappeared and could be seen

113 Adriaen Coenen's *Fish Book* (1580) A collection at The Public Domain Review. https://publicdomainreview.org/collections/adriaen-coenens-fish-book-1580/.

114 Leite (2014), *Animalia Exotica & Mirabilia*, p. 65.

115 Müller (1646–1723), *Der "Indianer" Im Kloster St. Gallen*, p. 33.

at a distance and had the appearance of a person from head to waist.[116] This description is also accompanied by an image, and here a "true" siren is represented just as we would be able to conceive and identify nowadays; the feminine and human appearance of the upper body with its long hair, and the lower part of a fish or cetaceous.

The participants continue their conversation discussing that these sea creatures are found and captured not only in these parts of the world (West Indies), but also in many eastern islands. The inhabitants of the Philippine islands[117] call it *Duyon* and the Portuguese call it woman-fish (*pecce muller*). This creature, which is half human, half fish, has a round head stuck to the shoulders with no neck. It also has ears like humans but with very delicate lobes. It has equally delicate brows that are well placed on the face; they are effectively more human than fish.[118]

All these perspectives result from a foreigner's gaze, which hovers over the marine environment and its living beings, more real in some cases, more imaginary in others. Here, we find a small indication that some of the biological and behavioural information on animals, or also on the local uses given to these beings, results from direct contact with native people and their perspective on the occurrence and utility of nature. In the case of these fish women, be it a monstrous human being or an animal of the worldly seas, it is said that they are particularly sought after, given that the legs of these creatures (these fish) are powerful and can stop bleeding if placed over a wound.[119]

Let us pay attention to the animal itself. In this last case, they are almost certainly referring to dugongs, also frequently mentioned and described by Portuguese and Spanish authors with respect to the Indian Ocean and the Indo-Pacific, the apparent historic and current areas of distribution of this siren. In previous descriptions, there remains doubt about which animal may be at the origin of this marine-man, simultaneously beautiful and scary, attractive and dangerous. It may be a seal or sea lion, or any other animal, but it seems to me that it is associated with our original narrative of the *Igpupiara*.

Gândavo, as well as other authors, is thought to have followed the Amerindians' belief in the existence of "sea demons" or ghosts. Even though local

116 Leite (2014).

117 In his text, the author says that these are the same marine monsters mentioned by Athanasius Kircher with respect to the Philippines, and that the latter also calls them a kind of mermaid. Francisci (1688), p. 1414.

118 Francisci (1688), p. 1413.

119 Francisci (1688), p. 1414.

people used some large marine animals as a food source (e.g., manatees, river and marine fish, turtles), several other animals – particularly those potentially dangerous to humans – were considered monsters from nature. The Portuguese were not always true to endemic themes, but this belief in sea demons was assimilated and is sometimes flagrant in their descriptions of fauna. Usually, pragmatism takes over local traditions and imagination, but, from this time onwards, Indigenous stories about nature, although facing Classical European notions, began to be systematised.[120]

> There are also, because there's no lack of fables, near Cubagua fish that from the waist up resemble men in the beards and hair and arms.[121]

> There are [in Rio de la Plata] hog fish and men fish, very similar in whole to the human body.[122]

The Gândavo sea monster is shown here as having been shaped by the multitude of seamen or water demons in the Americas that are described over time and by different authors and scholars. It could be the *Igpupiara* itself or just one of its many manifestations in the natural tropical waters of the early modern Americas. It resonated with people of the time as it was monstrous and dangerous and singular – and has continued to resonate with writers, readers, and naturalists almost to the present day. It has been described, translated, and depicted continuously,[123] as documental and visual sources remind us. We will find the *hombre marino* (*homem-marinho*, in Portuguese;[124] marine- or sea man, in English) in sightings and respective descriptions since the early 17th century to the 20th century in different parts of Europe, in somewhat similar ways over 300 years.

In 1607, Cardinal Jerónimo del Hoyo of Spain[125] writes that some fish with a figure like a man are sometimes seen on the beach at Santiago. They are called seamen, and, on the whole, resemble men, except for their hands and feet, which are a little bit twisted, because they swim. In late-17th-century South America, sea lions are described as "large as cows, while the hair in the head longer then in the rest of the body…we were obliged, after having given many shots of rifle in the body to finish him

120 Cunha (1990), *Imagens de Índios do Brasil*.
121 Gómara (2008) [1511–1564], *Historia General de las Indias*, p.153.
122 Gómara (2008) [1511–1564], p. 166.
123 Brito (2016), *New Science from Old News*.
124 Osorio (1909), *A Lenda dos Homens Marinhos Perante as Sciencias Naturaes*.
125 Hoyo (1976) [1607], *Memorias del Arzobispado de Santiago*, p. 223.

with blows of sticks and axes."[126] They represented exceptional views of beings from the ocean, and for that reason are found in books as well as exhibitions that, whenever possible, attempted to preserve their body, as in a 1910 event in Portugal.

> From "Diário de Noticias" of the 24th of the previous month: We were visited yesterday by mr. Catena, recently arrived in Lisbon, in the German cruise ship "Gertrud Woarmano" coming from Lourenço Marques. Mr. Catena, who lived 'n that town many years, proposes to present to the Lisbon audience a wonderful marine monster, caught by some Greek-Italian seamen, on September 26 of last year, and that the English gave the name of "merman" (man of the sea), by being half man half fish, just as half women and half fish the ancient legends believed that monsters were, to which mythology called "mermaids". This curious phenomenon, which was prepared for conservation by dr. Pakes, and that is 7-foot long, weighs 300 kilos, was found in Xefina, a place at the bay of Lourenço Marques, near Ponta Vermelha. This interesting phenomenon, not only for studies on the Darwinist theory of the evolution of the species, but even for the awakening of the curiosity of those that 'n that branch of science be profane, will be exposed already next week on the ground pavement of Salão Contrat.[127]

Sea monsters were elements of wonder of the coastal seas and open oceans and were a motif of interest for locals dealing with them, possibly daily, but also for those who, connected to overseas from faraway. Naturalists and philosophers actively collected and traded written and oral accounts, descriptions, plus objects and specimens. At this moment, they were no longer demonstrations of the mysterious ways in which God manifested itself in the world, but increasingly elements of nature and its eccentric productions. Consequently, they were desirable items for cabinets of curiosities and magnificent entries in encyclopaedias. The alleged remains of legendary creatures took their place next to real, yet puzzling, phenomena, previously unknown creatures, and a plethora of ordinary artefacts that filled in the gaps between one paradox and the next.[128] The bodies of such animals are

126 *Périple de Beauchesne à la Terre de Feu* (1698–1701), p. 179. The description is the caption of a coloured illustration showing a large sea lion being killed by two men with long spears; the animal is on the shore bleeding.

127 Anonymous (1910), *Peixe-Homem*. http://bd-divulgacaocientificaemjornais.ciuhct.org/entrada.php?id=719

128 Brito (2016), pp. 27–31.

difficult to keep and preserve overtime and across long distances; sometimes, only pieces remain or eventually a full skeleton, or simply some bone parts. Not enough to display to the public, avid for exotic novelties in their full monstrosity. To that end, drawings, depictions, maps and all possibilities of visual representations were made available to audiences. Illustrations – the visual counterpart of otherwise immaterial and inaccessible sea monsters – were an important way of describing, understanding, and categorising these exotic elements of nature.

The analysis of the early modern visual sources of this episode starts with the publication of the Gândavo book, which sets the tone for the dissemination of information on the tropical natural history of the Americas throughout Europe.[129] It is said that the German and the Italian leaflets circulating in Europe were copied and printed from the never found Lisbon leaflet of the sea monster.[130]

It is also the analysis of the visual sources that gives us relevant clues to complement the written descriptions and allow us to attempt to identify the animals underlying these sea monsters. Over time, many scholars have discussed their origin and they were working based on real accounts and sightings of rare or unknown real animals, not making up stories and accounts. Cetaceans, seals and sea lions,[131] and some sharks,[132] can be the source for such sightings and the existing correlation between marine animals and human features. Their anatomy or physiognomy and, in some cases, their behavioural habits, may present themselves to native peoples, sailors, explorers, or any frightened person, as resembling a hybrid form, half human and half marine animal. But in most cases, the perceptions result from sightings of real animals.

I have said it before, and still believe it, the Gândavo sea monster must have been a sea lion. The word "monster," as Gândavo – and Pinelo – uses it, is not necessarily related to a frightening mythical or imaginary creature. It is related to the occurrence of a new, gigantic, and strange (or rarely seen) marine creature. In this case, based on current biological knowledge, and contrary to what some authors have speculated, the reported animal was a sea lion from the Otariidae family. It has previously been suggested that this

129 Brito (2016), pp. 27–31.

130 Check the discussion in the following works: Camenietzki & Zeron (2000), *Quem Conta um Conto Aumenta um Ponto*; Papavero & Teixeira (2014), *Zoonímia Tupi nos Escritos Quinhentistas Europeus*; Brito (2016), *New Science from Old News*.

131 Almaça (1998), *Baleias, Focas e Peixes-Boi*.

132 Osorio (1909).

sea monster was a manatee.[133] Otariidae family members are also known as eared seals, because they possess an external ear, unlike so-called true seals. This feature is clearly represented in the picture that follows Gândavo's description and some subsequent depictions. The images also show the animal in an upright position, over its back fins. It has been suggested that the creature in question is a sea cow or manatee, but a sea cow cannot leave the water and stand upright. Fur seals, however, can stand upright and their flippers could even be described as the feet of a goose.

More recently, other scholars and researchers, such as Egmond & Mason,[134] Papavero & Teixeira,[135] or Carlos Almaça[136] mentioned that Gândavo's *Igpupiara*, or water devil, would probably be a seal. Biological misinterpretations of the historical sources are common.[137] The description indicates that this sea monster could move on shore and could easily stand vertically on its feet. This is a typical behaviour of these species when they intend to scan their environment or when they feel threatened. This same aspect contradicts the hypothesis of the so-called monster being a manatee. Manatees neither move on land nor stand upright.

The reported animal could have been either a South American sea lion (*Otaria flavescens*) or a South American fur seal (*Arctocephalus australis*). Given the size of the creature, it may have been a South American fur seal, or sea lion, which can still be found today in Brazil. The male of both species has a thickly maned fur, which is extremely soft and velvety.[138]

According to Bru de Ramon,[139] the sea lion – *leon marino* – is a very large sea animal that is very common in the "Magellan" lands and on the island of Juan Fernandez in the Southern Sea. This is how he opens his introduction of the *leon marino* and, in fact, how he opens his book. He repeatedly mentions that they are such large animals that even after removing their skin – which is very thick – there is still a large layer of fat before getting to the flesh, from which large quantities of oil can be obtained. Moreover, they can be up to eighteen feet long. He gives some details, not many, on the habitats

133 Faust et al. (2002), *Zoologische Ginblattdnucke und Flugschriften vor 1800*; Almaça (1998); Almaça (S.D.), *Guaraguás, Hipupiaras, Baleias e Âmbar*; Brito (2016).

134 Egmond & Mason (1994), *Armadillos in Unlikely Places*.

135 Papavero & Teixeira (2007), *A Fauna de São Paulo nos Séculos XVI a XVIII*; Papavero & Teixeira (2014), *Zoonímia Tupi nos Escritos Quinhentistas Europeus*.

136 Almaça (2002), *A Zoologia Pré-lineana no Brasil*.

137 For example, Maria Adelina Amorim (2004) in her poetic piece entitled "*Peixe-boi ou peixe-mulher?*" tells a story of manatees in the first person but illustrates the work with the Gândavo sea monster.

138 Egmond & Mason (1994); Brito (2016).

139 Bru de Ramon (2015) [1784], II, p. 1.

and characteristics of the animals that were known to naturalists by the 18th century, and these are reminiscent of the description given by Gândavo, and the authors that followed him, of the sea monster of São Vicente.

> These are real amphibian animals, because they spend all summer at sea, and all winter on land. In this last season the females have their offspring, that are usually two, and, when they are born, they are the size of a big sea veal, and they breastfeed them. When they are on land, they feed on grasses that grow on the banks of the running waters, and after grazing they fall asleep in the mud. They seem very heavy and hard to wake up; but they are careful to stand sentinel, some of them, whom, some say, will wake up the others when they feel some instant sound. Their screams frighten and vary a lot, because sometimes they scream like pigs, and others they neigh like horses. They often quarrel, especially the males to dispute the females, and they produce large wounds with their teeth. They are easy to kill because they cannot escape nor defend themselves except with their teeth.[140]

Bru de Ramon was a Spanish naturalist, working in the natural history cabinet in Madrid, who never left Europe. He was a learned scholar and must have had access to wide networks of communication across the Atlantic that allowed him to write detailed and well-illustrated treatises. Nevertheless, he was copied or translated other authors, relying on letters and some sketches, or working based on hearsay, as many of the early modern European naturalists did. This seems to be the case with his descriptions of some animals and monsters, namely, the seal and the sea lion.

A couple of years prior to the publication of his book, we find the publication "The World Displayed."[141] This was a dense collection of descriptions of several voyages by different pilots and captains of different European nations, across the oceans and shores of the world. It describes all the major discoveries and the major maritime journeys, the events that occurred and the peoples, sometimes environments, landscapes, and animals. Here, we find descriptions of a variety of marine animals – among them, birds, fish, mammals – found on the world's oceans, shores, and islands, as well as local and European hunting and fishing techniques and uses assigned to such captured resources. Even though some parts refer to the Brazilians and to the fauna and flora of the region, I have found no mention of the

140 Bru de Ramon (2015) [1784], II, pp. 1–2.
141 Anonymous (1760–1761), *The World Displayed*.

sea monster of S. Vicente. However, the many descriptions of seals and sea lions allow us to relate them to our previous accounts.

> There is another amphibious animal to be met in the island [Juan Fernandez, after passing the Cape of Horn], which as well as the seals, are very numerous; that is the sea-lion, which resembles the seal, though it is much larger, and was eat by the whole ship's company under the denomination of beef. When arrived at their full growth they are from twelve to twenty feet in length, and from eight to fifteen in circumference, and are so extremely fat, that on cutting through the skin, which is about an inch in thickness at least, a foot of fat is found before either the lean or the bones can be seen, so that the fat of the largest of them frequently yielded a butt of oil. Their skins are covered with short hair of a light dun colour; but their tails and feet, which at sea serve them for fins are almost black. Their feet are divided at the end like fingers, and are joined together by a web. These animals in some degree resemble an over-grown seal; but the males have a large trunk or snout that hangs down five or six inches below the end of the upper jaw, which the females have not, and this renders them easily distinguished, besides the males are of a much larger size.[142]

> The largest sea lion was the master of the flock… These amphibious animals continue at sea all the summer, and come on shore in the beginning of winter, where they reside during the whole season, feeding on the grass and verdure that grows near the banks of the fresh water streams; and when they are not employed in feeding, sleep in herds in the most odd places. In this interval they engender and bring forth their young and have generally two at a birth, of about the size of a full grown seal, which they suckle with their milk. As they are of a very lethargic disposition and are not easily awakened, it is observed that each herd places some of their males at a distance in the manner of sentinels, who always give the alarm, whenever an attempt is made either to molest or approach them, by making a loud grunting noise like a hog, or snorting like a horse in full vigour.[143]

> The sailors killed many of them for food, particularly for their tongues and hearts, which were much admired, and thought preferable to those of

142 Anonymous (1760–1761), V. 7, p. 37.
143 Anonymous (1760–1761), V. 7, p. 38.

> bullocks. There was no difficulty in killing them, since they were incapable of either resisting or escaping, their motion being more unwieldy than can be conceived, their blubber all the time they are moving, is agitated in large waves under the skin…[144]

These and other words, might have been Bru de Ramon's inspiration for describing the sea monsters in his volumes. Even though he uses a tone appropriate for the followers of the discipline of natural history and inclined to learn about the insides of natural history's cabinets of curiosities and museums, the content is much like the interactions of men and sea animals during maritime journeys. In the latter, the detailed description is meant to be informative regarding the potential uses or the incidence of such animals. Here, we get a real sense of the life of these large marine mammals and of the interspecific relationships – predator and prey; or fear of one another. Gómara says very simply, when mentioning sea wolves in the Magellan Strait, that their furs and skin are used by locals as items of clothing.[145]

Ibrahim Mutafarrika's work about the history of West Indies gives us a bit more information, however.[146] Here, we find an illustration of two native Americans hunting two mermen. The mermen look like the archetypical representation of the Classical mermaid or triton, to be more precise, with the upper torso of a man and the scaly tail of a fish. One of the men is holding a stick high above his head, indicating that he is about to hit the monsters with it. The other man is pulling or holding a rope in one hand; in the other hand, one of the seamen seems to be also pulling the rope or being pulled by it. It is not quite clear. The other seaman is raising his hands into the air in the direction of the humans. The image illustrates men and seamen facing one another in a mirrored fashion of land and sea, or as a reflection of the human and the beast. The accompanying text describes the island of *Cobagua* (also known as the Island of Pearls, present-day Cubagua, Venezuela, in the Gulf of Paria), where the inhabitants live off the pearl oyster and where there is a fish with the upper body of a man. Ninety per cent of the information in this book is from López de Gómara's *Historia de las Indias* and was probably translated and adapted by Emir Mehmet ibn Emir Hasan el-Suudi [?] in 1580.[147] As such, it could be either

144 Anonymous (1760–1761), V. 7, pp. 39–40.

145 Gómara (2008) [1511–1564], p. 173.

146 Mutafarrika (1730), *Historia de la Indias*, Illustration p. 86.

147 This was the first book on the New World published east of Italy and the first illustrated book to be produced on an Ottoman printing press.

the sea wolves described by Gómara, or any of his other aquatic animals, including a manatee. However, the same book also gives an illustration of a manatee, making it likely that this one illustrates another sea beast, a seal, a sea wolf, or a sea lion. Are they dangerous or are they easy to capture? I cannot say.

Contrary to Bru de Ramon's opinion that sea lions are easy to kill, we have another testimony by Captain Rogers, this time in the first person, of when he was attacked by a seal in the Galapagos. Different species, or different individuals of the same species, or even different periods of the year, or behaviours taking place at a certain moment, can give rise to very distinct descriptions and perceptions about the reality of a given animal (Figure 16).

> From docile to ferocious beast. From a sea monster to a sea lion.
>
> On the 31st of August they sailed from this bay [they come from Gorgona to Tecames bay], with a fortnight's fresh provisions on board, in hogs and cows. The next day they saw several grampusses and young whales, engaged with the thrashers and sword-fish, and abundance of water-snakes, one of which was coming up the side of Mr. Cooke's ship, but the men beat it off; the Spaniards say that there is no cure for such as are bit by them.[148]
>
> On the 10th of September they made one of the Gallapagos islands, and there laid in a sufficient supply of excellent turtle, besides a good quantity of fish, which they split and salted…here are also seals, so fierce as to attack any man who comes in their way: this Capt. Rogers experienced; he was on the level sand, when one of these animals came open-mouthed at him out of the waters, as quick and as fierce as the angriest mastiff let loose. He defended himself by sticking a pike, he held in his hand, into the creature's breast, on which it retired a little, but came on again, and this was repeated, till having received three wounds, it retreated snarling and shewing its long teeth out of the water.[149]

From the early explorations and information gathering of the 16th century to the accumulated experience made from observation and appropriation of traditional knowledge along the 17th century, the way of seeing and perceiving large marine animals changed in some situations. Nevertheless,

148 Anonymous (1760–1761), V. 6, p. 176.
149 Anonymous (1760–1761), V. 6, pp. 176–177.

the European views about the edges of the world still prevailed.[150] Similarly to the first travel accounts during the early and mid-15th century, as the Portuguese started to navigate down the western shores of Africa, and in and around the Atlantic archipelagos to the southern shores of the Americas, navigation allowed for the sighting of many different animals and the use of these occurrences in distinct ways.[151] Here, we find the descriptions of flying fish, dolphin fishes, large whales and many dolphins, sea turtles, seals and sea lions, sea birds of multiple kinds, almost all of them allowing for the identification of a certain region, the proximity to land, or other indications that might be useful in the maritime journey. The sighted animals were themselves *conhecenças da terra* [land know-how], i.e., vital signs to help seafarers in interpreting their surroundings and in locating their approximate position.[152] Each of these observations was framed by unique experiences acquired in sequential voyages and a set of descriptive practices relating to specific navigational purposes was in place with immediate pragmatic results and uses. This allowed for the construction of a body of knowledge that included navigation instructions, geographic coordinates and magnetic variations, geo-climatic features and, of course, information on marine flora and fauna.[153] Sea birds served many of these purposes, because they were abundant and easy to spot and follow, but marine megafauna, including marine mammals, were also used. For instance, large individuals and groups of sea lions and sea wolves are found among such 16th-century descriptions alongside South African shores in the Atlantic and the Indian Ocean,[154] as well as for the 17th-century Pacific Ocean,[155] but no accounts of "seamen," as there are for the Americas. Knowledge construction and dissemination also depended on the purpose and motivation of those observing, describing, writing, and painting; it depended on the places those authors knew and travelled to, and on the networks that they relied on.[156]

It is in the Grijalva account of the ship *San Lázaro*, between 30 October 1533 and February 1534, that we find an example of a description based

150 Mancall (2018), pp. 10–16.

151 Brito (2018); Vieira (2018), *A Comparative Approach to Historical Whaling Techniques: Transfer of Knowledge in the 17th Century from the Biscay to Brazil*; Roque (2018), *Towards a Scientific Approach of Nature*.

152 Roque (2018), p. 77.

153 Roque (2018), p. 77.

154 For a recent review of the Portuguese sources about marine animals in this region, see the work by Roque (2018), pp. 89–99.

155 *Périple de Beauchesne à la Terre de Feu* (1698–1701), pp. 83, 129.

156 E.g., Mancall (2018); Smith (2017).

on personal experience and *in loco* observation. This, once again, and as previously mentioned, displays a blending of, or a confusion about the possible interpretation by the first observer and later authors of the sighting of a seaman, probably a sighting of seals or sea lions.[157]

> …Sunday nine of said month…and on that day at night we were quietly halted without any wind and close to the ship passed a fish that we never knew what it was, some said that it was a marine man, others that it was a wolf, rose its head against us watching us three or four times…and coming around the northeast axis searching for land of the New Spain and in the middle of the gulf between firm land and the island we found again that fish as was said and this time it happened to come out close to the ship and we saw it so close to us that we could widely draw, which rejoiced more or less like a monkey shaking and bathing with its hands for a while and watching us as if it had a way of meaning that a 'silly bird' appeared to it and wandered towards it and then it left and went away from us but we saw it however…[158]

Grijalva and his pilot were experienced sailors, who conducted a large voyage of geographic recognition far into the Pacific Ocean, giving a detailed account of it. While following their itinerary of exploration, they observed and described the marine life surrounding them, including sea turtles and sea birds, and, of course, the animal to which we are directing our attention.[159] On a Sunday, 9 November 1533, they refer with admiration to a strange fish that swam by their ship. The sighting of the animal takes place in the Mexican Pacific, several days of navigation away from shore (they left shore on 30f October and the observation was on 9 November) but not in the open ocean, as they encountered bad weather for several days. The animal is never mistaken for a mermaid, even if its two illustrations might resemble one.[160]

157 Martínez (1992), *Documentos Cortesianos,* Sections VI–VIII, Part II. The original document is Hernando de Grijalva, *Relación y derrotero del návio San Lázaro al mando de Hernando de Grijalva y su piloto Martín de Acosta, Portugués*. AGI, Patronato, 20, N.5, Ramo 7. This sighting was made when doing the return voyage to Nueva España. See also Martínez (1990) *Hernán Cortés*.

158 Martínez (1992), *Documentos Cortesianos*, Sections VI–VIII, Part II.

159 Redondo (2021), *Primeras Expediciones y Primeras Impresiones del Mar Bermejo*, pp. 49–54.

160 Two drawings of the animal were made, one with scales and another without – they were not able to confirm the presence of scales. Espinosa y Tello (1802) [1763–1815], *Atlas para el Viage de las Goletas Sutil y Mexicana.* For the original, see the manuscript by Grijalva (1533),

They were not the ones who called the curious animal "*hombre-marino*," but rather later authors, compiling travel accounts for the period, saying the colour was of a dolphin with large arms and hands. Moreover, it was discussed that it might have been a manatee, and that one of the drawings resembled a mermaid.[161] But no evidence for such exists in the original manuscript; it is called a fish.

> The fish that we saw was similar to these even if we did not see if it had scales or not and seemed the colour of the dolphin and this one had no more no less than monstrous arms and hands because we saw him raising in the air above the sea.[162]

The latter quotation refers to the caption that accompanies the illustration on the last page of the manuscript. Later, we will find another mention of it in the *Relacion del viagem hecho por las goletas Sutil y Mexicana en el año de 1792*.[163] The author mentions when describing the Grijalva voyage that "on day on the 14º 30' latitude a unique fish appeared, which, being very similar to man in its appearance and attitudes, cause them great admiration, and they drew it in their journals or travel logs."[164]

It is hard to say what animal this is – based on the brief description as well as on the visual content – but surely it is not a manatee, given both the behaviour displayed and its geographic location. It is also not our seaman, water devil, or *Igpupiara*. It is probably a vagrant seal or sea lion wandering the open waters of the Pacific in search of food.

So, in the same way that there are many different sea animals, all kinds of sea monsters can be found. There are those that live in the handwritten letters of missionaries and settlers, in the pages of travelling and navigation accounts, or in the European treatises, and in the natural histories of different societies – which are the ones that explained to people the exuberant and extraordinary nature of the distant and exotic seas and oceans. Moreover, there are those that connected people, empirically and locally, with the environment they were living in, either newcomers, or those living in these lands and seas for a long time.

Derrotero Armada de Dos Navios. Salió del Puerto de Santiago found at the Archivo General de Indias (Patronato Real), Sevilla. © Archivos Estatales (pares.mecd.gob.es)

161 Espinosa y Tello (1802) [1763–1815]; Martínez (1990), *Hernán Cortés*.

162 *Derrotero Armada de Dos Navíos. Alío del Puerto de Santiago* (1533). Archivo General de Indias, Sevilla.

163 Espinosa y Tello (1802) [1763–1815], p. 14, Image 17.

164 Espinosa y Tello (1802) [1763–1815], p. 14, Image 17.

> Here, in the midst of these applauses, the sea element also wanted to claim its nature: and so it was, it vomited to the beach an unseen and portentous sea monster, a recreation of the Portuguese, an unusual thing, and very pleasing to the Indian's taste. It was thicker than a barrel, and more than two barrels long: the head, eyes, and skin were like the skin of a pig, and the thickness of the skin was that of a finger. It had no teeth, the ears were elephant-like, his tail was one cubit long, and another cubit wide. This is more than enough to show the novelty of this monster, one of the many that have been discovered in these regions of Brazil along the years.[165]

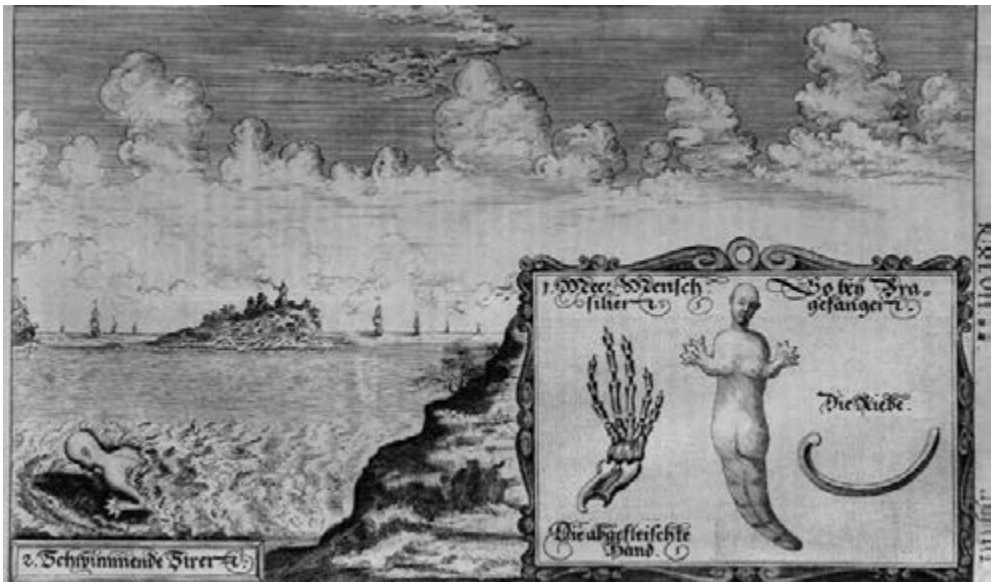
In constructing the natural history of the marine environment in different parts of the Atlantic in the modern age, we find the contributions and perspectives of Africans and Amerindians told in the European encyclopaedic tradition. In these narratives, the European, critical, and systematic gaze, confronted with biodiversity and tropical abundance, comes together with experience and traditional local practices, and with astonishment in the face of the unknown, the different, and the potentially scary and dangerous – as is common in all societies. The monstrous marine animals, unknown to some, rare to others, and scary for almost everyone, helped the development of human perceptions, relative to marine life and habitats, and to natural resources, and simultaneously of the mythologies associated to nature.

For the Portuguese Americas, *Igpupiara*, the feared marine man that I have been talking about, and *Iguaragua*, the chubby sea cow that I will discuss shortly, are two fundamental elements in the writing of this story. They are a connection between different societies and natural realities, constituted by empirical observation, phantasy, and myth, and some wrong, or exaggerated perceptions and interpretations of nature. These two entities are also the reflex of real animals and were dealt with daily, be it for local consumption or export, for medicinal purposes or magical practices, or even as a defence of the space – terrestrial and in contact with the aquatic world – that was inhabited and examined. They symbolised a nature with which everyone had to deal with, for some as part of their, or their family's, way of life,[166] for others as part of new commercial, administrative, political, and scientific systems that were gradually being structured.

165 Vasconcellos (1668), p.16.
166 Brito (2019c).

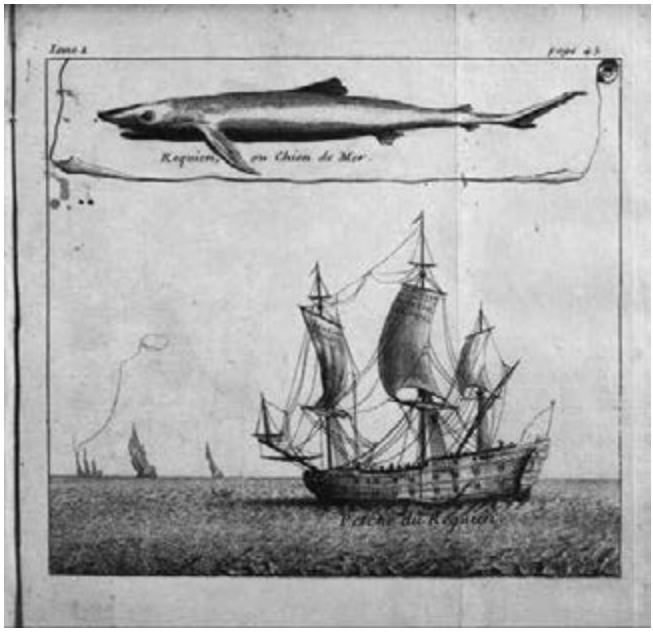
◀ Figure 9 – The Gândavo's sea monster in the work by Petrucci (1677) *Prodomo [sic] apologetico alli studi Chircheriani*. A man [native American?] attacks a sea monster or merman with an axe or hatchet; the monster has a tail like a fish, webbed hands and a head with bristling moustaches, and is probably a representation of the event described for the shores of colonial Brazil by Pero Magalhães de Gândavo referring to the sea monster killed in 1564. The same description and similar depictions exist for numerous European natural history books of the time, including Aldrovandi, Coenen and Kircher. In fact, Petrucci was a disciple of Athanasius Kircher, and his work is an eclectic assembly of various marvels of culture and nature. © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/9i11ko).

▼ Figure 10 – Various sea creatures including a mermaid, merman and sea monster in the book by Erasmus Francisci (1688). At the bottom, a hippopotamus from African shores is also represented © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/ub225f).



▲ Figure 11 – Sea humans, or a strange monster from the sea, in the book by Erasmus Francisci (1688), where a reference to the sea monster from Brazilian shores is made. © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/914f9x).

▲ Figure 12 – A crocodile or alligator (1768) printed for the book *The travels of Peter Williamson, among the different nations and tribes of savage Indians in America*. © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/o28810).



◀ Figure 13 – A depiction of a shark and its capture off the West Indies; the shark is being pulled alongside the boat. In Labat (1722) *Nouveau voyage aux isles de l'Amerique*. © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/2409fb).

▲ Figure 14 – A group of European men watch from a canoe as a man is devoured by a large snake or serpent, a man-eating sea monster, possibly in the Orinoco River; other aquatic animals are represented in the river. The text refers to the local name *lagartos* used for alligators or caimans, which are described as dangerous and ugly serpents by Walter Raleigh Published by Door Pieter Vander Aa in 1707. © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/3f8o47)

▲ Figure 15 – Alligators being killed by Native Americans, using a pole and arrows, showing techniques of hunting the animals or, eventually, of defence. The text that accompanies the engraving describes how the Timucua Indians would build a small hut with slits and holes where a watchman waits for the alligator to forage for food. At that point, others arrive and drive a small tree into the alligator's mouth; they then turn it over and shoot and beat it on its soft underbelly until it dies. This image derived from Theodor de Bry, America, but similar representations are shown in works by other authors; published by Door Pieter Vander Aa in 1707. © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/7wlprs).

▲ Figure 16 – European soldiers beat and kill seals or sea lions in the mouth of the River Deseado in the land of Patagonia (1586), accompanying a description of the circumnavigation by Thomas Cavendish. In this place, his crew killed many seals and sea lions, which they described as looking like lions with curly manes. This image is derived from Theodor de Bry, America; published by Door Pieter Vander Aa in 1707. © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/irl1b8).

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4. Beliefs about and practices in nature: From living creatures to resources and symbols

Abstract: The (in)tangible value of manatees in local and foreign uses – food items, medicines, objects, products of relationships – at the local level and in transatlantic networks of extraction and trade, are addressed. These views are published by early modern European writers, hence their own perspectives overlap or even dominate local ones. But all voices existed and are represented, and a panoply of interactions and feelings towards aquatic animals can be drawn from them. Sea turtles, sharks and remoras, seals and sea lions, are no longer strange creatures. They have a purpose; they are labour, food, or pets. They are real animals that play a particular role in human history or have an agency of their own.

Keywords: indigenous views and ways; (pre)colonial Americas; European values and practices; resources, products, and ecosystems; extractions and impacts.

The Spaniards at this Time found a new sort of Fish, which was a considerable advantage to them; tho in those parts there is much Variety. It is call'd Manati, in shape like a Skin they use to carry wine in, having only two feet at the shoulders with which it swims, and it is found both in the Sea and in River…The taste of it is beyond fish; when fresh it is like veal, and salted like tunny-fish, but better, and will keep longer; the fat of it is sweet, and does not grown rusty. Leather for shoes is dress'd with it. The stones it has in the head are good against the pleurisy and the stone. Sometimes they are taken ashore, grazing near the sea, or rivers, and when young they are taken with nets.[1]

1 Herrera y Tordesillas (1726), *Historia General de los Hechos de los Castellanos en las Islas i Terra Firme del Mar Océano.*

Brito, C., *Humans and Aquatic Animals in Early Modern America and Africa*. Amsterdam: Amsterdam University Press, 2023
DOI 10.5117/9789463728218_CH04

> *...the manatee, or lamentin, once found in the Golfo Dulce, is now seldom, if ever, seen, although still found in British Honduras, where the hide is used for whips, canes, etc.*[2]

> *But of all enemies of these enormous fishes, man is the greatest: he alone destroys more in a year than the rest in an age, and actually has thinned their numbers in that part of the world where they are chiefly sought.*[3]

> [*The Manati.*] *This is sometimes taken in the quieter Bays of this Island, tho rarely now a Days: They have formerly been frequent, but are, by the multitude of People and Hunters catching them, destroy'd. They are caught by the Indians who are reckon'd the best Hunters, knowing the Hauts and Customs of their Game, and being very dexterous at it, especially those of the Musquitos, or Costa Rica. The manatis are reckon'd extraordinary food and are likewise salted as Beef, and eaten as Provision.*[4]

The manatee is not a fish but, at the same time, it is. It is not a sea monster, nonetheless it is one. In fact, it is an aquatic mammal totally dependent on the water where it lives, feeds, and reproduces. But they go well beyond their peaceful appearance and representational value. They are the "Cow of the Ocean" and, as the character Ray puts it in Rick Moody's novel "*there must be something good to eat in a manatee, 'Damn thing weighs near three thousand pounds'.*"[5] Ray's belief reflects years, indeed centuries, of peoples' sentiments and perceptions of the potential value of this aquatic animal as a resource, or, as a source of high-quality multiple raw material – meat, fat, skin, bones, teeth – to be transformed and used by humans. An aquatic animal, easy to capture, and providing large amounts of foodstuff and material source for tools and objects. It is a large animal and, as such, a monstrosity from the waters. But quite unlike most sea monsters, it is a pacific and friendly monster with its slow swimming habits and typical periods of resting at the surface with almost no movement. The manatee – also known in the Americas as the sea cow, the ox-fish, the fish-woman, the *manati* – is the Tupi *Igoaragoa*. Quite different from the *Igpupiara*. And quite contrary to

2 Brigham (1887), *Guatemala, the Land of the Quetzal*; Baughman (1946), *Some Early Notices on American Manatees*.

3 Goldsmith (1822), *An History of the Earth and Animated Nature*, vol. II, p. 323.

4 Sloane (1707–1725), *A Voyage to the Islands Madera, Barbados, Nieves, S. Christophers and Jamaica*, Tome 2, p. 200.

5 Moody (2006), *The Cow of the Ocean*, p. 103.

all sea monsters, we find rather empathetic references to it as early as the 16th century.

There is a certain positive feeling that emerges from the moment of the first European contact with the tropical aquatic beast, and that traverses time – Bru de Ramon refers to it as a very tame fish[6] – up to the 20th century and even to the present day.

> It seems to me that this class of monsters is not known in our seas, because it is quadruped with the shape of a turtle, but provided with scales, quadruped with the shape of a turtle, but provided with scales, no shell, with a very hard skin, and so it is no afraid of arrows, armed with a thousand warts, with a flat back and the head completely like a cow. It is an aquatic and terrestrial fish, tame, lazy; like the elephant and the dolphin, it is sociable with men and has wonderful sense.[7]

> A hush fell over the crowd on the western tip of Washburn Island, as a crew of animal rescue experts and volunteers hauled toward the shoreline, pull by steady pull, the corpulent gray creature they'd successfully wrangled into a net. As the barnacle-speckled male manatee landed on the beach, enveloped by the blue netting, the team from the International Fund of Animal Welfare descended on the docile sea cow like a police special forces unit making an arrest. Immediately, they went to work, assessing the sea mammal's health and recording his vital signs, as the manatee loudly breathed what may have been a sigh of relief – or perhaps a sign of surrender. Thursday's capture of the Cape Cod manatee marked the end of a weeks-long effort to find the wayward tourist and pluck him from the cooling waters, before sending him first to a rehabilitation facility in Connecticut, and then back to his natural habitat of Florida. With autumn beginning, experts had become increasingly concerned the manatee would die.[8]

This attitude, full of concern, empathy, and sometimes of poetry, stemming from a sense of the close relationship between people and this aquatic animal, both past and present, results not just from its physical proximity with land environments where humans live, but also from a

6 Bru de Ramon (2015) [1784], *Colección de Láminas que representam los Animales y Monstruos*, I, p. 35.

7 Mártir (1989) [1515–1516].

8 Annear (2016), *Group Finally Rescues Wayward Cape Manatee*.

certain feeling of closeness with human nature. Adjectivizing the manatee as tame, nice, friendly, and docile evidences the anthropomorphising of the animal. Somehow, manatees resemble humans. And, possibly, humans see their own nature (both the outside and the inside) reflected in these animals.

There is a degree of convergence on how people theorise about aquatic animals or monsters, or even just about the ideas about these marine beings and their dwelling places. The large is always large but, if unknown, it will become gigantic. Concepts can – and did – move from one pole to the other of a gradient between the naturalisation of the monsters and the "monstrification" of the natural. The animal and the monsters were, in most cases, simply two sides of the same coin. These animals were perceived as monsters, and monsters could reflect natural realities. Consequently, we find multiple histories and stories of people's relationships with animals from nature, the animal-monster, the animal-resource, and the animal-symbol, all different, all separate, but all intertwining.

Therefore, the Lamentyn "…by some call'd the sea-cow, and by others Manati…"[9] is described extensively during the early modern period, from the moment European people encountered this tropical beast. Most of these men had ideas about possessing nature, relating to animals, eating this or that, or even touching a gentle marine mammal. In most of the moments of encounter and of exploring and trying to grasp a whole new natural world, there was a need to turn attention to the other senses. In the case of our manatees, despite so many considering it ugly – it has no scales, but the skin is brown and coarse[10] and it exceeds the ox in corpulence; it is covered with a hard skin, resembling the colour of the elephant[11] – they simultaneously appealed to the touch as well as to the imagination. People that had never seen them before wanted to feel them; people wanted to caress them, as much as to understand them and their purpose on God's Earth. They appealed to people's skin as much as to their minds.

Europeans viewed manatees as one of the most impressive of all new aquatic animals. From remarkable[12] in the 16th century to esteemed[13] in the 18th century, they were objectivated as a magnificent fish and a marvellous and valuable sea monster.

9 Barbot (1732), *A Description of the Coasts of North and South-Guinea*, p. 592.
10 Sousa (1989) [1587], *Noticia do Brasil*, pp. 198–199.
11 Anchieta (1946), *Capitania de S. Vicente*, p. 34.
12 Oviedo (1535), *Historia General y Natural de las Indias*, p. 432.
13 Burton (1729), *The English Empire in America*, p. 148.

These mammals work as a good case study for environmental humanities approaches[14] and for the methodologies that are typically used for the study of domestic and wild animals over time. Descriptions and illustrations of manatees found in documental sources for the early modern Americas show us examples of the species, of local populations, and even of individuals' relationships with the humans that shared space and lived with them. It also shows us circumstances of animal agency and its – unwilling but real – impact on humans' choices. It is beyond doubt that animals affect human activity through their actions as well as through their presence and absence.[15] And in this part of the world, and at this moment in time, manatees and humans are part of a shared history. We can even read a set of events or practices that reveal differences between human groups or cultures and how different people act upon and react to wild aquatic animals. Manatees can be understood as actors[16] just as much as the Indigenous peoples and Europeans reaching and settling in the Americas.

Concepts and ways of understanding nature and animal agencies, or "embodied agency," are currently being discussed by different historiographies and historicities.[17] As I was sitting at an international and interdisciplinary conference about fantasy and creativity, I learned a sentence by Ludwig Wittgenstein – if a lion could speak, we could not understand him – that was totally relatable to my readings and thoughts on historical agencies. I tend to agree with Linda Nash when she states that "environmental historians are uniquely positioned to contribute to this rethinking and rewriting of agency because we study the interactions of humans and the non-human world in such detail. And what we often uncover is not merely the way that

14 "*The emergence of the environmental humanities is part of a growing willingness to engage with the environment from within the humanities and social sciences…The development of environmental humanities is an effort to enrich environmental research with a more extensive conceptual vocabulary, whilst at the same time vitalising the humanities by rethinking the ontological exceptionality of the human.*" Rose et al. (2012), *Thinking Through the Environment, Unsettling the Humanities*, pp. 1–2.

15 See the blog entry by Steinbrecher (2019), *Animals as Historical Actors*.

16 Steinbrecher (2019), *Animals as Historical Actors*.

17 For some reviews on environmental history, environmental humanities in relation to animals, and nature's agency, see, for instance, Steinbrecher (2019); Steinberg (2002), *Down to Earth: Nature, Agency, and Power in History*; Carter & Charles (2013), *Animals, Agency and Resistance*; Fudge (2000), *Perceiving Animals*. This is an ongoing debate, and for counterarguments and for some speculation about the nature of the currents that make this particular concept so hard to grasp, see, for instance, Steward (2009), *Animal Agency*.

nature influences and constrains human actions, but also the way that particular environments shape human intentions."[18]

Animals do not make history on their own, and we cannot understand them and their intentions with ease, but their shared history with humans results from the interactions and relationships they establish with other living beings; indirectly they leave impressive amounts of tracks and trails in the archives. Animals also appear in a spatial dimension as actors and as significant members of certain societies, in certain contexts, during the conquest of new territories – lands and seas – and during European expansions. Indeed, at times, the animals themselves or their respective uses take centre stage in the writings of these spaces.[19] Like their environments and networks of relationships, they are not mere backdrops of human action, but rather an active and shaping force of the past. Our stories might be different if human beings appeared not as the motor of history but as partners in a conversation with a larger world, both animate and inanimate, about the possibilities of existence.[20] I find it hard to set aside past (or present) human actions upon a certain animal or population from the fact that that animal or population shape the environment while living, reproducing, moving, migrating, feeding, socialising, and interacting both at intra- and interspecific levels. They act. And, "as long as they act, agents have meaning."[21]

Societies have an agency of their own while resisting, transferring, dialoguing, or being affiliated with foreigners. Either by lending their traditional knowledge, or by having this knowledge violently expropriated, they act on their own cultural and natural spheres of existence, and, in the process, they co-produce narratives of change that become imprinted on the territories and on memory.

Here, I wish to go beyond the romanticising of Indigenous groups and their relations with a (not so) pristine nature.[22] The idea of a well-regulated

18 Nash (2005), *The Agency of Nature or the Nature of Agency?*

19 Steinbrecher (2019).

20 Nash (2005).

21 I move quite freely between objects, subjects, and agents, particularly when dealing with and trying to understand animals or nature's agency. I try not to limit myself to the understanding of human actors, but on the contrary to expanding the possibilities of existing historical actors, agents, or actants to nonhuman and more-than-human entities and realities. As much as possible, my assumptions are supported with a critical view of current historiography on the topic, such as all the above-mentioned authors, plus Latour (1996), *On Actor-Network Theory*; Latour (2014), *Agency at the Time of the Anthropocene*.

22 See Mann (2011), *1491*, to follow his basic arguments that Indian societies in the Americas were larger, older, and more sophisticated than previously believed, and that they had greater impact on the environment than previously thought.

nature or of a balance in nature derives from Antiquity and was reset and re-signified upon the European discoveries of the diverse human societies, natural richness, and biodiversity of the "new world" of the Americas. But in an open system of nature and culture, in which balance and climax can be questioned, Indigenous individuals and peoples become, like all people, dynamic forces whose impact, subtle or not, needs to be (re)considered.[23] There are examples of environmental changes, engineering and impacts on land resources, such as forests, and transformation due to agriculture practices, but we can also find them regarding marine resources. The Calusa, a Native American group of southwestern Florida, captured and stored fish in complex walled structures that were constructed of shell and other sediments.[24] This fisher-gatherer-hunter people lived along a subtropical coastline, with mild winters; they lived in a mangrove ecosystem with a myriad of small islands, islets, and many water channels – it was a waterlogged world, where land was in short supply. By the 16th century, the Calusa were the most politically complex society in that region, probably supported by their privileged access to aquatic resources.[25] The structures, the authors argue,[26] were for large surplus capture and storage of fish that were controlled and managed by corporate groups.

Our account also reveals the maintenance of an animal in a certain type of structure – more or less naturalised – and how the access to this manatee provided a degree of advantage in dealing with the environment. However, it also seems to show us that the domestication of natural life is seldom, and never totally, attained. This human attempt to control is even more difficult with aquatic animals living in a three-dimensional environment, so different from the reality of land. These animals migrate, move, hide, become more elusive, alter their behaviours, and may even change their occupation zone.[27] The animal's agency is set in the foreground, as are the actions of the local people interacting with it.

23 The concept of the Noble Savage dates back as far as the first ethnography of American Indigenous peoples, such as the one by Bartolomé de las Casas in 1530s. But in European terms, Indians lacked *agency*, they were not actors, but rather passive recipients of events and history. The image and the idea of the noble Indian, the noble savage, in total connection with nature and speaking to it (and others) with ecological wisdom and surrounding their actions upon the environment with kindness and prudence is slowly being demystified. See Mann (2011), *1491*, and Krech III (1999), *The Ecological Indian*.

24 Thompson et al. (2020), *Ancient Engineering of Fish Capture and Storage in Southwest Florida*.

25 Fagan (2017), *Fishing: How the Sea Fed Civilization*, pp. 114–124.

26 Fagan (2017), pp. 114–124.

27 Brito (2019).

There is also a poetic suggestion in this story, according to which *Matto*, the manatee, like many other manatees and other animals, serves as a symbol for the history of an empire – in this case, of the discovery and conquest of the Americas by the European.[28] For the Americas to be conquered, people had to settle there, and to do so they needed to fulfil, in the first instance, the basic necessities of survival – access to shelter, water, and food – and then access to local (valuable) resources to justify before their kingdoms their expansion and permanence overseas – the motif for empire development. The first descriptions of manatees certainly follow these basic notions of descriptions of the new seas, new lands, new peoples, and new natures. Manatees are addressed and described from the viewpoint of utility, and their value for Portuguese and Spaniards is exactly that – are they dangerous or are their edible? The first to write about the marvellous manatee meat – Gonzalo Fernandéz de Oviedo – was also the first to describe the Spanish Americas, and all scholars and naturalists after him come to exalt the fine qualities of manatee-food.

The manatee is one of the most remarkable and unheard-of fishes that I have read or seen. Not even Plinius nor Alberto Magno have spoken of these… nor do they exist in Spain. Neither has there ever been a man of the sea or of the land that would have said to have seen or heard them: but on these five islands and the mainland of these Indies of Spain. This is a very large fish of the sea although they are frequently killed in the big rivers on this island and in others around these parts.[29]

Besides offering us the manatee as a never-before seen, impressive aquatic animal, he describes in detail the different ways of using and cooking it: if raw, it tastes like veal; if boiled, it tastes like tuna; and if fried, a large quantity of good butter is obtained. And soon after acknowledging its flavour and use as good food, many colonisers and missionaries start to have manatee meat on holy and abstinence days. Some would argue that, even though it is a solid food and tastes like meat, the manatee is in fact a fish because it lives in the water, and no one could argue with that. The friendly manatee, neither meat nor fish, now has another, enigmatic and attractive trait.[30] It is a delicacy of nature available to the settlers in the Spanish and Portuguese

28 Durand (1950), p. 41.
29 Oviedo (1535), p. 433.
30 Durand (1950), pp. 53–59.

Americas, which will later be turned into staple food to feed the colonies and for export.[31] Its hybrid character is enhanced in yet another perspective:

> I believe it is one of the good fishes in the world and the one that resembles meat the most.[32]

This is a common notion among many authors writing about this animal, who combine its utility with the impression and impact that it has on them; consequently, a mixture of feelings emerges from the descriptions. The animal may be exceptionally good to eat, but its other – somewhat human – characteristics are hard to ignore. Manatees nurture their calves, feed them with their milk, and protect them with their flippers; and the calves stick to their mothers, "embracing them with their little paws.".[33] This bond between mother and calf is also patent in the fact that they do not leave each other, even if dead – from this developed a capture method that involved grabbing or killing a calf in order to keep the mother nearby.

Hybridity, paradox, and contradiction are central to the feelings and descriptions of manatees and of people's direct relationships with them. And the confrontation of different views and uses of the animals is also present. Let us also not forget that, when dealing with tropical animals, formerly not known in Europe or from coastal or open-water maritime journeys, learning at location – both observation and imitation (and adaptation to European practices) – was always implied. There are many accounts referring to human–animal interactions that also deal with the doubts and scepticism employed by Europeans when looking at some Indigenous practices and how local peoples' relationship with nature took place. At the same time, European people forge their own opinions on natural life and the animals that they are learning about.

This was a double-sided process of understanding and one that is potentially comparable among different societies, because, on occasion, people would eventually see themselves in the other. For instance, in some Indigenous groups, manatees even served as examples of the honour that boys and girls were obliged to show their parents, just like good Catholics were obliged to honour their church and their king.[34] Nature could mirror

31 Fiori & Moraes dos Santos (2015), *A carne, a Gordura e os Ovos*, pp. 79–81.

32 Oviedo (1535), pp. 433–434.

33 D'Evreux (1874) [1613–1614], *Viagem ao Norte do Brasil*, pp. 12–13.

34 D'Evreux (1874) [1613–1614], pp. 12–13.

humans' behaviours and could be used as a framework of responsibility; if animals can do it, then so should humans with no difficulty at all.

Many different feelings can be found in these early interactions between people and tropical aquatic animals and, going back to Oviedo, we find a description of the way local peoples captured manatees and sea turtles using the sucking-fish. This involves a second-degree interaction where people relate to a certain animal by using another animal. There are many ways of capturing or hunting manatees (or other large aquatic animals),[35] but this one is exceptionally amazing. Simultaneously, it will show us the different ways of looking at and perceiving these animals.

The sucking-fish, remora (Figure 17), or, as Oviedo calls it "*pexe reverso*" was considered by the locals fishing tribes – and as such described by the author – as an ugly fish but one with a great ability of understanding – "*feo al pareçer, pero de grandíssimo animo y entendimento*" – while also referring to it as one of the best fish from the sea.[36] The author describes the way Indigenous fishermen from Jamaica, Cuba, and Hispañola keep and raise sucking-fish by feeding them until they are of a large size, in which condition they use them to hunt other large fish, including manatees and sea turtles. His account of is even more interesting and valuable because he gives certain details about the training and care of the fish by the fisherman, which are absent from other accounts, and of which he seems, possibly, to have had some direct knowledge.[37]

> When the Indians want to keep and raise some of these reverso for their fishing, they take them small and keep it always in salty water of the sea, and there they feed them; and they raise them domestically until it is of the size that I said or a little more, and suited for their fishing. Then they take it to the sea in the canoe or boat and put them there in salty water and tie them with a slim (but tough) rope: and when they see a big fish, like a turtle or shad, because there are big ones in these seas, or some of these manatees or any other that are at the surface, so that they can be seen; the Indian takes in his hand these reverso fish and cuddles it with the other and tells it in his language to be manicato, which means strenuous and with a good heart, and to be diligent, and other words that

35 In the following chapter, I will write about the methods for hunting manatees, while here I am mostly referring to local perceptions, and for that I will use the remora capture technique as an example.

36 Oviedo (1535), p. 435.

37 Oviedo (1535), p. 435; Gudger (1919a), *On the Use of the Sucking-Fish for Catching Fish and Turtles I.*

> exhort effort, and to make sure that it dares to hold on to the biggest and best fish it can find there. And when he sees that it is time and thinks so, he sets it free and throws it where the big fish are; and the reverso goes, like an arrow, and holds on to the back of a turtle or to the belly or where it can, and sticks with it or any other large fish; which, feeling to be clinging to that small reverso, flees through the sea from one side or the other; and while the Indian fishermen lengthens the rope or pulls it at every point, which is very lengthy, and at the end of it a stick or cork is tied as signal or buoy, resting on the water. It is in a short period of time that the manatee or turtle fish, to which the reverso clung, tired, comes back to return to the coast: and then the Indian fisherman begins to catch his rope in the canoe or boat; and when he has few rope to catch, he begins to pull gently, little by little, guiding the reverso and the prisoner to which it was holding, until he reaches land, and the very waves of the sea throw it out. And the Indians who engage in this fishing, jump to the land, and if it is a turtle they flip it without it touching the ground, because they are great swimmers, and they put it dry on land; and if it is a manatee, they harpoon it and finish killing it. And upon getting that fish to land, it is necessary to carefully and little by little to take off the reverso: which the Indians do with sweet words and many blessings for what it has done and its work, and that is how they detach it from the other fish that it took. And it comes so tight and fixed to it that if they detached it by force, they would break or tear the reverso.[38]

Oviedo gives extensive details of this type of fishery and how the local Indians employ the remora, and all the care they take with it. They are a very effective and very valuable fishing tool. Like in many other cases we have described, some authors questioned its veracity. Even though not all remoras could perform such work, due to their small size, the genus *Echeneis* includes the shark sucker (*Echeneis naucrates*), a large remora that usually attaches to large sharks and this could be the *reverso* fish in question. Its behaviour of detaching once the shark is out of the water is also in accordance with the early descriptions that we are considering here.[39] In different parts of the world, this fish is known as the fisherman-fish (Mozambique) or the hunting-fish (West Indies).[40]

38 Oviedo (1535), pp. 435–436.

39 See a discussion on the topic in the third part of the large article by Gudger (1919c), *On the Use of the Sucking-Fish for Catching Fish and Turtles III.*

40 Gudger (1919a).

In addition to the their physical abilities, Oviedo acknowledges that the fishermen using this technique have a real connection to the fish they work with, a connection he believed in, and, moreover, that the fish have a clear understanding of what is being requested. Oviedo describes a certain "human" intelligence or a degree of understanding is attributed by Indigenous fishermen to the sucking-fish, as it listens to and responds to the words of incentive and of thanks for its hard work in the capture. But the author also talks of ignorance, as the Indians do not understand the natural properties of the remora that allow it to grab large fish and animals and then let them go.[41]

> So credulous is this generation of those Indians that they believe the Reverso well understands human speech and all those words of encouragement the Indian says before releasing it for an attack on the tortoise, manati or other fish, and that it understands also the thanks they afterward give it for – what it has done. This ignorance arises from a failure to comprehend that this is a natural characteristic, because it happens many times in the great ocean as I have frequently witnessed, that when a shark or tortoise is captured, Reversos, without having been directed, are found attached to these fish and are broken to pieces on detaching them. From which we may infer that it is not in their power to release themselves after they have attached themselves except after an interval of time or from some other cause I have not determined; because one must think that when the shark or tortoise is taken the Reversos attached thereto would flee if they could. The fact is, as I have said above, for each animal there is its constable.[42]

Here, we see mirrored much of the discussion by Fudge and other authors about the human perception of animals. "When we look at the human understanding of beasts in the past what we see are not only the foundations of our perception of animals but humans contemplating their own status. What is revealed in a wide range of writing from the early modern period is a recurring attempt to separate the human from the beast."[43]

Oviedo separated himself from the animals; he is seeing his story from above, as a proud observer and faithful describer of the natural and cultural truth. But more than that, he separates himself, and European scholars, from

41 Oviedo (1535), p. 436.
42 Oviedo (1535), as it is translated and presented in Gudger (1919a), pp. 299–230.
43 Fudge (2000).

the illiterate and ignorant Indians whom, like an uneducated child, believe they are talking to fish. For him, his own intelligence lies in his wide travel experience and in what he has seen in other seas – "*many times in this large* Oceano *Sea I have seen theses* reversos *attached to such fish as sharks and turtles*."[44] – while the poor Indians, despite using an extraordinary fishing method, were simply relying on the intelligence of the fish.

But the use of *pexe reverso* to hunt sea turtles and fish has been previously reported by Ferdinand Columbus, Bartolomé de las Casas, and Pedro Mártir de Angliera, as a very odd and new way of fishing used by local people. They employ small fish, held by a line to their tails, which throw themselves at other fish.[45] Based on the first observations of Christopher Columbus, the story of the sucking-fish being used as a hook for fishing recurred from the mid-16th century all the way up to the 18th century, and thus became inserted into the annals of European natural history treatises. It is repeated many times as an extraordinary achievement, by the fish themselves – the remora and the manatee or turtle or sharks, which were connected through the hunt – as well as by the Indians that domesticated them to start with. The *reverso* fish were kept and grown by the local fishermen, who trained them to hunt in the sea like a falcon in the air.[46]

We find it first in Gessner's works, and later in Aldrovandi's books and images. One of the captions of Aldrovandi's *tavole* illustrations refers to the fish – *Reversus indicus aculeatus* – as one that hunts like a hook, and the image shows it as a large spiny fish connected to a boat by a rope while attached to nine individual fish and one seal. The other caption refers to the *Reversus indicus alius angulli formis*, or *Guaiacanus dicitur Hispanis*, and the image shows a large, serpent-like fish held by a rope at its neck, being held by one man in a boat while the fish is attached by the head to a seal, and a sea turtle stands at its side. The latter is inspired by the illustration published in Gessner's *Historia animalum*,[47] which is well known for being a great compilation of information from a variety of sources where the image had as much importance as the word.[48]

These naturalists were the product of the Renaissance and of the great complexity of forces and efforts that were produced in early modern

44 Oviedo (1535), p. 436.
45 Gudger (1919b).
46 Santa Cruz (1984) [1505–1567], *Alonso de Santa Cruz y su Obra Cosmographica*, pp. 304–305.
47 Gudger (1919a).
48 Egmond & Kusukawa (2016), *Circulation of Images and Graphic Practices in Renaissance Natural History*.

Europe.[49] A respect for nature and for empirical knowledge, a curiosity and need to understand the world and its parts, and strong networks of contact and correspondence within and outside Europe allowed these scholars to study and define the course that natural history, zoology, and ichthyology would develop worldwide. I will pay detailed attention to the production of natural history knowledge of the tropical marine and aquatic world, reaching and being constructed in Europe in the final chapter of this book. But it is important to notice that Renaissance naturalists tended to be as scientific as possible, moving away from personal impressions or feelings about the animals being described. Either practitioners or encyclopaedists, most of these scholars aimed not only to record all that they knew personally about fishes and aquatic animals, but also to incorporate into their great tomes the knowledge of their fellow workers and of all the writers of the past.[50] European encyclopaedists such as Conrad Gessner and Ulisses Aldrovandi tried to encompass it all but failed to some extent, as I will discuss later. But it is obvious that networks of exchange were established and the high degree of circulation among these networks of naturalists, scholars, collectors, and intermediaries would allow the first to get new information on marine species.[51]

However, accounts of the Portuguese and Spanish extra-European empires were greatly dismissed or simply ignored and, today, are still usually overlooked. They circulated mostly in manuscript forms and held utilitarian, pragmatic, and commercial aspects that were set aside by European natural history and philosophy traditions.[52] So, in Renaissance naturalists' works, sea cows, sea turtles, seals, large fish, and cetaceans are sometimes described but in rather generic terms – such as the sheer occurrence of some of them in nearby shores – and not as a new Atlantic or tropical species. Nevertheless, alongside *Matto* and other accounts of manatees for the West Indies and Americas, and the myriad of other marine animals living or interacting with them, many descriptions of aquatic animals are found in the Iberian productions of natural history. Amazonian manatees, for instance, are found in numerous accounts of European colonial empires (Figure 18). Descriptions are plenty and rich and, likewise, they are spread throughout the Caribbean basin shorelines as in its main riverine systems, as well as disseminated by many different Iberian scholars.

49 Gudger (1934), *The Five Great Naturalists of the Sixteenth Century.*

50 Gudger (1934), p. 32.

51 Egmond & Kusukawa (2016), p. 66.

52 Cañizares-Esguerra (2006), *Nature, Empire, and Nation*, pp. 23–29.

The first manatees to be described in South America were probably those found on Brazilian shores and described by Portuguese authors. Of course, we now know that we are talking about two different species of manatees – the Amazonian and the West Indian manatee, which, in the past, overlapped in their distribution in littoral areas and river mouths in South America. At that time, the *Iguaragua* or *Goaragoa*, or even *Guaragua*,[53] filled up the minds and lives of those living by the rivers and other aquatic masses who were in close interaction with aquatic animals.

One of the first descriptions of the manatee in coastal South America comes from the letters of Father Joseph Anchieta, in which he regularly reports on the region's fauna. It opened a new era of natural history knowledge based on information obtained from the *Tupi* zoonym by Jesuits in colonial Brazil.[54] In his letters dated 1560 and 1585, he describes the manatee (most probably *Trichechus manatus*) as a fish,[55] like many of the writers who followed, although sometimes it is said to look like a *tonina* or a dolphin,[56] or that its reproductive habits and ways were different from those of other water animals.

> There is a certain fish, which we call the sea ox, the Indians say iguaraguá, common in the Captaincy of the Holy Spirit and in other places to the North, where the cold is not so rigorous…it feeds on herbs, according to the chewed grasses on the rocks bathed by the mangroves. It exceeds the ox in corpulence; is covered with a hard skin, resembling the colour of the elephant; next to the breasts it has something like two arms it uses to swim; and underneath them it has tits where their own children suck; its mouth is entirely like that of the ox. It is excellent for eating, you would not be able to tell whether it is meat or fish; from its fat, which is inside the skin and especially around the tail, when taken to the fire, is made a sauce, which may well be compared to butter and maybe it is even better; this oil is great to season all kinds of food: its whole body is full of solid and very hard bones, that may even replace ivory.[57]

53 Lisboa (1967) [1647], *História dos Animais e Árvores do Maranhão*, p. 60.

54 Papavero and Teixeira (2014), *Zoonímia Tupi nos Escritos Quinhentistas Europeus*, p. 85.

55 In the early modern age, the word fish could simply mean any or all animals living in the sea. E.g., Leite (2014), *Animalia Exotica & Mirabilia*.

56 Almaça (S.D.), *Guaraguás, Hipupiaras, Baleias e Âmbar.*

57 Anchieta (1946), *Capitania de S. Vicente*, pp. 11–12; Anchieta (1812), [1560] E*pistola Quam Plurimarum Perum Naturalium*, p. 137.

This was one of many accounts that would follow, with Portuguese authors relying on prior descriptions, and copying one another, or at least being inspired by other writers. Descriptions of the New World abound in literature, letters, natural history, and geographic treatises. Many similarities can be found when comparing accounts. All indicate that the manatee (Figure 19) is undoubtedly an aquatic animal and mention several morphological characteristics, such as their large size and weight, and all the details of its hunting and its use as a remedy and food, as we will see next. All emphasise that it is a special kind of fish because it breastfeeds its calves and needs to breathe above water.[58] The intent to appropriate such exotic and new animals is clear from reading the excerpts of the different authors of that period, either their more naturalist descriptions, or those referring to the ways individuals and peoples (both local and European) utilised these creatures.[59]

The novelty of the encounters, the clash of cultures, and the attempt to apprehend tropical elements of nature and different ways of living in these types of environments in Portuguese America, followed the principles already established for the exploration of, and settlements in West Africa and the Atlantic islands since the early 15th century.

Before the European arrivals on the islands and shores of Central and South America, manatees were first known to them from maritime journeys along the West African shores. Over time, in these regions, they were described by different explorers, humanists, and missionaries, in a way similar to what we have seen so far. But how were they depicted and conceptualised in African cultures and by Europeans exploring the West African shores during the early modern ages? And were there transfers of knowledge and perspectives from Africa to the Americas, or did local perceptions emerge independently and expand globally in different waves of knowledge production and dissemination?

In Africa, locally, manatees were called *ngulu-a-maza* or *mbisi-a-ngulu* in Kikongo. Another common name in different regions was the *ambize angulu*[60] or *Engulo*.[61] In Kimbundu, it was the *dikunji* or *makunji*, the

58 Even though referring to it, and using it, as a fish, its characteristics of an aquatic mammal (reproduction and breathing) were clearly observed and are always mentioned as a result of the empirical and careful observations that were conducted. See Brito (2018), *Connected Margins and Disconnected Knowledge*.

59 Brito (2018); Cardim (1980) [1540? –1625], *Tratados da Terra e Gente do Brasil*, pp. 45–46.

60 Pigafetta (1881) [1591], *Kingdom of Kongo*, pp. 36–37.

61 *Carta do Padre Garcia Simões para o Provincial* (1953) [1575], p. 138.

fish-woman,[62] known in Portuguese as the *cunji*.[63] It was the pigfish or sea cow in English; *peixe-porco*,[64] *baozes*,[65] *pexe bosa*,[66] *peixe-mulher*, or even *asturjão*[67] in Portuguese; and *Lamentyn*[68] in French. We find many words to name manatees or sea cows along the early modern Atlantic shores and in inland waters, as peoples or societies dealt with them from their own specific multitude of perspectives and viewpoints.

> In this River [River Zaire (R. Congo) the largest in the Kingdom Congo] are various kinds of creatures, and amongst them large crocodiles, called by the natives Caiman, also the river-horse above mentioned, and a similar one, having as it were two hands, with a tail like a target. It is called Ambize Angulo, that is, fish pig, for it is fat like the pig, and the flesh is very good, lard being made from it; nor that it taste of fish, although it is one. This pig never leaves fresh water, but eats grass on the banks, having a mouth like a muzzle of an ox. Some of these fish weight as much as 500 pounds. The fishermen chase them in their boats, observing where they feed, then stick them with hooks and forks, and, when dead, draw them out of the water. When cut in pieces they carry them to the king, upon the cost of their life to whoever omits to do so.[69]

As Margarite Hutchinson states in her explanatory notes about the *Ambize Angulu* in the 1881 edition of *Kingdom of Kongo*,[70] according to Merolla, a Capuchin priest who gives an account of the Kingdom of Congo in 1682, it is possible to find the *Pesce Donna*, which has a resemblance to the human form, along the River Zaire. The priest's description of its appearance and habits seems to identify it with the *Ambize Angulo* of Pigafetta. John Ogilby says that it is called *Ambis Angalo* by the inhabitants, but that the Europeans call them *Meremen* and *Meremaids*. According to the latter, this fish is probably the creature known as the manatee, which is found in the rivers of the West African Coast. Its resemblance to the

62 Cavazzi (1965) [1687], *Descrição Histórica dos Três Reinos do Congo, Matamba e Angola*, p. 71; Etambala (2006), *La Faune du Royaume de Congo et de l'Angola*, pp. 185–186.
63 Cadornega (1681) [1942], *História Geral das Guerras Angolanas*, p. 68.
64 Brásio (1969), *História do Reino do Congo*, pp. 35–36.
65 *Carta do Padre Baltasar Barreira* (1606), p. 171.
66 *Relação de Frei André de Faro* (1663–1664), p. 245.
67 Fernandes (1991–1992), *André de Resende e o seu Asturjão Africano*, p. 355.
68 Barbot (1732), *A Description of the Coasts of North and South-Guinea*, p. 592.
69 Pigafetta (1881) [1591], *Kingdom of Kongo*, p. 23.
70 Pigafetta (1881) [1591], pp. 149–150.

human form is not simply a Portuguese story, as the same description is given by locals at that time. For example, a description of the capture of a manatee is found in the account of the ascent of the River Binué by the "Henry Venn" Mission steamer, as narrated in Petermann's *Mittheilungen* in May 1880.

> We proceeded on our voyage up the River Coanza, which is deep and rapid, and abounds with crocodiles, also the hippopotamus and phoca – which the people call Peixe Mulher, or fish-woman – which is an amphibious, cetaceous animal, very harmless. It gazes along the banks of the river without leaving the water; it is from seven to eight feet long, with two small paws or feet, between which there are two large teats. There is a certain bone of this animal to which the people ascribe great medicinal virtue; from its hide are made the whips wherewith the slave-drivers flog the unfortunate slaves.[71]

These West African shores were well known and explored by the Portuguese, who have written about their peoples, cultures, environment, and animals. The most important aspect was always their use; that is to say, a utilitarian perspective always underlies any kind of "naturalist" appreciation of nature and of living beings. Large beasts of the lands and of the sea were described and became very familiar to those settling on those shores and to those living back in the kingdom who received letters, drawings, and ample accounts of Africa's natural eccentricities. Both hippos, the terribly feared sea horses, and the peaceful manatees, the sea cows or fish-woman, were becoming a part of the daily life of settlers, traders, missionaries, and even of castaways.[72] After the first encounters, detailed descriptions of their particularities were no longer needed and people could refer to prior information, oral histories, or written documents. The names of these animals, however, kept appearing in multiple accounts, as did their subproducts.

Different uses were assigned to the animal according to the people that hunted and utilised them. The purpose and motivation to capture and to trade them – either the animal as a whole or its parts, or products derived from them – as well as the techniques employed, depended greatly on the occurrence and abundance of the manatee and on the local trading and cultural practices.

71 "Six Years in W. Africa, by F.T. Valdez," p. 131, in Pigafetta (1881) [1591], pp. 149–150.

72 Brásio (1969).

> [It] has hands and tail similar to the shape of a shield, and is called "ambisse angulo," that is, pig fish, because it is big like the pig, and has very good flesh, and it may be consumed and preserved, it does not even taste like fish, in the case it were fish, and has a muzzle like an ox; and some of them have a gross weight of 500 pounds. The fishermen catch it in their boats, observing the places where it feeds, and then wound it with harpoons or hooks, and, dead, they take it out of the waters and carry it in chunks to the king.[73]

The mighty woman-fish was harpooned and eaten in different West African locations, because it was easy to kill and it did not resist capture. Despite this, it continued to be perceived as a kind of monster by foreigners, though not so much by local people.

António de Cadornega, a Portuguese soldier, states the name of the sea cow among many other animals, in his account of the *Coamza* (Kwanza) River in Angola, which describes the region as well as interactions and, indeed, wars between Portuguese and local peoples. For him, calling this creature the "fish-woman" indicates that it is a delicate animal lacking the strength of a true beast; but, at the same time, is not that pretty, it is a monster.[74] Symbolic attributes are given to the manatee, based on their anatomical and behavioural features, in the same way that the author uses particular adjectives to describe other natural elements. For example, he describes the *Coamza* River as a magnificent water body with many branches and lagoons, or the *Gimbi* Lagoon as a superb and remarkable place from which many sons and daughters are born. He talks of an abundance of sea horses and large lizards, and fish-women in unprecedented quantities, plus many seabass and other "royal" fish, thus demonstrating the good quality of the waters and of the animals contained within them.[75] He offers his readers a depiction of the fish-woman, so that they can be familiar with its natural form. He marvels at the exuberance of this region, travelling its rivers and lands, where he finds water in abundance, allowing for many fertile nations and a large diversity of local tongues, as well as for many castes of animals and diversity of fish and large monstrosities, all of which provide the Portuguese living there, and the Crown, as well as the local kingdoms, with everything they might ever need. A place of greatness, extravagances,

73 Pigaffeta & Lopes (1989) [1591], *Relação do Reino do Congo e das Terras Circunvizinhas*, IV pp. 23–24.

74 Cadornega (1681) [1942], p. 68.

75 Cadornega (1681) [1942], p. 112.

and singularities.[76] In his own words, a multi-diversity of cultures and natures, such as he had never seen before.

Similarly, the Italian Capuchin missionary Giovanni Cavazzi mentions many times in his work that he is only detailing the most singular of the animals, or fish, of the Kingdoms of Congo, Matamba, and Angola, given that there are so many of them and that they are so spectacular. Both works are very rich and use historical sources to understand the African societies, spaces, and environments of the 17th century, but also before that, given that the authors include events that occurred prior to their stay in the region.[77] Their works give us much information about the 16th- and 17th-century Catholic missions in Africa, as well as details of local ways of living. Even though Cadornega and Cavazzi were from different backgrounds and countries, they both demonstrate an intention to keep records of the achievements of the institutions they represented – the Portuguese monarchy and the Papacy – for posterity and to create a memory based on their personal efforts, their own experiences, and local observations. This is relevant to our approach as it offers us today a sense of proximity with the local realities and environments. Moreover, Cavazzi relied on many other accounts and references, including oral African traditions and memories, and the word of local Africans he met.[78] The profusion of information with a historical and ethnographic character on the kingdoms of Kongo, Ndongo, and Matamba is accompanied by a set of chapters in the first part of the work, in which Cavazzi discusses, in this order, the climate and the seasons, agriculture, the trees, fruits, herbs and flowers, terrestrial animals, aquatic animals and serpents, and, lastly, some birds. In total, around fifty vegetable species and similar number of animals are referenced.[79]

In his first book, in the chapter on aquatic animals and serpents, Cavazzi has more than twenty entries on different animals, with four large illustrations,[80] which he included alongside the fish-woman, swordfishes,

76 Cadornega (1681) [1942], pp. 160–161.

77 Oliveira (2010), *Cavazzi e Cadornega*, p. 2.

78 Oliveira (2010), p. 4.

79 Almeida (2005), *A Natureza Africana na Obra de Giovanni António Cavazzi*, p. 2.

80 Both the works of Cadornega and Cavazzi are full of images, but the former features watercolours while in the latter they were probably woodcuts; both were produced later and by memory, and almost certainly not by the authors themselves but by someone contracted to do so (a *riscador* or artist). We do find similarities in some illustrations; however, this is not the case for the aquatic animals, and the manatees, in particular, are really quite different – in Cadornega the watercolour shows a close to real animal in its own natural surroundings, while in Cavazzi we have a hybrid representation of the manatee-mermaid.

flying fishes, sharks, alligators, serpents, and the sea horse. The descriptions are detailed in terms of the anatomical characteristics, but also full of significance concerning the relationships established with the animals or the local (and his) impressions resulting from observing African wildlife. As a scholarly author, familiar with the productions of Classic Antiquity, he frequently relates features of the animals with human behaviours and character traits.

> The so-called seahorse, for being similar to the terrestrial in the head and back, is, however, classified among the fishes, and so it is eaten freely on the days of abstinence. This monster's muzzle is terrifying…It feeds and gives birth in land, although it lives almost continuously in the waters… These beasts, when grazing, are always together, in well-disciplined herds, and thus resemble troops in the field, there being herds of thirty-five to forty individuals, which causes fear to any heart…they are agitated and frantic in the loving periods, fighting for the females with so much value that they never leave the latter without revenge. And they also seem to correspond, and both love their children, that they keep and defend diligently. The naturals, who know this habit, according to time and by some signs, stir away from the sea horse, getting away from the furies of such jealous passion.[81]

Besides anthropomorphising the sea horse, he also states that local peoples are aware of the cycles of the animals, and of nature, and adapt their behaviours and, most probably, their daily activities to them. They rely on the experience of living in and depending on the natural world for survival, and the foreigners are obliged to learn from them.

In his descriptions of travelling in African lands and kingdoms in the mid-17th century, Cavazzi noted that the fish-woman was easy to deceive and catch; it was naturally lazy and slow, probably because of its slow-moving habits and resting behaviour.[82] At the same time, the fable is led back to reality, because Cavazzi estimates that this triton, and its female, are perhaps a naiad, both characters of classical mythology. It is in this way that monsters become real, materialise, and distance themselves from the fantastic beings portrayed in the past.[83] Even if the illustration of his fish-woman shows the animal with a cape that could be worn by a human

81 Cavazzi (1965) [1687], pp. 69–76.
82 Cavazzi (1965) [1687], pp. 69–76.
83 Almeida (2005), pp. 5–6.

being, or with a tail that reminds us of the classical sirens, it is still an image of a real animal.

Cavazzi presents us with the real nature of the vegetable or animal species, however, by reference to its properties, as food or medicine, by implied demands, sometimes, in their utilisation, and by gathering curiosities concerning their qualities or their behaviour, observed or known by hearsay. It was mostly this type of information that fed the "curiosity culture" of collectors in Europe, from the 16th century, and that filled the catalogues of their exhibitions with rarities, facts, and bizarre or exotic objects, albeit the traits of a new naturalist attitude had been enunciated since the beginning of the *Seicento*. In this work, as in many others, the presence of the binomial population-productions leaves its underlying contrary, uninhabited – uncultivated. In this sense, for the author, to speak of nature, to describe the places or to reference, more or less exhaustively, plants, animals, and fruits, is also to speak of the people who live in that space and of the way in which it relates to those elements that use it.[84]

Besides details on the natural history of the animals, references become common in official reports or expeditions accounts. Both the sea horse (the hippo) and the fish-woman (the manatee) are sighted, captured, and killed for purposes other than their utility – knowledge and preservation of information being a relevant aspect for 18th-century naturalists in Africa. They were worthy of being included in the natural history annals of Europe, and detailed descriptions, illustrations (when possible), and skins or other animal parts (if capable of surviving the local weather conditions) would be shipped from Angola to Lisbon.[85]

We could say that different individuals dealt with aquatic animals and their natural habitats, as much as with Nature as a whole, in quite different ways. The same with different peoples. This could be culturally inscribed but it could also be the result of chance – an animal that is captured and kept as a companion; an animal that is a food item or a product to be exchanged and that allows for negotiation. What an animal means to people is not the direct result of the characteristics of that animal; they can have multiple, sometimes contradictory meanings or even uses. Many species that are considered dangerous are also valued for their beauty and utility. In fact, in some cultures, mostly those with a close connection to nature, the

84 Almeida (2005), pp. 3–4.

85 AHU (1784), *Ofício do governador de Angola*. AHU (1790), *Ofício do governador de Angola*.

recognition of danger does not exclude an animal from being valued for its other qualities.[86] For an outsider, at any given moment in time, the proximity of humans and animals might be promiscuous, and this relationship has been addressed by Europeans in their attempts to understand a world that they do not recognise as civil – Indigenous people are seen in terms of their "closer to natural" ways and dependence on wildlife. And if Europeans in early modern Africa and America aimed at domesticating and controlling animals and resources, the same is true of the people – in the same place, land, nature, animals and humans under the control of a superior power.[87]

However, different individuals in the same culture, society, or group can have distinct perceptions according to what they are looking at, what their individual background and experiences are, as well as according to their expectations. People, as groups and as individuals, might have similar or quite distinct perceptions of their surroundings. Culture and worldviews do impact these perceptions and, perhaps, some ancient survival value is also embedded in this stance.

For most people able to come into contact with a living manatee in 16th- and 17th-century Africa or America, the animal was felt to be and described as a gentle giant. Living nearby, fearless of people, and being able to interact, its presence allowed for some relationships to be established and described overtime. Nonetheless, this love at first sight was no impediment to people hunting and using manatees in all possible ways, as we will see further on. In fact, for European in those days, animals were put into the world by God for humans to use and make the most of them. Thus, appreciation did not mean necessarily keeping the animals alive and by their side. At least, not in most situations.

To describe nature is to reveal the ingenious art that balances inconveniences and counterparts. For instance, dew is a cause of great discomfort for the traveller, but without this creation of divine providence plant life would not be possible. The extraordinary ferocity of an animal is compensated by the fact that it is afraid of facing up to men, or the finality of the existence of great forests of a certain tree is to provide for men's needs for cure. The manifestation of power by God over all things of nature does not mean that there is no causal explanation – a natural one, as they would say at the time – for these and other wonders. God, through nature, provides for the needs of men and, often, has a material and effective intervention in men's

86 Nabhan (2013), *Singing the Turtles to the Sea*, p. 126.
87 Almeida (2005), pp. 11–13.

destiny. But, at the same time, the phenomena of nature have a physical explanation, although dependent or subordinated to the supreme designs of the divine.[88]

On the other hand, elements of beauty and acknowledgment, of gratitude and empathy, towards animals were found in local cultures' relationships with nature, which Europeans were aiming to understand. This understanding was implied in their local survival and in the success of colonisation processes. But then, just try to imagine past attempts at understanding Others' reactions and acts in relation to the natural world, in a moment and at a pace at which people were encountering one another and were not attuned to the possibilities of different perceptions and cosmological views. There was an encounter as much as a confrontation between peoples – a certain human group versus another human group – as well as between humans and/against (aquatic) animals – their "radically Other" in all possible senses. No less important, it is quite difficult for environmental historians today to get a glimpse of past ways of life of Indigenous communities and their "ethnoecologies,"[89] because we base our studies on European sources – the European gaze into other peoples' lives – that describe local, "exotic," and not fully logical ecological interactions involving other humans and other lifeforms. However, the colonial descriptions of Amerindians and of the first encounters between local origin peoples and Europeans do offer us some glimpses of the pre-contact lives of those peoples; even if distorted by chroniclers' misapprehensions, these accounts are windows onto the past.[90]

We can try to identify the relative beauty, utility, and danger of the marine natural world as perceived by certain cultures of the past – as of present days – but we need to be aware that these values are ultimately intangible. The thrill of fright created by the sight of a certain marine animal is not something that can be measured, even though we can find some means in each society to express the sense of beauty or fear – ultimately of value and importance – that these creatures have brought to people's daily lives.[91]

Returning, then, to our manatees, they are, no doubt, historically seen as strange and hybrid creatures in all possible senses.

88 Almeida (2005), p. 4.
89 Nabhan (2001), *Cultural Perceptions of Ecological Interactions*.
90 Mann (2011), pp. 35–41.
91 Nabhan (2013), p. 152.

> This animal can scarcely be called amphibious, as it never entirely leaves the water, only advancing the head out of the stream, to reach the grass on the river sides.[92]

The ocean does not just separate and allow for the evolutionary elaboration of cultural differences; in its multiplicity, it also brings about a convergent evolution in the face of a critical, albeit markedly different look at similar natural phenomena or similar species of fauna and flora. The human eye works the same way, although the historical, geographical, or conceptual context is very different. This is the only way to conceive of the existence of hybrid beings in nature – in multiple aspects – those critters from the aquatic masses inhabiting almost all cosmologies, mythologies, religions, and human experiences all over the world. But these hybrids are, most of the time, real animals with real lives and behaviours, and the human glance at them tries to embrace all possibilities.

Besides their physical, albeit confusing anatomy and way of living, many persons, either individually or collectively, might have asked back then – and some of us might ask today – when looking at them, do they look back at us? Are they staring back into our eyes? Do they see us the same way we see them? Can such a different species recognise in each other individual animals, can they see us humans as mammals from different environments? The real and effective relationships, and the intentions (or lack thereof) from the animal side, are still a matter of debate.

There has been much debate on the matter of the mind in animals. Those that are genetically closer to humans – the great primates – took years, decades, to be understood as "close relatives." Much more will be necessary to understand those more distant from our phylogeny, the ones that are more radically different from us, with a certain sense of equality. To consider the old Cartesian question, it means that if an animal has self-awareness, of its existence and of its individuality, then it exists truly like a human person. Some of these animals, primates, some cetaceans – manatees, maybe? – can even be considered nonhuman persons.[93] These are discussions of today, but the accumulated perceptions and the knowledge

92 Goldsmith (1822), *An History of the Earth and Animated Nature*, vol. II, p 340.

93 There is an ongoing debate about ethics, nature conservation, and animal rights, which discusses whether nonhuman primates should be recognised as autonomous "persons," instead of merely being "things" that can be possessed. See Sommer (2017), *Nonhuman Primate Personhood*. For the proponents of this concept, nonhuman personhood may exist in animals that embody sentience, agency, high degrees of cognition, and complex mental landscapes; apes and monkeys, but also cetaceans may be included.

that is (re)created and (re)signified is old, complex, and intricate. We may return time and again to the age-old question – what appears first to the human eye, the animal or the resource, the essence of the living being or its utilitarian purpose?

The utility of sea animals was always a quick and easy way of perceiving them and their potential interest for people. Are they eatable? Are they poisonous? Are there many of them? Where do they live? What can we do with them? Are they food, remedy, or a possible instrument or artefact? In the words of missionaries, colonisers, naturalists, and explorers, which we have been using to approach the perceptions on aquatic animals, to describe nature means, in the scope of a utilitarian vision with roots in the biblical enunciation, to list a potential richness that lies inside the lands, in the core of plants, in the character and viscera of the animals themselves, waiting for the transforming hand of men to realise it.[94] In the modern era, there is evolution towards an increasingly meticulous attention for the observation and organisation of data and information on the natural world and its various components. Most of the time, the new discovery and find is confronted with known knowledge. But that verifiable fact cannot obliterate people's intimate dependency of a utilitarian vision of nature. A finalist vision manifested until today, even if in different ways.

The making of the boundary that separates the human from the beast is important because it is central to our understanding of the many parts of the early modern world and because it raises ethical and societal issues that remain relevant today.[95] Any discourse of nature and of animals is underlaid by a discourse about humans. More than just about the animals, this is as much about the ways in which people define themselves as humans in the face of the animal – in the past and in current days.

The mythification and sacralisation of the manatee changes in the moment humans transform it from a totem into a product. The commodification of the myth changes the kinds of relationships that are established between humans and manatees, and the way different people interact with one another having manatees as a key resource for hunt, trade, and even for science, as I will discuss further on.

Very soon after their arrival to the Americas, Iberian explorers and settlers started to realise how different nature was in the sub-tropical and tropical regions they encountered and how they would need to understand it in order

94 Almeida (2005), p. 14.
95 Fudge (2000).

to control it.[96] Observations of and information about how local societies catching fish use spears or hand harpoons (Figure 20), nets and lines, how they manoeuvered the fishing gear and the canoes to easily pull the fish out of the water, started to be gathered and compiled.[97] This is true with reference to all aspects of nature and its resources, ranging from plants and trees, birds and land mammals, to the much sought-after mineral resources. But it is no less important when dealing with the oceanic and aquatic environments and resources, which were conceived as places of danger and strange possibilities,[98] but also appreciated food items. European people were frequently impressed by American technology, such as the fact that Indian canoes were faster and more manoeuvrable than any small European boat or that a society-wide and organised effort existed for the building of aquatic causeways or fish-trapping.[99]

In every river and coastal area of Central and South America, large quantities of aquatic animals – fish and mammals – were hunted. So, while exploring these places of Central America and the northern parts of South America, Europeans encountered local peoples that in the first meetings offered them products from their daily lives and staple foods (Figure 21). Among the latter would have been manatee or ox-fish, as well as turtles and river fish. These animals, amongst many others, which no doubt provided subsistence for local people and manatees, have historically been used as a valuable resource for Indigenous populations.

Peoples and individuals resorted to different techniques, depending on the geographic region and the Indigenous group, probably also according to the habitat and eventually species and size of each animal. They used harpoons, arrows and crossbows, and sticks, ropes, and nets to hunt them (Figure 22); they dug holes and closed channels and took advantage of tides to push the animals into the shore, and even used lesser-known methods, such as remoras (as we have seen in the previous chapter). In fact, those describing the animals and the ways of capturing them, mention that, given the large quantity and biodiversity of fish and other animals of the many waters in Brazil, it is not strange to see the several ways and techniques, of traps and tricks, that the Indians employed to get them.[100] All of these were

96 Mancall (2018), *Nature and Culture in the Early Modern Atlantic*, pp. 80–84.

97 Mancall (2018), pp. 73–75.

98 A review of the fear in the oceans in medieval and early modern times can be found in Lopes (2009), *O Medo do Mar nos Descobrimentos*.

99 Mann (2011), *1491*, pp. 5, 66.

100 Tavares (1861), *Relatorio A*, pp. 5–6.

very quickly acquired by the foreigners hungry to feed themselves and for exports for their own nations.

According to many authors of the time, and also relating to different Atlantic regions,[101] these creatures were abundant and easy to capture – "sailors cast the net towards the sea, and picked with only one cast, two of these sea oxen. Despite their size, the animals did not break the net, even when only one specimen would be big enough to tear several nets into pieces."[102] They were captured continuously over the centuries, across their geographic range of distribution and, despite the methods of capture, it had to be done by those who were familiar with and had expertise in the technique, and it had to be done in silence and with respect. It continued thus until the end of the 19th century,[103] and is even used to this day in some regions.

For Central America, Oviedo details the ways in which these animals could be captured, and several others who came after him either copied and translated this information, adding to it (upon on new knowledge of new practices or with plain fantasy to embellish their accounts) or even representing it visually.

> The crossbowmen kill them, and in big quantities, with the arch, from a boat or canoe, because they swim on the surface of the water; and as they come, they hunt it, and the shot of the harpoon with which they do it, carries a thin and tarred rope; and it runs away, and the crossbowman releases many fathoms of rope, and at the end there is a stick; and it will have filled the sea with blood, and is tired, and near the end of life, it reaches the shore or the beach, and the crossbowman starts pulling his rope, and there are seven or eight fathoms, or more or less, from the rope to the land, and the manatee comes so far that it touches ground, and the waves of water help it to strand; then the said crossbowman, and those who help him, finish killing it on land; and to take it to the city, or wherever it will be weighted, they need a cart and a pair of oxen, and sometimes two pairs, according to its size. Likewise, before reaching the shore, they put it on the canoe because, as it has just died, it floats on the water.[104]

101 E.g., Gândavo (1980) [1550–1557], *Tratado da Terra do Brasil; História da Província Santa Cruz*, pp. 19–20; D'Abbeville (1874) [1614], *História da Missão dos Padres Capuchinhos na ilha do Maranhão*, p. 354; Cadornega (1681) [1942], *História Geral das Guerras Angolanas*, p. 112.

102 Anchieta (1946), *Capitania de S. Vicente*, p. 16.

103 Junior (1861), *Relatorio C*, p. 6.

104 Oviedo (1995), *Sumário de la Natural História de las Índias*, pp. 145–149.

> These ox fish are caught in the pastures, or in the grasses that grow on the beaches. The natives row their canoes quietly behind them, throwing two or three arrows at them, and only when dead they are pulled to the earth, cut and salted.[105]

The arrival of the first European to the islands and coasts of the Americas increased the impact of human populations on these animals (as they also did on West African shores and rivers). It also reinforced the European understanding of waters as a birthplace of life, of diversity and abundance, even more so in those lands where this abundance was apparently endless. This environment, which was open and accessible to anybody and seemingly inexhaustible,[106] could – and should – be continuously exploited. In addition to being a route in and out of the territories to be explored, rivers, coastal waters, watercourses, and lagoons were quickly appropriated in all their valences.[107]

Bounties of fish are described for the shorelines of Africa, and coastal or inner lagoons are referred to as being remarkable and having a great abundance of aquatic life, including large quantities of peaceful and easy-to-kill fish-women living in the River Kwanza (Angola).[108] Similarly, many descriptions of new places in South America are full of accounts of the plethora of fish in the waters, new grounds to lay off the nets and to guarantee the feeding of those arriving and settling. Besides being a good place for anchorage and shelter, for obtaining fresh water and access to the hinterland, a good port or coastal area would also be measured in terms of the abundance of marine live, that is to say, of available marine resources to be used – "from the bar inwards the river [Real, Brazil] is very deep, there is a bay larger than a league where the ships find great shelter in all kinds of weather, in which there are great manatees' fisheries, and also of other sorts of fish, and has a lot of seafood."[109] It is in the first encounter that the Portuguese and the Spaniards realise how local people use animals, plants, and other elements of nature at their disposal – in this very field away from this lagoon, both at the same level, whose water was very sweet, and had the same sorts of fish, and in both there were many water pigs, which the gentiles killed in big quantities.[110] With this first glimpse, Europeans gain

105 D'Evreux (1874) [1613–1614], *Viagem ao Norte do Brasil*, pp. 12–13.
106 Tavares (1861).
107 Brito (2019), *Pessoas, Manatins e o Ambiente Aquático na América Moderna.*
108 Cadornega (1681) [1942], pp. 67–68.
109 Sousa (1879) [1587], *Tratado Descriptivo do Brasil*, p. 34.
110 Sousa (1879) [1587], p. 34. Many other fisheries are described by the author, see pp. 36–37.

an idea of the value of the local resources. They look, they learn, and then they copy it.

Gaspar de Carvajal describes in his *Discovery of Amazonia* how the manatees were offered to Europeans, who accepted them in exchange for other products. As their expedition progressed along the Maranhão River, "Indians came every day and brought food, such as manatees and turtles, as well as other kinds of fish [actual fish] in exchange for goods the Captain gave them." In fact, "the whole territory provided sustenance, food consisting of manatees and fish."[111]

Soon after the first encounters, we find descriptions of the resources being explored both by Amerindians and Europeans, increasing their efforts to capture the populations, and the impact on their ecosystems. This is the case for the Arrecifes Bay (Brazil), a place referred to by Gabriel Soares de Sousa as having such good water quality that manatees would gather in large numbers. Here, they would be hunted by the *Potiguara* Indians using hand harpoons as well as by the caravels passing by and which would take shelter in this bay.[112] The techniques of fishing and capturing sea resources varied among the different local societies, and between the Indians and the newcomers (Figure 25). These differences are also reflected in the purpose of the catch or the hunt – local fishers would hunt for food while Europeans might use nature's resources for food, but also for cash through trading and commercial networking.

We cannot be sure if the Tupinamba society – we know them from the Portuguese Americas, as a powerful and complex group from the South American littoral – were manatee hunters. They almost certainly lived by the shoreline and were excellent fishers (Figure 26). They chose places to live that were close to wood and water supplies and to the resources they hunted, and they moved to different locations when the resources available become sparse. They used to travel long distances along the shores in their lengthy and highly hydrodynamic canoes, even though not venturing more than two miles off the shoreline. And they carried their bows anywhere they would go, both on land and at sea.[113] There is also the possibility that they settled nearby former shell middens, as these places have revealed evidence of nearshore abundance and marine resource use.

111 Heaton (Ed.) (1934), *The Discovery of the Amazon According to the Account of Friar Gaspar de Carvajal and Other Documents*, pp. 416–419.

112 Sousa (1879) [1597], p. 12.

113 Staden (1930) [1557], *Viagem ao Brasil*, pp. 134–136, 156.

Sambaqui (shell middens)[114] builders had dominion over fishing as an activity and thus they might have overexploited certain species that are currently vulnerable, thereby marking the possible beginning of the exhaustion of fish along the south-eastern coast of Brazil. These shell mounds primarily record prehistoric fisheries, however, many rare species with no commercial use today have been registered, indicating that accidental catches are probably an important source of ichthyological remains in *sambaquis*,[115] or that availability or access, or even preference and taste might have been different. Aquatic mammals seem to be much less frequent in such structures, but the societies that left the sell mounds were hunters and gatherers of marine life and cetaceans was also found among their food sources.[116]

In his descriptions and depictions, Hans Staden,[117] a Dominican missionary who lived among Tupinambá groups (or Tupinn-Inbá) as their prisoner in the mid-16th century, recorded their ways of fishing using nets, arrows, and bows, and their great ability to catch animals from the sea and waters. They were skilled in striking large fish and capturing them, either alone or collectively, and, if needed, quite able to swim or dive underwater after a wounded prey (Figure 26). They were very familiar with their natural surroundings and with what nature could offer them; they would also distribute their catches among the village and the different resources from the sea would serve as food items on any given occasion. The author also refers to other local people, from different societies far from the shore, coming to the

114 *Sambaqui* is the Brazilian word for shell mound, which derives from the *Tupi* language (also known as *concheiro*); it is applied to cultural deposits of varying size and stratigraphy in which shell is the main constituent and encompassing accumulations with a range of origins and functions. These are widely distributed along the shoreline of Brazil and were noted in European accounts as early as the 16th century. They typically occur in highly productive bay and lagoon ecotones where the mingling of salt and fresh waters supports mangrove vegetation and abundant shellfish, fish, and aquatic mammals and birds. See Gaspar (2008), *Sambaqui* (*Shell Mound*) *Societies of Coastal Brazil*, pp. 319–335. As we know, many prehistoric (and more recent) coastal populations have exploited the faunal resources of adjacent aquatic environments. The remains of this exploitation were often deposited in the vicinity of settlements forming mounds known as shell middens; composition, internal structure, or the spatial and temporal distribution of these shell middens represent a valuable source of information about human dispersal, site-specific occupation pattern, subsistence strategies, associated dietary preferences, or fishing and foraging seasonality. See Müller et al. (2017), *Prehistoric Cooking Versus Accurate Palaeotemperature Records in Shell Midden Constituents*.

115 Mendes, Silva, & Duarte (2019), *Can Sambaquis* (*Shell Mounds*) *Be Used as Records of the Holocene Marine Fish Biodiversity?*

116 Castilho (2008), *Utilization of Cetaceans in Shell Mounds from the Southern Coast of Brazil*.

117 Staden (1930) [1557], pp. 138–139.

coastal regions to fish in large quantities and transporting their catch either dried or turned into flour – they did not use salt to preserve food. Locally, fish is eaten fresh, or, if preserved, either smoked or sundried, sometimes with pepper and afterwards turned into a kind of soup.[118]

The Tremembé society, the so-called enemy of the Tupinambá, was also a fisher-native society, depending mostly on fishing, hunting, and gathering of seafood along the shorelines of current day Ceará, in Brazil. Known as a strong and fearless people, they, too, were excellent fishers and known as shark hunters. They were able to maintain their subsistence – and even some degree of independence during the early colonial period – from the sea and the shores.[119] Agile users of arrows to capture fish, they would also gather ambergris – called *Piraputy* by the Tupinambá, meaning "sea droppings" – among other sea resources. There has been some speculation regarding whether they hunted whales.[120] Nevertheless, they were knowledgeable about the best fishing grounds and were nomads, moving in search of their preferred food items.[121]

Other South American native societies were also "sea" groups and would move from their regular location to other places with abundant fishing grounds in certain months of the year, according to the Capuchin missionary Ive d'Evreux writing about early-17th-century Brazil.[122] These groups would capture fish, hunt crocodiles, sea turtles, and certainly manatees – all the sea resources available to them. Even though their dependence on the sea is clear, as is their knowledge of resources distribution, seasons and availability, the development of techniques, and the regularity of fishing practices, the degree of social and cultural complexity based on this relationship with the aquatic environment is still to be clearly understood and more research into this topic needs to be undertaken in the years to come.

We know now, however, that, in the 16th century, several Amerindian societies were true fisher-gatherer-hunter societies that depended on sea resources as much – if not more – as on land resources. The Calusa, from southwestern Florida, captured, stored, and traded fish and other seafood. Moreover, they constructed complex walled structures called watercourts, which functioned as large-scale fish traps and storage facilities for live fish surpluses. These were built from shell and other sediments that implied not

118 Staden (1930) [1557], pp. 143–144.
119 Filho & Cabral (2014), História dos Tremembés, pp. 13–14.
120 Paiva (1968), *Uma Hipótese Histórica*, pp. 95–98.
121 D'Evreux (1874) [1613–1614], *Viagem ao Norte do Brasil*, pp. 178–180.
122 D'Evreux (1874) [1613–1614], p. 199.

just knowledge of the ecology of marine fauna, but also of tidal systems and hydrology.[123] These were local Indigenous societies, with a high social and political complexity, which relied upon aquatic resources and that might have had an impact on their environments, eventually deeply impacting coastal ecosystems.

The Calusa were capable of exploiting their coastal ecosystems and of taking advantage of them by transforming them. They were able to create anthropogenic islands and construct channels and structures, and to control consistent and vast networks of communication and trade. At the time that Europeans began landing on their shores, they were possibly the only example of a high level of political complexity (usually associated with better-known polities of the Americas, such as the Maya) – a complexity supported not by large agricultural surpluses, but rather by the bounty of the sea.[124] But other Indigenous societies or nations were admirably adapted to the exploration of marine and aquatic resources, where large fauna are included as typical resources. For the classical Mayan civilisation, manatees were also an animal and product on demand, both for coastal and inland groups. Archaeological remains indicate their use as food, but also as tools.[125]

Also in Florida, early accounts show us that the Timucuan people hunted manatees from canoes, lassoing them, and driving a sharpened stick or crude harpoon into their noses to stop their breathing, and thereby keeping them from submerging. The animals were then worried to death,[126] the Indigenous weapons being of such a calibre as to allow for their immediate dispatch. The Mayans were said to harpoon the beasts,[127] a practice followed by the Amazonian peoples whose harpoons were made of shell.

According to Joseph Gumilla, the Orinocan peoples had astonishing skills for hunting manatees. They would paddle their canoes gently, scanning the water surface, and looking very quietly for the animal – they pursued

123 Thompson et al. (2020), *Ancient Engineering of Fish Capture and Storage*.

124 Thompson et al. (2020), *Ancient Engineering of Fish Capture and Storage*.

125 McKillop & Aoyama (2018), *Salt and Marine Products in the Classical Maya Economy*, p. 10950.

126 Baughman (1946), *Some Early Notices on American Manatees*, p. 237.

127 Landa (1941) [1566], *Landa's Relacion de las Cosas de Yucatan* vol. 18, pp. 190–191. Baughman (1946), p. 236, also states that a more modern writer, who testifies to the comparative plenty of sea cows in Honduras, mentions them repeatedly as occurring in Belize and other places on the Honduran coast, and who says that one particular location, "Mojo Cay was evidently used by the ancient Maya as a fishing station, to which they resorted to capture manatee, or sea cows, and to fish, as innumerable flint spear heads have been found here, with thousands of circular pottery rings, probably used as net sinkers. Many tons of manatee bones have been washed out from the northern end of the cay, where they had been dumped by the ancient inhabitants, who doubtless struck these great, unwieldy mammals with flint-headed lances."

the beast in the utmost silence (a point insisted on by most writers).[128] Two people were in a canoe, the paddler and harpooner, most of the times a couple, the woman paddling and the man standing and ready for the harpooning. They used a double-barbed harpoon tied to their canoes by a rope of manatee hide and tired their swimming prey by pulling and letting go of the rope until it stopped and rose to the water surface. When that happened, they would butcher the animal to kill it.

> And now what shall we do in the middle of a river a league wide, with a manatee of twenty, or even of thirty *arrobas*, almost as long as the canoe? How, between husband and wife alone, will they put the Manatee into the Canoe, in a place where there is no bottom for the feet to stand on? The singular manoeuvre, which they practise every day, is in this way: they both throw themselves into the water: with their feet and one hand they swim, and with the other hand they put in the edge of the canoe, so that it takes in water, until it is almost full. Then, with great ease, they remove the canoe and place it under the manatee, and taking a vessel, called a *Tutuma*, which they carry on their heads, fitted like a cap, they begin to draw water from the canoe, and as they drain it, it rises and overflows, and as they do so, the water rises and overflows, and as they drain it, it rises and over-watering, and receives in its cavity the *Manati*, so that, having drained the water inside, the canoe has already received on itself the weight of the whole Manatí, leaving on the water enough edge to navigate: Then the man climbs up, and sitting on the head of the Manatee, and the woman on the tail, they go sailing with their bow to the Port, where the relatives of the Fisherman are already waiting, and those who are not; and there is no poor man, because it is distributed with great liberty.[129]

So, once the manatee was killed it was loaded into the canoe in this most ingenious manner – both hunters leaped into the water, holding on to the sides of their vessel, and tilted it so that it filled with water. The canoe was then easily pushed under the manatee, and by means of bailers, which until now they had worn on their heads like a cap, the canoe was emptied, and rose with its load until it could once more be paddled. The manatee captured (Figure 23) would be brought to the village in this manner, as they might

128 E.g., Ferreira (1903) [1786], *Memoria sobre o Peixe Boy*, p. 170.

129 Gumilla (1750), *Historia Natural, Civil y Geográfica de las Naciones situadas en las Riveras del Rio Orinoco*, Tomo I, Cap. XXI.

have to navigate far and long to find the animal.[130] A similar method is said to have been used by the native peoples of the River Negros.[131]

The great ability of Oricono groups and societies as fishers and hunters of large aquatic animals – manatees among them – was recorded by several travellers and writers of the time. Filippo Salvatore Gilii states that they are the brave fishers of manatees.[132] This Jesuit priest spent eighteen years in missions in the Orinoco River in Venezuela and provided inside information, for European eyes, about the Portuguese and Spanish colonial possessions and the ways of doing and exploring resources. He offers a great perspective both on traditional ways and on foreign ways, and how both became one at a certain point. Gilii's compiled information about the manatee results from the knowledge obtained from Indigenous peoples, but he also refers to several authors whose descriptions of the animal he had read.[133] He also added information obtained from the Spaniards of the time (18th century), which today helps us to understand both Indigenous and foreign methods for dealing with and hunting the animal. The methods and techniques are similar, but new, more durable materials, and a greater intensity were employed in fishing by Europeans. Not really a contrast, rather an increase in success and demand.

The Tamanachi native group of the Orinoco River would employ different techniques to capture fish and other aquatic animals – hooks of different sizes and shapes, probably made from fish bone; pieces of vegetable or fruit to hit the water surface and to attract their prey; or, when the river flooded, they also used nets or some kind of basket. They would also construct some traps or nets to close some smaller parts of water courses; the fish would be kept alive in these temporary enclosures and then fished even when the water had retreated. These were all clever ways to entrap and capture fish in such numbers never seen before in other parts.[134] The latter – tidal or flood pools, either natural or manmade – are probably an efficient way of capturing manatees and they are consistently mentioned as a way of interacting with the animals. And, as seen before these interactions, two times of relationship could be established – one of companionship and empathy, the other solely predatory and with no sentiment towards the animal.

130 Gumilla (1791), *Historia Natural, Civil y Geografica de las Naciones Situadas en las Rivieras del Rio Orinoco.*

131 Baughman (1946).

132 Gilii (1790), *Saggio di Storia Americana*, Tomo 2, pp. 163–164.

133 Gilii (1790), Tomo 3, p. 225.

134 Gilii (1790), Tomo 2, pp. 324–325.

In the small affluents of the Orinoco and Madalena Rivers, manatees were still abundant by the mid-18th century, which was not the case everywhere in the Americas. The locals used to kill the *Manati*, a well-known animal with a type of toothed spear and with grateful enthusiasm. At that time, they – Amerindians and Spaniards – also used iron ones, more useful for piercing their skin.[135] In fact, in this region, the Spaniards usually fished for manatees with their slaves, and, in addition to the meat from which they fed, they greatly appreciated the skin, which could be twisted and use as ropes, instead of hemp ropes, and to form small sticks with the thickness of a thumb.[136]

All the foreigners venturing in such places would join a manatee hunt, the quality of their flesh being memorable and spread by word of mouth.[137] Settlers, missionaries, pirates, and merchants all went for the same meat; some to eat locally and to use it as a food item, others to include it in the networks of long-distance commerce. Fresh meat, salted meat, or smoked meat. Meat turned into *mixira* – a seasoned pot of fat and meat to be stored and transported.

Many other local societies hunted manatees, such as the Corentyn River Arawak, who used a three-pronged fish arrow to shoot manatees, generally hunting by moonlight.[138] Others speak of manatees being caught in a strong net and killed by driving wooden plugs into their nostrils, a method followed in Honduras and in Guiana, where the animals were trapped by the use of weirs or fences.[139] Using the channels leading from the large lakes into the rivers, native peoples built these structures across them with thick stakes, crossbeams, and supports, with a whole village lending a hand. As the turtle and manatee came down from the lakes, they were blocked by these fences. Notwithstanding the great strength of these structures, they needed to be repaired two or three times a year, so great was the impact of the shoals of fish, turtle, and manatee running against them.[140]

> The savages hardly use the harpoon for fishing for the Big Tortoise & Lamentin, which they regularly fish every year. This fish is very common throughout the Amazons River. It is also found in quantity in Cachipour,

135 Gilii (1790), Tomo 2, p. 236.

136 Gilii (1790), Tomo 4, p. 202.

137 Trevoux (1744), *Histoire des Avanturiers Flibustiers Qui se Sont Signalez Dans les Indes*, Volume 1, pp. 372–376.

138 St. Clair (1834), *A Soldier's Recollection of the West Indies and Americas.*

139 Wallace (1890) [1853], *Travels on the Amazon and Rio Negro*; Baughman (1946).

140 Gumilla (1791).

> Ouyapok, & Aprouak. The Indians call him Couioumourou. The Portuguese in Brazil call it Pege-buey, because of its size & face, which they compare to an Ox…when it rains abundantly, this fish remains in small holes, where it feeds on Moucou-moucou herbs. The months of July & August are the months in which we usually do this kind of fishing. Three or four Indians get into a canoe. They paddle, as they talk in the country, or they row very gently; & we only speak by signs, because this fish scampers at the slightest noise it hears. So we go where we know the manatee is grazing. As soon as you see him, we drift on him, and at the same time we throw the harpoon at him, in the place where he can be caught. We let the line slip, which is as big as a finger, 30 or 40 fathoms long, so as to let it throw its own, as the Caterers speak. Care was taken to attach a piece of driftwood to the end of the line, which is used to mark the spot where the fish are stopped. When the line is found, it is usually a mark that the manatee is tired. He is still being harpooned in order to finish killing him. There are some who are sometimes forced to dart up to 5 or 6 harpoon hits. As soon as the fish are no longer able to make the slightest resistance, the line is moored behind the boat, and it is hauled ashore. The manatee is the most nourishing of all poisons. The skin, which is three finger widths thick, tastes the same as beef trotters when cooked, and the flesh tastes like pigs. You would really believe you were eating meat, if you did not know that it was fish…The Indians, among whom salt is scarce, content themselves with having them smoked, as well as the other fish, and this is, so to speak, the only way of all the Indians to prepare fish and fish.[141]

In this part of the world, the European toponym may also be indicative of the value of the extraction of manatees. In Jamaica, we find a Manatee Cove, a Manatee Bay,[142] and even a Montego Bay,[143] named after *manteca*, or lard or butter in Spanish, referring to the place where manatee lard was shipped from. Toponymic evidence for the exploitation of sea turtles is also common, especially in the British empire – turtle points, turtle coves and bays, are scattered through the cartography and documental sources.[144]

We now know, mostly from archaeological studies, that in some coastal areas of the world peoples focused on mass harvesting and live storage of

141 Barrere (1743), *Nouvelle Relation de la France Equinoxiale*, pp. 159–162.
142 Thornton (1702–1706), *The Island of Jamaica*.
143 Buisseret (2010), *Jamaica in 1687*, p. 150.
144 Buisseret (2010), pp. 230–242.

marine species to build surpluses and fuel economic specialisation. As part of living in these environments, peoples who settled islands and coastal regions developed sophisticated technologies for fishing, hunting animals (such as whales, pinnipeds, and birds) and storing foodstuffs from the sea.[145] For instance, the Miskito built turtle "kraals" – a long-running nursery or *vivaro*, which was a bamboo stockade for the containment of live turtles; probably from the Portuguese *curral*, the Spanish *corral*, or the English crawl. These structures allowed for keeping turtles in stock plus having a readily available supply. Domestication of wild aquatic fauna is quite difficult, not to say impossible.[146] But keeping them alive in enclosures is perfectly plausible and possibly a current way of granting access to and controlling these resources. Appropriation of mobile – and usually untameable – marine resources is a way of surpassing natural constraints, responding to demand, and allowing for regular food supplies: "they are here daily supplied with manatte and good tortoise, the calapee of which is a prickly dish."[147]

Matto, the manatee, might have been domesticated for food, as many other manatees seem to have been by Native American groups and, following the European Colonisation, appropriated in colonial urban areas.[148] Undoubtedly, sea resources were as equally abundant and equally important as land resources. Marine resources were a fundamental part of subsistence for coastal peoples in the Americas, however, the use of mariculture is virtually unknown.[149]

The multiple ways to hunt the manatees and the number of different techniques employed show that they were, in fact, a common prey for different Amerindian nations and societies across their (historical) distribution range, and that their populations were continually impacted by pre-Columbus and pre-Cabral arrivals to the continent. Local peoples did impact their ecosystems and transformed them according to their needs, as much as they depended on them, not just in the hinterland, but also on the shores – including humanised infrastructures.[150] This also shows these societies' cultural and social adaptations to the aquatic environment and the plurality of ways of living in and with nature (Figure 24).

145 Fitzpatrick (2020), *Ancient Aquaculture and the Rise of Social Complexity*.
146 Harris (2020), *Maritime Cultural Encounters and Consumerism of Turtles and Manatees*, pp. 797–798.
147 Buisseret (2010), p. 238.
148 Helms (1984), *The Indians of the Caribbean and the Circum-Caribbean at the End of the Fifteenth Century*, pp. 50–52.
149 Fitzpatrick (2020).
150 Van Hoose (2020), *Sophisticatedly Engineered 'Watercourts' Stored Live Fish*.

Going back to our aquatic animals, "domestication" and commodification (of turtles, for example, but eventually also manatees) allowed for a demographic increase in such Indigenous communities and a complexification of social and hierarchical structures. Change in patterns of use and exploitation and interruption of access to these controlled (tamed or domesticated) resources, allowing for survival during climatic and environmental adversities, led, alongside the arrival of Europeans, to a drastic change in the availability and use of water resources.

In the light of European expansions into the South Atlantic and their imperial networks, obtaining knowledge about a new world was undoubtedly a strong stimulus, both to look at the world from a new geographical and cultural perspective, and – through descriptions of the novelty, exoticism, beauty, and strangeness of nature – to appreciate its value as an economic resource. Moreover, like the lands and the people, natural resources – in this case, aquatic animals – were susceptible to appropriation.[151] Europeans had conquered the tropics and its natural richness, turning those portions of it that had commercial value – Indigenous labour and expertise (Figure 26), turtle and manatee oils and meat, wild spices, and other elements of flora – to their own short-term profit in ways that precluded sustained economic exploitation.[152]

These changes were not only to the natural environments, on which they depended or related to, and which only made sense in this way, but also, and consequently, they were dramatic changes in social and cultural previously existing structures. Such changes may have been so rapid that they were not even noticed and thus not reflected in European documental sources – only the absences remain in the historical records, such as the lack of social and cultural complexity and the interdependence with the natural family members of some of these societies.

The encounter with new people and new animals also creates room for many types of conflict, including moral conflicts. For the European priests, religious laws and obligations were to be taken very seriously – fasting, among them – all the more so in distant and foreign lands, dealing with such different peoples. God was everywhere, in every creature for sure, and he saw it all. And a God that created manatees would see men eating

151 Vieira & Brito (2017), *Brazilian Manatees (Re)Discovered*.

152 Bunker (1984), *Modes of Extraction, Unequal Exchange, and the Progressive Underdevelopment of an Extreme Periphery*, pp. 1027–1028; Brito & Vieira (2016), *A Sea-Change in the Sea? Perceptions and Practices Towards Sea Turtles and Manatees in Portugal's Atlantic Ocean legacy*.

them. According to Oviedo,[153] they had the best flavour of all the fish in the world, and thus they were very sought after – it was a nice fish to have with cabbage and other vegetables – the manatee not only looked like a cow, it also tasted like a cow. At the sight of a slice of this excellent flesh, no one would assume it was fish, and anyone tasting it was left in no doubt that they were eating meat – cow for sure, veal possibly. For Brazil, Pêro de Magalhães de Gândavo mentions the same qualities when referring to those manatees eaten in that region in a rather similar fashion – it is a tasty meat-looking flesh "both in aspect and flavour." "And roasted is no different from pork loin. It is also boiled with cabbage or made in a stew like meat and thus no person eating it will think it is fish: unless you know it beforehand."[154]

Father José de Acosta stated that he accepted the consumption of manatee meat on Fridays. But he had strong doubts about it because this was a real animal that gave birth to and suckled calves, although it lived in the water. Many missionaries and Christian friars were scrupulous about eating manatees on holy days:

> In the islands that call Barlavento…there is what they call manatee, a strange kind of fish, if it is possible consider fish an animal that gives birth to its offspring, and has teats, and feeds them with milk, and eats grass in the field; but in fact it lives usually in the water, and for that reason they eat it like fish, although in Santo Domingo when I ate it on a Friday, I was scrupulous, not so much for eating it but because it tasted and looked exactly like veal.[155]

But, at the same time, it was normally consumed as fish in the islands of Cuba, Santo Domingo, Puerto Rico, and Jamaica,[156] and manatees and sea turtles were a main provision and an important food item for the different levels of colonial societies.[157]

Cristóvão Acunha, referring to fish and the oldest fisheries in the Amazon, also mentioned that the fishermen collected seafood abundantly in this river and that there were all sorts of different types. He also tells that it was part of the dietary habits of the native Indigenous groups and that, "it is the king of fish, populating the whole river from where it begins until it

153 Oviedo (1535), pp. 433–434.
154 Gândavo (1980) [1550–1557], pp. 19–20.
155 Acosta (1590), *Historia Natural y Moral de las Índias*, p. 7.
156 Heaton (Ed.) (1934), p. 329.
157 Barbot (1732), *A Description of the Coasts of North and South-Guinea,* p. 592.

flows into the sea, and only in the name it is fish, as everyone who eats it, thinks it is seasoned meat."[158]

The manatee very quickly became a favourite food for Europeans in the Americas in the 16th and 17th centuries, given its abundance and ease of capture, as well as the possibility of easy observation and appropriation of local uses. Vasconcellos said, regarding colonial Brazil, that "[it was] very special the innumerable quantity of ox-fish and turtles, so that the people could make piles and piles with them"[159] and that "ox-fish are very common: they are cooked like meat, with cabbage or rice and may cheat those who do not know, as it looks and tastes like beef."[160] In his long and detailed description of the animal, Labat states that "the manatee's fat is very good; it turns easily into an oil that does not become rancid and may be used for several purposes."[161]

The newcomers utilised and consumed manatee meat with some scruples, but soon realised the value of this animal, and the settlers began to use it as a common food.[162] The possibility of obtaining and trading commercial and valuable resources obtained from manatees – and other aquatic animals, such as turtles – butter and a "kind of meat" that could be eaten on holy days, was highly attractive to the settlers and European merchants. Europeans became the new experts in hunting and trading manatees and their products. According to Oviedo,[163] the Spaniards hunted them with crossbows, tying a cord to the end of the bolt, which was discharged at the animal. A float was tied to the end of the cord and thrown overboard to mark the position of the manatee, and to facilitate its recovery when it became exhausted from exertion and the loss of blood.

Even though it might have felt to the newcomers that they were arriving at a place of endless possibilities, a close-to-pristine environment with paradise-looking landscapes, plants, and animals, they were, in fact, reaching land occupied for hundreds (or thousands) of years by groups of peoples with distinct structures and technologies used to get the most out of their own resources. Land and forests were deeply transformed and some animal's populations, both from the land and the sea, had been exploited in a continuous manner for a long time. The so-called pristine myth is nothing

158 Veríssimo (1970), p. 131.

159 Vasconcellos (1668), *Noticias Curiosas, e Necessarias das Cousas do Brasil*, p. 36.

160 Vasconcellos (1668), p. 280.

161 Labat (1722), *Nouveau Voyage aux Isles de l'Amerique*, pp. 206–207.

162 Veríssimo (1970), *A Pesca na Amazónia*, p. 138.

163 Oviedo (1535) [1851–1855], *Historia General y Natural de las Indias, Islas y Tierre-Firme del Mar Océano.*

but that – a myth.[164] Europeans were preying on long-impacted natural populations. Manatees have long served as an important food resource for the Indigenous peoples of the Amazon Basin and have been hunted since time immemorial, as evidenced by bones found in shell mounds.[165]

European learning from local ways of capturing and utilising the animal and the appropriation of this knowledge, transformed the intensity of the exploration of manatees and how this process developed in the following centuries in the colonial Americas. The development of hunting techniques is also supported by the Iberians' experiences in their own kingdoms, as well as on the Portuguese experience on the shores of West Africa. For instance, in the Kingdom of Congo, missionaries often reported eating both the meat of the sea cow and of the sea horse.[166] Settlers adapted their own ways of capturing large marine or aquatic fauna, but in the case of manatees they were pursuing pre-existing patterns of exploitation developed by the local people who used manatees as an important resource.[167] And by doing so, they disrupted established systems.

There is much we can say about the different pre-modern societies exploiting aquatic resources and their relationships with the aquatic ecosystems. Humans and nonhumans' co-dependence – or better, co-existence – on their environments. Humans being socially, economically, and culturally impacted by the existence of other animals – animals' agency acknowledged – and those other animals suffering from the negative impacts resulting from the action of human predatory practices. We can argue about early establishments, developments, movements, and decay of societies or groups of peoples. Plus, encounters and confrontations – true clashes of cultures and worldviews. And not the least, the inexistence of a human exceptionalism.

For instance, for the peoples of the Amazon there is no such relationship between nature and culture, simply because there is no nature separate from humans, rather only culture. All living forms – humans and nonhumans – are part of the same cultural environment. Any natural element is part of the family constitution of the group, any given animal has a cultural entity, a meaning, any individual is part of the cultural reality in which it

164 Mann (2011), *1491*.

165 Hartt (1885), *Contribuições para a Ethnologia do Valle do Amazonas*.

166 Sea horses have been mentioned by many authors and in different types of sources for general histories of Africa from the 15th up to the 18th century (e.g., Cadornega (1681) [1942], *História Geral das Guerras Angolanas* and Cavazzi (1965) [1687], *Descrição Histórica dos Três Reinos do Congo, Matamba e Angola*) as well as in many other descriptions of the Kingdom of Kongo, such as in Brásio (1969) and Pigafetta (1989).

167 Vieira & Brito (2017), *Brazilian Manatees (Re)Discovered*.

is inserted, with which it relates, and on which it depends. This was itself a "natureculture" system.

Still, the changes and impacts that would arise from sequential European arrivals to the Americas from 1492 onwards,[168] were far from being grasped during the 16th century. The raw material of this animal – meat, skin, bones, fat, oil – were to be exploited, transformed, used locally, and traded regularly and in large quantities for the centuries to come.[169] Moreover, European people completely changed local economies and ecologies.

We can also try to say something about the history of these animals' populations. This is particularly difficult as we move back from contemporary and modern times into the swampy waters of the documentary evidence of 16th- and 17th-century colonial empires in the Americas. In most cases, we cannot account for the number of manatees captured, but some conclusions can nevertheless be inferred from such variables as the number of vessels loaded, barrels filled, or people fed; or even they ways people used them as food items or for other purposes. And we have tried this before[170] and I am sure we will keep on trying. Knowing the past of these aquatic bodies and their populations is as relevant as understating the history of human existence.

The description of "A very different thing is the Manatee, that we call ox-fish; we saw in the City of Santo Domingo a mother and a calf alive; the calf could on its own feed a couple of hundred men and there would still be enough to invite a few others" is found in an account of the voyage of the ship *S. Francisco* in 1596. Here, we also find a reference for the "stew this ox-fish with everything that we throw in a cow pot: and its meat is so similar, that we brought to our victualling some barrels of it salted, from Brazil, and we often ate it all the way to Puerto Rico."[171] This gives us no more than a general perspective of the animal's use and where it was obtained. However, in at least one account from 1614 the number of captured manatees is given, which reflects the abundance of the animal in the early 17th century, as stated in the *Jornada do Maranhão*:

> …and in the sea and rivers there are infinite sorts and quantities of fishes, which are often taken by hand and strokes, and of ox-fishes, which meat is like the cow's, with the same colour, taste and smell, and they are so

168 Mann (2011).
169 Junior (1861), *Relatorio C*, p. 191; Mann (2011).
170 Vieira & Brito (2017).
171 Brito (1736), *Historia Tragico-Maritima*, pp. 386–387.

> abundant in this place that, just from one river, the French took two hundred and fifty.[172]

In 1659, Father António Vieira wrote a letter to the Portuguese King Afonso VI stating that more than twenty Dutch ships a year sailed from Brazil loaded with unspecified manatee products.[173] The abundant fat of the animal, which could reach 100 kg for a large specimen, was initially melted to produce lighting oil, and later, in the 18th century, it was turned into butter.[174] In the 18th century, probably due to the high profits of this activity and the trade in different local animals, a Portuguese Royal Fishery was established in the Amazon Basin to process turtle eggs, fish, and manatees. Between 1776 and 1778, about 1500 manatees were killed, resulting in 3873 *arrobas* (58,095 kilos) of meat and 1613 pots of butter.[175] The unregulated capture of a high number of animals led to concerns about the management of such a valuable resource that, by the late 18th century, was already known to be finite. I will discuss this in the following chapter as I offer a view from the standpoint of environmental history through to current and future sustainability.

Despite these concerns, the hunting and use of manatees and its related products continued to be an important economic activity throughout the centuries and beyond the independence of Brazil, well into the 19th century, not to say almost to today.[176] A 19th-century statistical report on the industry and commerce of the Province of Amazonas shows the export of 224 *arrobas* (3360 kilos) of manatee meat, 4702 pots of manatee butter, and 546 pots of manatee *mixira* – a preserved mixture made from the animal meat cooked in its own oil – from Rio Negro to Pará, apparently a smaller amount than in the previous century.[177] Captures kept occurring over time, reaching a peak in the mid-20th century. As with other overexploited aquatic populations, manatees decreased significantly in modern times, both at population and species level.[178] They were also

172 Anonymous (1812), *Collecção de Noticias para a Historia e Geografia das Nações Ultramarinas*, p. 117.

173 Anonymous (1735), *Cartas do P. Antonio Vieyra da Companhia de Jesu,* p. 26.

174 Ferreira (1903) [1786], *Memoria Sobre o Peixe Boy*, pp. 169–170; Smith (1980–1981), *Caimans, Capybaras, Otters, Manatees, and Man in Amazonia*, p. 185.

175 Ferreira (1903) [1786], p. 172

176 Vieira & Brito (2017).

177 Pena (1854), *Falla Dirigida á Assembléa Legislativa Provincial do Amazonas,* p. 52.

178 Domning (1982), *Commercial Exploitation of Manatees Trichechus in Brazil c. 1785–1973*, pp. 101–112.

hunted by Indigenous people and European settlers and killed for their meat, oil, and hide in Venezuela.[179]

They are still killed and used to this day.

And we can easily account for the levels of commercial exploitation of manatees from the 1850s onwards, but it is hard to get precise information prior to that, for the early colonial period.[180] We know only that exploitation did take place, but we cannot rely on numbers and quantification as much as we can on descriptions, interpretations, hearsay, and repetitions from one author to another across the 16th, 17th, and 18th centuries.

Apart from traditional hunting by Indigenous peoples for their own use, quantities of manatee meat were traded to the French, English, and Dutch for export to the West Indies, particularly St Christopher. Much of this trade originated from places other than Amazonia, such as the Guianas and possibly Guadeloupe. Exports from the Amazon itself, however, are also well attested, the principal port of embarkation in the 1660s being Gurupfi.[181] Barbot (1746) reveals that "the Manati's flesh used at Cayenne is brought ready salted from the river of the Amazons," where it was obtained from the Indians, and sold at Cayenne, "commonly at three pence a pound."

Undoubtedly, the manatee was a resource of great importance and a food item of great excellence – "A fish called pig, almost the size of a very fat ox, has bacon like pork, his meat is very tasty."[182] Moreover, different parts of the animal were utilised by natives: the meat for consumption; the two-centimetre-thick hides were doused with hot ashes to make stiff shields that could resist arrows and shots; and the shoulder blade was used as a cooking spatula.[183]

In addition, manatees had symbolic and magic-ritual values as well as medicinal properties. They have always been surrounded by local myths and legends and are part of Amazonian and Brazilian folklore – from the history of the two lovers who were transformed into manatees when bathing in the Amazon, to the name of a manatee-shaped dark patch near Orion constellation 33, and other present-day superstitions.[184] In the pre-colonial Americas, manatees were also represented in zoolites.

179 Romero et al. (2014), *Environmental History of Marine Mammal Exploitation in Trinidad and Tobago*.

180 Domning (1982).

181 Domning (1982), pp. 102–104; Vieira & Brito (2017).

182 Dias (1934), *As Relações de Angola*, p. 161.

183 Smith (1980–1981).

184 Franzini et al. (2013), *What do Local People Know About Amazonian Manatees?*

Zoolites are stone sculptures found by the hundreds, from the south of current-day São Paulo (Iguape) in Brazil to the north of Uruguay, and only in the biggest *sambaquis* of each bay. They represent various types of animals (fish, aquatic mammals, including the manatee, now extinct on the coast, as well as some birds and land animals), and have a cavity open in the ventral or lateral part of the representation. They are objects linked to rituals that could be used to present or prepare valued food items.[185] Prehistoric and classical Maya societies were also deeply connected to manatees and other large fauna, both aquatic and terrestrial. Numerous manatee bone carvings and figurines were found in Belize and their abundance may reflect the value and importance of this animal as a food resource, i.e., the dietary importance of manatee meat is reflected in the quantity and variety of the carvings from manatee rib bones. So, the known dietary and artefactual use of manatee and manatee's bones, respectively, suggests that this marine mammal may have also figured in prehistoric rituals, myths, and artistic depictions.[186] Manatees represented a large portion of the remains found in the mounds for prehistoric Mayans. This ancient knowledge and practices were transferred and accounted for the expertise of circum-Caribbean societies – such as the Miskito and Rama peoples – described by early modern Europeans.[187]

Besides zoolites and bone sculptures, representations of aquatic animals in small ceramic objects are also found in other parts of the pre-colonial Americas. Symbolising manatees and other fauna, some of them maybe idols, others have specific functions, such as producing whistling or music.[188] These symbols, idols, or objects were common across the Americas. They are found in field research as well as in museum collections. At the National Museum of the American Indian, in New York, I found an object made of manatee bone with mother pearl that was labelled as a *Taino* vomiting spatula. Even if we cannot be sure of the real purpose of such cultural elements, they may have been part of daily routines of theses societies. For instance, in the Caribbean Sea, far from being isolated on different islands, native communities were linked through sea routes that allowed for the constant exchange of goods and ideas. Local societies, ranging from early

185 Prous (2006), *O Brasil Antes dos Brasileiros. A Pré-História de Nosso País*.

186 McKillop (1985), *Prehistoric Exploitation of the Manatee in the Mayan and Circum-Caribbean Areas*.

187 McKillop (1984), *Prehistoric Maya Reliance on Marine Resources*.

188 Artefacts found in a visit to the Museo Arqueológico de Pueblos Karib – Universidad del Norte, Barranquilla, Colombia, by team members of the European project CONCHA (see acknowledgements).

modern back to prehistoric groups, would produce and use objects made of stone, bones, or ceramics in the form of or to symbolise turtles, fish, crocodiles, serpents, sea cows, and cetaceans, which may be indicative of the value – utilitarian and symbolic – these fauna had to them.

Like many other local products derived from plants and animals, they were a component in traditional medicine. The settlers appreciated and used the bones of the manatees' ribs and ears for their medicinal properties. In some cases, they were ground into a powder and in others cut into the form of shells to prevent or stop bleeding, stop a fever, and for diseases such as gout.[189] Eating male manatee genitalia apparently cured impotence. Burnt manatee bone ashes were applied to insect bites, lung ailments, ulcers, and relief for women during menstruation.[190]

There are many virtues attributed to several parts of the body of a manatee and they are commonly highlighted in the descriptions about the animal.

> The Ear of the Ox Fish has great virtues; the ones that we know and have experienced to this day are: it is very good to cure the Gallic colds; it heals all sorts of aches, especially those of the blood; it reliefs greatly the pains of the stone and the bladder; it takes away the sand of the kidneys…Tooth of the virgin woman fish, and its virtues; it serves to staunch the blood flows from the mouth, placed on the chest, and to stem the lower flows, placed on the lower parts; it is useful if tied on the left arm, close to the flesh, in air, for accidents. Rib of the virgin woman fish, and its virtues; [if] prepared in water, and drunk, it cures fevers, and pleurisies pain, twinges and spasms, & Spores; we warn that, if she is not a virgin, it is useless.[191]

Recipes for the medicinal uses of manatees are as common and detailed as those for cooking them.[192] They detail other ingredients to be added, time of cooking, how and when to apply it, and so on. And these recipes, and methods for using parts of manatees as remedies and to cure maladies, come from across all the regions where the species was found and, consequently, where humans encounter them. These details are a result of the syncretism between African slaves and local Amerindians resulting in a

189 Fiori & Dos Santos (2015), *A Carne, a Gordura e os Ovos*, pp. 86–87.
190 Harris (2020), p. 803.
191 Semedo (1727), *Memorial de Varios Simplices que da India Oriental, da America & de Outras Partes do Mundo*, pp. 6, 10.
192 Vieira & Brito (2017).

Creole tradition; the values and multiple virtues of the bones of the ox-fish (our manatees) are frequently compared to those of the sea horse (a.k.a. an African hippo). Many Jesuits, and other missionaries, who spent long periods living in Portuguese settlements in Africa and/or the Americas have left us their descriptions full of details on how to use the products of such animals.

Moreover, these products – and animal parts – became part of pharmacies, and *boticas* across the Iberian transoceanic empires, as well as in Iberia itself; and their positive effects were proven not just in the faraway lands but also in the kingdoms.[193] For this reason, they were very sought after, and pieces of the animals, such as the skull, teeth, and bones – all hard parts were considered medicinal – would be sent to Europe from their place of origin in Africa[194] and elsewhere. Although several scholars are sceptical about their effectiveness, between 1600 and 1800 the use of bones, substances, teeth, organs, horns, and bezoars of animals, to which medicinal or prodigious properties were attributed was widespread, appearing with some regularity in European medical textbooks.[195]

> These fish are killed with very large harpoons strongly tied and in the handle they tie a barrel or another float, because they throw the harpoon and the harpooner goes on a raft following the track of the barrel or float that the fish leaves behind with much fury, until the fish loses all its blood and comes dead to the surface; it is then led to the land or the boat where they skin it as if it were a bullock; its meat is very fat and tasty and the tail is like bacon without having any lean meat in it, which they melt like pork lard and it turns into butter and is like pork and has a much better flavour; the meat of this fish boiled with cabbage tastes like beef and slightly salted even better and seasoned it looks and has the taste of pork and cut in chunks and smoked becomes very red and boiled it tastes like very good pork and cut into steaks mixed with its fat and fresh and slightly salted, baked with garlic and wine seems like pork loin and with a better flavour; the hands of this fish boiled are like those of a pig, but they have more to eat; it has teeth like an ox, and in the head between the brains there is a stone as large as a duck-egg made in three pieces, which is very light and hard as ivory, and has great virtue against the pain of the stone; the females have only one child and their sex is like another

193 Semedo (1727), p. 2.
194 *Carta do Padre Mateus Cardoso* (1955) [1621], p. 569.
195 Fiori & Dos Santos (2015).

> animal's and the males have testicles and a cock as an ox; they have no hair or scales on their skin.[196]

> These manatees have a certain stone or bone in the head, between the brains or kernels, which is very useful for the flank pain, after having burned it very well, and that ground powder should be taken when one feels the pain, in the morning, before eating…in a sip of a very good white wine; and drinking it in this way three or four mornings in a row, the pain is gone, according to some who have tried it and told me; and as a witness, I say that I have seen people searching for this stone with great diligence to this effect.[197]

> …the stone is good for haemorrhoids, fevers, very finely ground and taken with water or wine, a quantity that fits in a coin of two dimes, is good for the air, and for liver disease, so that all bones of this fish are medicinal; the stone is created on the head, like that of the seahorse.[198]

The so-called stones in the head of manatees, which were actually ear bones, had multiple applications. Frequently used as lucky charms, in a bracelet, or other adornments – by locals and foreigners – they worked against many possible diseases and body ailments.[199] They were precious – even if their virtues were solely imaginary. But they were also used to cure or minimise the symptoms of certain diseases and illnesses, such as kidney stones, haemorrhaging, fevers, and different types of aches and discomforts. The so-called stones from the head could be smashed into a powder or polished into small pieces; the first to be mixed in food or drink, the second to be held near the body. Many local people, including the Miskito people from the Caribbean, used them as amulets and magical charms, in necklaces (Figure 27), or as musical instruments, together with other elements of the aquatic environment, such as pieces of coral.[200]

So many products from a single animal.

So many individuals to exploit, consume, and trade, locally in the Americas through their range, and globally – or at least across the Atlantic – through the imperial routes of transoceanic voyages. So many encounters

196 Sousa (1989) [1587], *Noticia do Brasil*, pp. 198–199.
197 Oviedo (1995).
198 *Carta do Padre Mateus Cardoso* (1955) [1621], p. 569.
199 Fiori & Dos Santos (2015).
200 For a review, see Fiori & Dos Santos (2015); see also Harris (2020), p. 793.

and confrontations that resulted in a common way of exploring and exploiting the tropical aquatic resources whose demand came from far across the ocean. And, of course, these practices resulted from appropriation (Figure 28). All this happening, developing, exploding from the contacts and exchanges between such distinctly different societies.

At the same time, these encounters allowed for those people to observe one another – the ways of speaking, dressing, moving, living in a community, responding with force or friendship, of alliance and of war. And if the manatee was already on the list of high-quality food, whose products were used for various purposes, including medicinal properties, it was also used for other purposes. In one of the records from continental North America it is said that a place called Manatee Springs, in late-18th-century Florida, was frequented by the beasts in the winter season, and that the Seminole people killed them for food, calling them by a name meaning big beaver, and prizing their bones as a good grade of ivory.[201]

The manatee skin was hard and of good quality and, as mentioned above, used to produce ropes and to make shields that served the Indigenous populations well in times of war. Europeans quickly incorporated them as a common object and used them in the confrontations and struggles with local people or against other outsiders.[202]

> The skin of it is very thick, and when dressed into leather, serves to make targets, which are proof against a musketbullet.[203]

Manatee products were more utilitarian than luxury consumer goods – oil for lanterns, pitch for caulk boats, wrappings, mats, and shields. It is thought that hide was widely used by Europeans in the Americas to make horsewhips, straps for fastening oars to boats, walking sticks, or even boot soles.[204] The use of the so-called manatee strap or whip, made of the hide of the sea cows, was considered extremely brutal and cruel, and it was forbidden from use in Jamaica due to the inhumanity of inflicting it on servants.[205] In Thomas's description of the state of Carolina (during 1680–1682), we find a single

201 Baughman (1946), p. 236.

202 Heaton (Ed.) (1934), pp. 190, 319; Veríssimo (1970), p. 131.

203 "*F. Christopher de Acunna, in the relation of his voyage on the river of the Amazons, chap. 25. describes this fish*", Heaton (Ed.) (1934).

204 Buisseret (2010), *Jamaica in 1687*, p. 290; Harris (2020), p. 805.

205 "If a master would proceed in doing so, by the second strike of this whip the Christian servant would obtain his freedom." Buisseret (2010), p. 290.

reference to whipping in Jamaica, as below, with a particular passage about the use of manatee skin to produce whips.

> There is farther to the Southwards of Carolina, especially about the Shoars and Rivers of Hispaniola and Cuba a Fish…call'd the Manacy or Sea-Cow, of an extraordinary Bigness, sometimes of 1000 pound weight…Its Skin makes excellent Whips for Horses, if prudently us'd, which are very serviceable and lasting; with one of these Manaty Strapps, I have seen a Bar of Iron cut and dented: It cuts so severe and deep, that by the Publick Authority at Jamaica, Masters are forbidden and prohibited with it to strike their White Servants.[206]

I have not found such whips in my own search for such objects in many museums in Europe and North and South America. I always try to look beyond the documental evidence, trying to find the surviving materiality of the past use of "aquatic" products, that is, objects made from parts of aquatic animals in different moments of time. This makes tangible the story that (environmental) history tells us. So, I am always on the lookout for whale bones and baleen, for manatee remains, for sea turtle shells, for large fish teeth. I search in natural history and maritime museums, in public and private collections, in the assets on show in exhibitions and kept in warehouses. My searches have yielded many interesting or strange objects, one of them the so-called Portuguese whip made of hippopotamus skin and used on enslaved Africans in the permanent exhibition of the Greenwich National Maritime Museum in London. Very hard but malleable enough, it seems to me the closest to a manatee whip or strap. Similarly, I have never found a shield made from manatee skin, like the ones that Amazonian tribes were said to use in combat, but I did find African shields made from other mammals' skins at an exhibition in the old castle of Vila Viçosa, Portugal.

I will keep searching, but many such objects were consumed and have disappeared, leaving no traces in the archaeological records. Thus, I can summarise what I know so far as the following: the *Manati*, or *pesce-buey*, has an incredibly good skin, as many have stated and written widely about, but there is no remaining tangible evidence of it.

It has a dark and very hard skin, "with some thin hairs, rough and hard, and so very thick, that the Indians cut it into narrow long flips, which they [native people] dry, and become as stiff as a cane; wherewith the European chastise their slaves. Others make of the skin a sort of bucklers,

206 Thomas (1682), *Carolina; or A Description of the Present State of That Country*, p. 32.

musket-proof."[207] It was a resource commonly known and used by Amerindians in different parts – as food, surely, but also as raw material to make objects, such as strips and shields. In the description given by Cooke about the "first Discovery of the mighty River of the Amazons, from Peru, down to its Mouth, by Capt. Francis de Orellana," we find references to these kinds of encounters and to the exchanges and offers between Europeans and Amerindians.

> The Indians were pleas'd to see the Spaniards, and gave them Plenty of Tortoises and Parrots, and the same Reception they had on the other Side of the River. As they ran down the next Day, four Canoes came up to the Brigantine, offering Tortoises, Partridges, and Fish, for which the Commander gave them such Things as he had…[208]

> In the Morning they discover'd many Canoes full of arm'd Indians, with long Shields made of Tortoise-Shells, and the Skins of Manaties and Dantas, beating Drums, and threating to devour the Spaniards…[209]

As the author continues to describe Orellana's journey through the great river, he calls attention to other greatness, such as the abundance of all kinds of fish, manatees, and turtles,[210] exalting that, from "among the innumerable Varity of Fish it produces, the most singular is the Manati, or Sea-Cow, so call'd from its Resemblance."[211] Francisco de Orellana was the first explorer of the Amazon River and surrounds; the description of his journey offers the first insights that Europeans had of the peoples living there and, of course, how they related to and depended on the environment. One can also rely on the so-called Carvajal's account about the discovery of the Amazon. He records encounters with local tribes as intimidating for the newly arrived Spaniards, and how the use of shields made of animal hides make them look tall and in control of their space and environment.

> Before we had come within two leagues of this village, we saw the villages glimmering white, and we had not proceeded far when we saw coming up the river a great many canoes, all equipped for fighting, gaily colored,

207 Thomas (1682), p. 32.
208 Cooke (1712), *A Voyage to the South Sea*, p. 235.
209 Cooke (1721), p. 236.
210 Cooke (1712), p. 255.
211 Cooke (1712), p. 261.

> and [the men] with their shield on, which are made out of the shell like skins of lizards and the hide of manatees and of tapirs, as tall as a man, because they cover them entirely.[212]

Again, from another description from the same account – *Expedition down the Marañon River and all that happened during it, together with other remarkable things deserving to be known which have come to pass in the Western Indies of Peru* [by Toribio de Ortiguera, probably 1518] – we get the sense that this encounter left the Spaniards in no doubt about the empowerment that using these objects of war gave the natives.

> These people [from Machisaro=Machiparo] are naked, both men and women; their war implements are 'macanas', arrows and lances, and shields made out of the skin of large crocodiles and of certain kind of fishes called manatees, which are as large as calves and so tough that a dart shot from a crossbow can not pierce them; and they [these shields] were of great utility to the Spaniards, both for use against the inhabitants of this country and against those whom they came upon farther on.[213]

Pressure from settlers, pirates, and missionaries, and from early Spanish and Portuguese traders, led to massive exploitation of turtle eggs for oil to be sold on local and international markets and of meat for sale as a delicacy much prized by Europeans. The manatee was intensely hunted both for local consumption and to supply both oil and meat for ships involved in the West Indies sugar trade and in the Atlantic Triangular Trade.[214] There were important local urban centres for the capturing manatees and for the processing of manatee lard;[215] and the rapid reduction in numbers of these two aquatic animals directly deprived the indigenous populations of important sources of oil and meat. Consumption patterns led to a variety of encounters between Amerindians, Europeans, Africans, and Creoles. The growth in the hunting and trade of these aquatic resources created an enormous consumer demand for food, medicine, fashion, and art.[216] The demand for "fruits of the sea" was European (both regional and

212 Heaton (Ed.) (1934), p. 190.
213 Heaton (Ed) (1934), p. 319.
214 Bunker (1984), *Modes of Extraction, Unequal Exchange, and the Progressive Underdevelopment of an Extreme Periphery*, pp. 1027–1028.
215 Wheat (2016), *Atlantic Africa and the Spanish Caribbean*, p. 201.
216 Harris (2020), pp. 789–790.

external) but the local expertise and labour was Indigenous or enslaved, both in the Caribbean and South America. This put these animals at the centre of an early modern ecological globalisation and an active part of a network of ecological teleconnections. The term ecological teleconnection was recently used by John McNeil and "refers to linkages that involve places far apart that carry significant environmental consequences."[217] Here, I am showing how these aquatic animals have been systematically exploited, transformed, and commodified since the early modern period and throughout the colonial and imperial history of the South Atlantic. These extractions had many consequences, socially, politically, economically, and ecologically, which were felt in local, regional, and global perspectives. For me, the early modern linkage between extractions and environmental transformations in colonial Americas and imperial Europe is an ecological teleconnection – an oceanic teleconnection.

The continued hunt lessened all these region's carrying capacity indirectly as well by seriously disrupting critical links in the riverine ecosystem and thus reducing the other riverine resources on which these human populations depended. Turtles form part of the food chain maintaining the larger fish, and the manatee's water-surface grazing is crucial to keeping the lakes and channels adjacent to the main river sufficiently free of vegetation to allow the passage of canoes and to permit the entry of light required for the storage of energy in the form of complex organic molecules. As the richest fishing occurs in the quieter waters, which are removed from the rivers' main flow, the dwindling of the manatee and turtle populations greatly diminished the protein resources available to local riverine societies.[218]

Europeans appreciated the qualities of the subproducts of the coastal or the Amazonia manatees in colonial Brazil. The exploitation, process, numbers extracted, and their trade is documented from the late 18th century onwards, and they slaughtered the Amazonian manatee for its fat, which was also used in food preparation, mixed with pitch for caulking vessels, and as fuel for public and residential lighting. In addition to fat, the meat of this mammal was an extremely important protein source for the colonisers. It was salty, used in the preparation of sausages, and a huge number of pots

217 The author uses the term to refer to the history of energy and consequences of environmental exploitation for the industrial revolution and the time period following it. McNeil (2019), *Cheap Energy and Ecological Teleconnections*, pp. 493–494.
218 Bunker (1984).

of *mixira*, this Amazonian delicacy made from manatee meat cut into small pieces, fried and preserved in the animal's own lard.[219] Even though there is evidence of local production of salt by some Amerindians societies and the existence of salted fish[220] – storable commodities for marketplace trade and storing for later consumption – salting manatee meat did not prove to be a straightforward preserving method. Its was difficult to maintain its as well as its quality and integrity – salt was not abundant enough and the meat was far too fatty to be salted.

The exploitation and use of manatee products demonstrate the important historical value of the animal, crossing cultures and evidencing a plethora of perceived benefits. A multitude of views, including diet, health, fashion, art, medicine, religion, handicrafts, knowledge, and science can be addressed and contribute to a global understanding in the context of the Atlantic world.[221] It did not take long for foreigners seeking to explore and control the new territories and their productions to understand the value of such diverse and useful products coming from one animal – and one so easily captured. This is an appropriation that was leveraged on traditional knowledge constructed locally by the inhabitants of the regions that these aquatic animals also occupied. The use of conchs typically used in the local harpoons to hunt the manatees was replaced by metal, making the catch more lethal and much more efficient. The already tame ox-fish of the Americas was definitively domesticated and embarked on its extirpation path. The five species of Sirenia existing in the Atlantic by 1760,[222] were reduced to three. And from a huge area of distribution of the genus from polar of the North Atlantic to the rivers and tropical shores of Africa and the Americas, their remaining habitats were dramatically reduced.

Current distribution ranges of the extant species are severely constricted and the negative impacts of long-term exploitation, as well as of current-day activities, are strongly felt in the remaining populations. We can try to produce a hindcast of past abundance and distribution. These endangered aquatic mammals are still being hunted and used. We can try to understand past dynamics, patterns, and narratives of depletion to address historical and cultural drivers of consumption. We may be able to add new information

219 Fiori & Dos Santos (2013), *Colonizadores Portugueses, Tartarugas e Peixes-Boi: uma História da Busca por Carne, Gordura e Combustível na Amazônia do Século XVIII.*

220 McKillop & Aoyama (2018).

221 Harris (2020), *Op. Cit.*, p. 805.

222 I am also including here the Steller Sea-cow, which became known by Europeans and, equally, was made extinct by them in just thirty years in late 18th century. See Fiori & Dos Santos (2015), p. 75.

to the understanding of the history of interactions between humans and the nonhuman parts of the aquatic world in pre-modern times as this comprehension is ever more relevant to present-day actions and to future practices.[223] Here sits one of the many the values of the humanities for the oceans.

We can see these and other animals as actors in the construction of human cultures and as victims of human predatory actions; they have controlled, commodified, and shaped human civilisations – for purposes of food, labour, clothing, entertainment, or materials. They have been, to say the least, transformative agents throughout the entire breadth of the history of human interactions with them. We can see this, and have addressed it, through environmental history, cultural history, the history of science and knowledge, commodities history, among other fields of inquiry.[224]

Humans can have intimate relationships with other creatures – some violent, some friendly – an intimacy that defines much of global human history. Animals permeate our history and we theirs.[225] This not a statement but rather a fact – animals are a part of history.

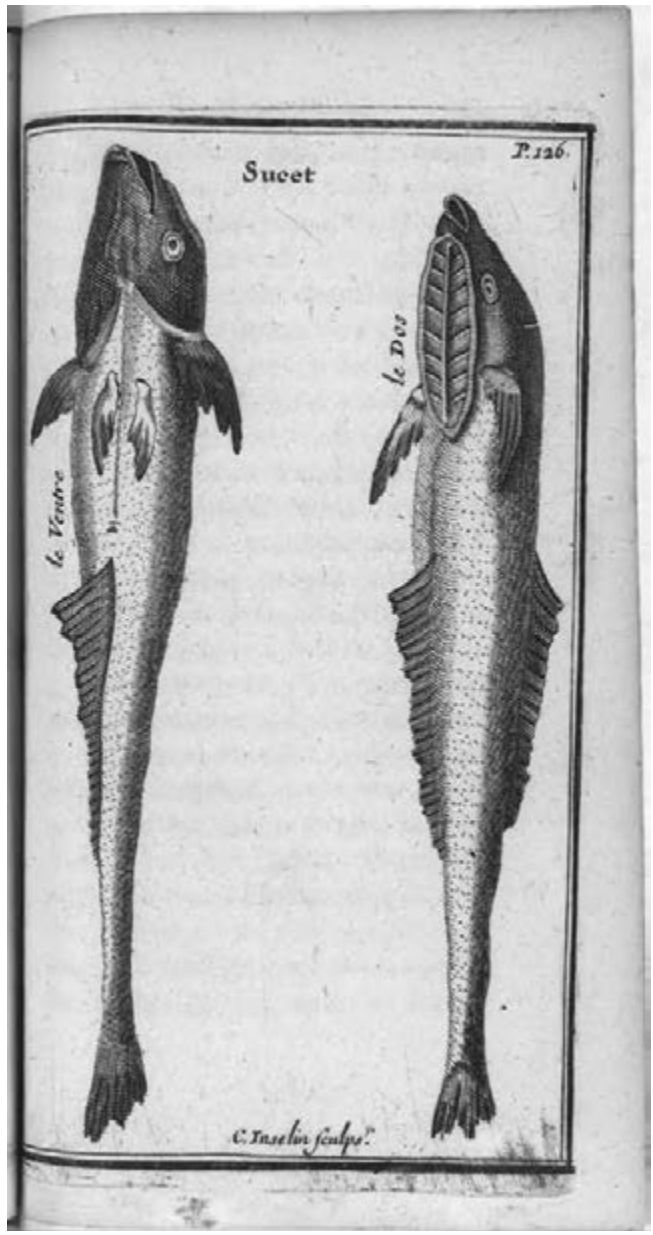
This story shows past narratives of extraneous impositions and control of nature, besides the control of peoples, expertise, and local and enslaved labour, and of imperial processes and interest overcoming local and regional structures – simultaneously ecological and cultural. It highlights a not so pristine environment and the dependence and manipulation of natural resources – including aquatic ones – by local societies. It reveals the hybridity, or the plurality, in the essence of and in the practices related to both the manatee-resource and the manatee-prodigy. And it highlights similitudes as well as oppositions in the human relationships with the rest of the natural world – fluidity is part of it, not least because we are talking about aquatic environments and animals.

The blue world of the living waters and animals of the Atlantic is an actor in this history.

223 Brito & Vieira (2016).

224 See this blog entry by Dan Vandersommers (2016) as an example of academic efforts in the "animal turn" in history: https://www.historians.org/publications-and-directories/perspectives-on-history/november-2016/the-animal-turn-in-history

225 Walker (2013), *Animals and the Intimacy of History*.



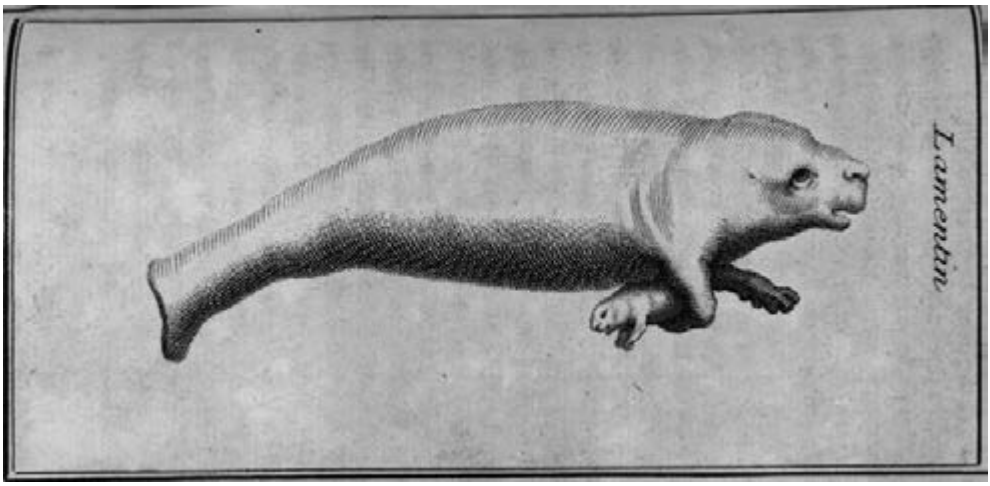
▲ Figure 17 – A remora or sucking fish in a dorsal and ventral view in the book by Froger (1676) *Relation d'un voyage fait en 1695. 1696. & 1697.* © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/hg3i1z).


278 Guatimala.

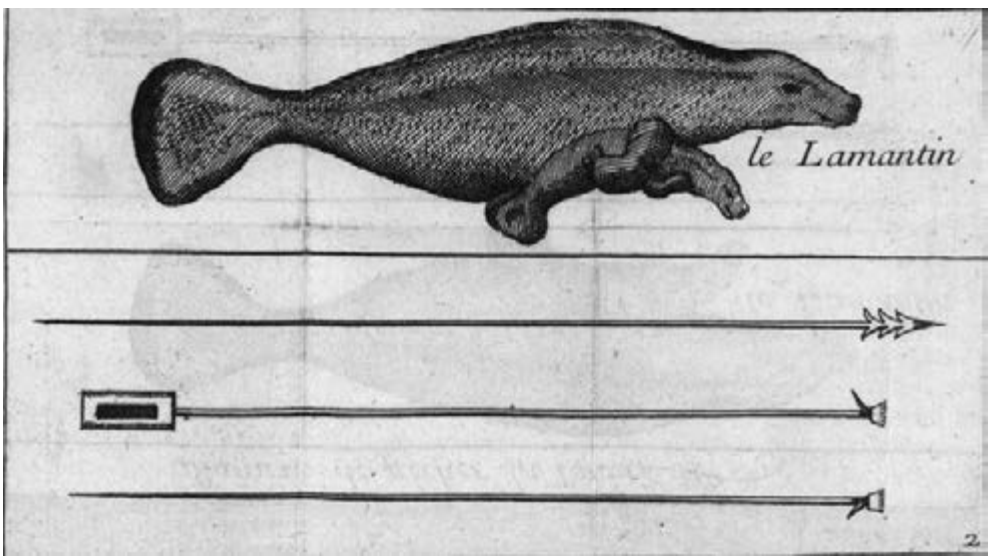
Het seste Capittel.

Voorder beschrijvinghe van de Provincie van VERAPAZ, ende GOLFO DOLCE.

▲ Figure 18 – The manatee by Joannes de Laet (1630), director and historian of the Dutch West India Company (WIC) in the work *Nieuwe wereldt ofte beschrijvinghe van West-Indien*. This woodcut was also used to illustrate Juan Eusebio Nieremberg, … Historia naturae, Antwerp, 1735, and the entry for the manatee in Aldrovandi's Fish Book. © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/93lp13).

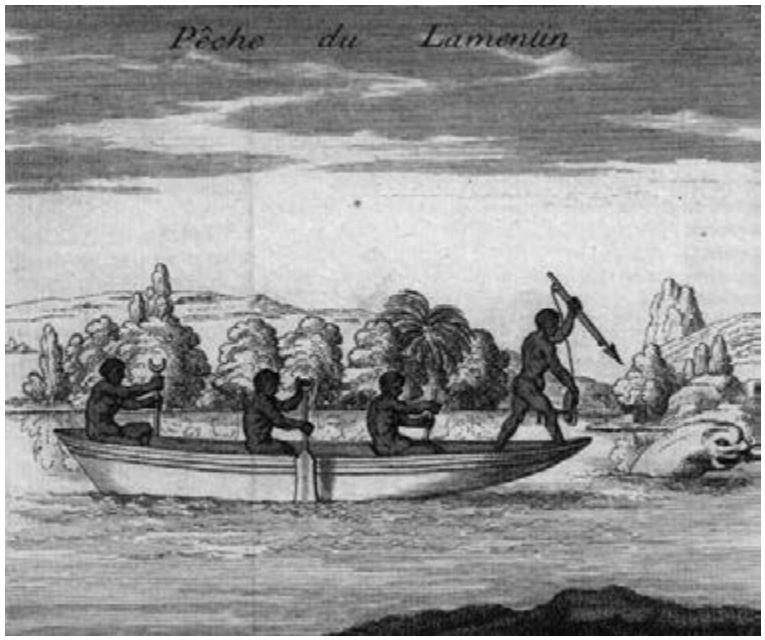


▲ Figure 19 – Jean Baptiste Labat's *Lamentin* (1722) in his *Nouveau voyage aux isles de Amerique* representing a female manatee with her calf. Labat (who was a Dominican missionary and supposedly illustrated his book himself) notes that the manatee had become rare as the coasts had become populated and also compared the meat of the young manatee to veal. © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/q1phy4).

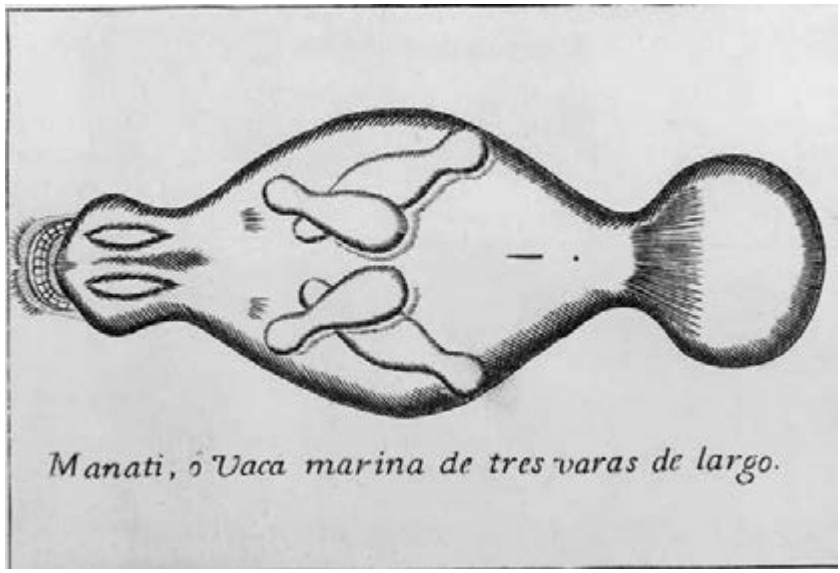


▲ Figure 20 – *Le Lamatin* (bottom) and the way of fishing turtles (top) in the work *Histoire des avanturiers flibustiers* by Alexandre Olivier Exquemelin (1744). The representation of several types of harpoons suggests that this is a typical and common way of hunting large aquatic animals in the Americas. © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/b5o57l).

▲ Figure 21 – The butchering of *el Manati* in an agriculture setting where we can see a European man talking to Amerindians working on a fire. In the background a paddling boat and an aquatic animal, possibly an alligator. Filipo Salvatore Gilii's *Saggio di storia americana o Sia storia naturale, civile, e sacra de regni* (1780). © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/4io7aw).



▲ Figure 22 – Fishing manatees in French Guiana (18th century), illustrated in the work of Pierre Barrère (1743) *Nouvelle relation de la France Equinoxiale*. This illustration shows a hunting technique of manatees using a hand harpoon from a canoe, which was used by native hunters from different regions of the Americas. © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/56s52i).



▲ Figure 23 – The manatee, or sea cow, in a ventral view (top) in the Joseph Gumilla's *El Orinoco Ilustrado* (1791). © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/6djvnj).

◀ Figure 24 – The woman-fish, or mermaid or yet "*pesce muger*" *sive piscis [andropomorphus]* (on the right side) on the African shores, in the work by Francesco Redi (1675) *Experimenta circa res diversas naturales, speciatim illas*. Medicinal uses were historically found for both real and imaginary animals and Redi advocated that the bones from a mermaid's tail (as found in Africa and Brazil) could be used to promote chastity. © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/6w36ph).

▲ Figure 25 – "*No less wonderful is the Fish Manate, whole shape hath been describ'd elsewere*…" in the words of Arnoldus Montanus in his 1671 'America: Being The Latest, And Most accurate Description Of The New World'. This engraving shows a couple of manatees (possibly representing a male and a female) and two calves suckling; they are represented on land as seals resting. In the foreground a fish, at the back a boat possibly showing fishers holding sticks or harpoons. © David Rumsey Historical Map Collection (permalink: https://www.davidrumsey.com/luna/servlet/s/0626uh).

▲ Figure 26 – Fishing techniques of coastal Indigenous societies (possibly *Tupinambá*, *Tupi* or *Tuppin Imba*) in the 16th century. In this, Hans Staden's 1558 representation we see the use of nets, bows, and arrows, as well as fishing conducted from the shore, standing in the water, and in a canoe. © JCB Archive of Early American Images (permalink: https://jcb.lunaimaging.com/luna/servlet/s/q2e95y).

◀ Figure 27 – A necklace made of manatee bone, used by Indigenous societies in the South Americas. From the Anthropology Collection of the Science Museum of the University of Coimbra (Reference number: MCUC.ANT.Br.78), possibly collected in the 18th century. © Museu da Ciência da Universidade de Coimbra, Carlos Barata.

◀ Figure 28 – Fishing hook made from manatee bone, used by South American Indigenous societies. From the Anthropology Collection of the Science Museum of the University of Coimbra (Reference number: MCUC.ANT.Br.313_6), possibly collected in the 18th century. © Museu da Ciência da Universidade de Coimbra, Carlos Barata.

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— Water Wor(l)ds —

They call you
Matto Mavali Matum Manacy Lamatin

Wor(l)ds voiced in different sounds,
salty like the many sea currents,
The waters are brownish like the rivers
Mami Wata Ngulu-a-Maza Goarágoa Pesce-Buce Peixe-Mulher

They draw you
surface circles of the underwater waves
of slow and shallow movements
Magnificent Strange Noble Mighty Tasty Large Abundant

You are simply self
Yet above, beyond yourself
Marvel Monsters Mundane Magic a Wonder
A mighty old Manatee

5. (Early) modern 'naturecultures': A co-constructed narrative of the world

Abstract: Humans and aquatic other animals live in interrelated, and interdependent systems of "naturecultures." Addressing the history of their entangled ecologies, times, and spaces, and of multi-species assemblages allows us to set aside traditional dichotomies and move beyond current scientific and cultural understandings. I will review early modern tropical knowledge for the construction of a local and European natural history and philosophy. The role of manatees and their interactions with different people, and their own agency, are explored in this chapter in the context of the early modern history of natural history and the co-constructions of existences and worldviews in the past and present. To end the chapter and the book, I will engage in a discussion of a blue early modern Anthropocene.

Keywords: entangled ecologies; knowledge and worldviews; history of natural history; animal-object and animal-resource; Blue Anthropocene.

We come, in last place, to an animal that terminates the boundary between quadrupeds and fishes. Instead of a creature preying among the deeps, and retiring upon land for repose or refreshment, we have here an animal that never leaves the water, and is enabled to live only there. It cannot be called a quadruped, as it has but two legs only; nor can it be called a fish, as it is covered with hair. In short, it forms the link that unites those two great tribes to each other; and may be indiscriminately called the last of the beasts, or the first of fishes.[1]

1 Goldsmith (1822), *An History of the Earth and Animated Nature*, vol. II, p 339.

Brito, C., *Humans and Aquatic Animals in Early Modern America and Africa*. Amsterdam: Amsterdam University Press, 2023
DOI 10.5117/9789463728218_CH05

The choice to treat a creature as a useful natural resource or as a diabolic curse is ultimately a culture assessment; it is not based merely on the attributes of the organism itself.[2]

Danger, like beauty and utility, is in the eye of the beholder.[3]

Studying manatees in the past and trying to put together a historical narrative of the interactions and relationships between these aquatic animals and humans, proved to be complex and long, and revealed the multiple layers of people's connections with nature. All of us – animals – live and have lived in integrated nature-culture systems, in networks of entangled ecologies.

Manatees – like whales, like the ocean itself – are a good case study because they translate the multiplicities of the world, and the paradoxical ways humans address and use aquatic environments. Manatees allow us to set aside traditional dichotomies and move away from current scientific and cultural understandings and productions. Manatees – more than duality – mirror plurality. And they do so in a kaleidoscopic way.

Well, they are hybrid in themselves – the last of the fish, the first of the beasts.[4]

They are aquatic but breathe air, they are "fish" but reproduce as land animals; they are aquatic mammals but live in close dependence of land or shore habitats, they are free ranging animals but can survive in close connection with, or even dependence of humans. They are also hybrid in terms of the way they are understood by people and by societies. They are meat, *mixira*, bones, and stones – resources to be extracted, transformed, and traded. They are medicine and power. And they are symbols and icons and water deities.

They work as elements of linking of distant sides of an ocean and of creation of aquatic, fluid, permeable stories, they allow writing a true Atlantic history as they only span across this oceanic basin, and they accept the possibility of comparisons and integration approaches. They are part of local realities and cultures but, equally, are key elements in the construction of transatlantic networks from early modern times to current days. They helped building the so-called first globalisation.[5] And as this was built on

2 Sauer (1978), *Seeds, Spades, Hearts, and Herds*.
3 Nabhan (2003), *Singing the Turtles to Sea*.
4 Goldsmith (1822).
5 Costa et al. (2014), *História da Expansão e do Império Português*.

top of and in total dependence of climate, of water and land, of forests and animals we should better call it an ecological globalisation,[6] or yet a wet globalisation.[7]

Moreover, manatees were intermediaries in the establishment of relationships between peoples that had never met one another, i.e., in terms of gift exchanges, early trading, and attempts at mutual understanding. Alongside many other key elements of nature and of the waters, they mediated peoples' encounters. Many times, they failed in that purpose, giving room to ecological and cultural disruptions, and they were turned against the ones that introduced them the first time to European; they were usurped not just from their habitats, but also from their cultural settings. As Beattie and Anderson put it, "empire-making and environmental change are interconnected. Empires in world history controlled and exploited animal, human, plant, and mineral resources to expand and consolidate power, often at other polities" expenses.[8] Here, Portuguese and Spaniards, not least other European nations, learned from Indigenous groups and societies, and tamed and controlled regional aquatic resources transforming local practices and uses into staple foods, imperial resources, and global desirable products.

Manatees, sea cows, ox-fish, the *manatus*, the *iguaragua*, are also plural in representations of natural history and philosophy, in the writings and interpretations of scholars and artists, in art and poetry, in scientific production and a variety of religious productions. They come in multiple languages, multiple understandings, multiple colours, and formats. They are more than one. And I do not just mean the objects or interpretations created by European, whether in Europe or elsewhere in their colonial world; I also mean local, traditional, and Indigenous art forms and in the representation of nature and its power. They are seen differently according to the eyes that see them, regardless of the group of people in time and space.

We can try but we still cannot tell a straightforward story about the relationship between humans and aquatic animals. Again, like the fluidity of water, the fluidity of this animal is its main characteristic. Perhaps it is why I like them so much, someone who has never seen one in real life, someone who only knows of manatees from films, pictures, drawings, and the words of others – both from history and from recent days. Perhaps it is simply because I appreciate both the paths created by water in the surrounding

6 Barrett et al. (2020), *Ecological Globalisation, Serial Depletion and the Medieval Trade of Walrus Rostra*.

7 Mentz (2020), *Ocean*.

8 Beattie & Anderson (2021), *Ecology*.

geologies and the paths that studying aquatic animals in documentary and iconographic sources takes me to.

I will attempt to briefly review the importance of empirical knowledge produced and diffused on tropical seas and coasts for the construction of a local and European notion of natural history and philosophy. Here, I am tracing paths of knowledge production and diffusion through the appropriation and transmission of written information, illustrations, animal parts, and manufactured objects. Both the materiality of animals and their products and the intangibility of their existence are key points in this chapter. I also address how different worldviews and cultural practices contribute to the way people and individuals perceived and dealt with marine animals and their ecosystems as well as nature in the early modern Atlantic. I expect to contribute, as many authors are currently doing, to "tracing another kind of sea path," one that includes the historical and cultural long-term "narratives forged by, through and around the sea"[9] and its animals. I want to relate all these topics to various aspects of contemporary life and suggest avenues for future research into early modern marine environmental history. As mentioned by Woodward and McHugh in the introduction of their 2017 book,[10] the ancient ways of life shared between humans and animals are being lost in ever-increasing scales, partly due to the extinction of creatures that once embodied them. While scientists strive to conserve declining populations, writers and artists direct their attention to the other horns of the dilemma – how to preserve the ways of being in a world that humans traditionally shared with other creatures, and which along with them are threatened by the conventions of modern life.

My way of doing this, as mentioned in many parts of this book, is to put the scientific emphasis on Environmental History and the Environmental Humanities, which are an inter- and multidisciplinary approach that uses several methodological approaches to respond to the current ecological crisis from plural perspectives.[11] Aspects of history, archaeology, art, and literature may be used in an integrated way alongside with natural sciences. This allows scholars and scientists to take a new look and potential working method to understand the complexities that intersect local and global cultures, economic, social, and ecological practices and, even, political discourses. Together, they can integrate the analysis of perceptions, values, cultural backgrounds, creative work and emotional responses about the

9 Mathieson (2016), *Introduction: The Literature, History and Culture of the Sea, 1600–Present*.
10 Woodward & McHugh (2017), *Indigenous Creatures, Native Knowledges, and the Arts*.
11 Merchant (2020), *The Anthropocene & the Humanities*.

environment. Related to the ecological and cultural multidiversity, past and present environmental challenges, legal environmental values and issues, and theoretical conceptions of human and nonhuman nature, this disciplinary integration allows us to understand the complexities that cross local and global cultures, economic practices, and social and political speeches.[12] As Noel Castree puts it, while reflecting on the "environmental turn" by humanists, it is possible to "acknowledge the relativity of belief, the intersubjectivity nature of human existence, the situatedness of life, [and] the complex ways people apprehend the world."[13]

This is an emerging and relevant theme in the current scientific landscape, but also in relation to more pressing social issues, such as those of historical understanding or the consequences of the Covid-19 pandemic, presented from the point of view of the humanities disciplines. Building on the cooperation between Humanities and Natural Sciences, it is now widely recognised that human–environment interactions are essential to understand past uses and attitudes towards marine ecosystems and that this information can directly contribute to ocean conservation and management agendas. Thus, the development of common tools and languages for the production and sharing of knowledge and an integrated approach to these issues will us to highlight the uses that different societies and/or groups have made of the sea and the effects of these actions over time, as well as human perceptions and representations of nature over time and up to the present moment.

So, in this chapter, I will go back in time, trying to see nature, environments, and animals through the lens of early modern individuals and peoples, while trying to address the animals' own agencies. Yet, I will continue to jump to the present and into the future. Do the manatee and other large aquatic fauna, living alongside humans, allow us to discuss all these multiple views and interpretations of nature, both past and present?

For early modern European, the monstrous and the odd was filling the blank spaces of the human world.[14] The same way, Indigenous peoples and different-from-European cultural groups were also set in a state of wonder and at a safe distance from everyday life. They were placed in faraway cartographies, especially in those that revolved around the known world whose centre was the Eurasian system. All the new-to-European views resulting from the early modern expansions and colonial empires were

12 Kitch (2017), *How Can Humanities Interventions Promote Progress in the Environmental Sciences?*

13 Castree (2021), *Environmental Humanities*, p. 1.

14 Van Duzer (2013), ***Sea Monsters on Medieval and Renaissance Maps***.

conceptualised as different, distant, and exotic. This way of understanding the world was one of true and continuous clash of realities. One of European against all "non-civilised" societies, and one of humans against nature and its elements. The early modern Western world was a time and a place of encounters and confrontation, of mixture and segregation, of order and disorder, of humans (different humans) and of nonhumans. Natural elements of the tropics, existing just to support human existence and to guarantee its survival, were placed out there, far and away from the "true humanity" and close to the "animality."

The encounter of European with the American manatee is the typical encounter of the modern era that places these people in a position of confrontation with the new and unknown, the exotic and the different, or, ultimately, the radically different. As such, the way of dealing with the animal, which is also typical of the European way of looking at an animal resource, is that of capture, appropriation, and death with a view to its use.

I have tried to see, so far, who the manatees are from the most varied points of view. The animal, the resource, the symbol. It is difficult to encapsulate in a single explanation what it means to be an animal in the period I have been working in, because multiple valences, forms, and existences inhabit each one and every species. How were manatees thought of and conceptualised? All the knowledge produced about manatees opens the way to their commodification – hunting, transformation, and exchanges within organised commercial networks – and to their conceptualisation within the field of natural history. Regardless of how this knowledge is produced or transmitted, heterogeneous knowledge has been accumulated and in dialogue between the various human traditions of seeing the world.

One of the other ways in which one can still try to see, perceive, describe, and convey the reality of being a manatee, or any other large marine animal, or even a sea monster, is through the construction of its natural history and cultural ecology. A journey that transports living things from their biological existence and their vital ecological place to distant spaces and realities – physically and conceptually distant – into the annals of human productions on the surrounding environment. As in its hunting, capture, and various uses, the animal has no purpose, or intrinsic value; it is simply a thing, an object or a food that has a vital interest in producing knowledge and a science that has been installed, centralised, and formatted into admitted canons. So, manatees also exist in their cultural–scientific purpose. And it exists in the visions of nature of the different peoples who inhabit planet Earth, who live with it, and who depend on it. Before we look at this animal through the lens of the science of the time, let us see who the people were

who observed, described, and shared knowledge, who were the builders of this science and natural history and who were its recipients.

I need to be cautious here, as one should always be with generalisations. And it is true that Europeans included people who shared not only their geographical origin and some common cultural backgrounds, but also clearly different narratives, motivations, and memories. There is a European matrix, of course, which is an aggregator. They lived in a Europe, at the end of the Middle Ages and the beginning of the modern era, in organic or somatic systems – within the natural (or naturalised) spaces and totally dependent on natural resources and energy for food, shelter, and security.[15] They lived in lordly hierarchical regimes, in nations mostly composed of "people" who lived at the absolute mercy of the seasons and local productivity, the climate changes, and oscillations and consequent famines, diseases, and epidemics.

Moreover, this was a Europe that was already very much altered in natural terms. Full of regions of transformed landscapes (including coastlines), agricultural development and predominant deforestation, large mammal species extirpated or extinct, full of dams, altered watercourses, and with coastal areas, estuaries, and silted-up lagoons with some aquatic resources already depleted. Moreover, these people who crossed the Atlantic Ocean came from markedly different climatic and biogeographic zones from those they came to know.

But European groups were not all the same, nor did they have the same expectations and interests when it came to maritime expansion and the entry and domination of new spaces and territories. The Europeans who arrived in the Americas came from different political regimes and different religious practices. In addition, cultural differences resulting from the fact that people living in Mediterranean coastal areas or located on the Iberian Peninsula facing the open Atlantic or facing the sea in the far north of Europe formed their ways of conceiving of the ocean, resources, and marine animals somewhat differently.

For the settlers and explorers who arrived in the Americas during the 16th century, regardless of their origin and motivation, there was an absolute need to live, and survive, in uncharted territory, characterised by living beings, cultures, ecologies, and climates different from those previously known. Everyone was interested in knowing, accumulating information and experience. Control demanded knowledge. It was therefore necessary to understand and map out details.

15 Marks (2018), *"Exhausting the Earth": Environment and History in the Early Modern World*.

And if everyone looks and everyone knows, not everyone registers or records it, not everyone disseminates what is observed and sheds light on the unknown. Individual human beings are markedly distinct from one another – their experience and what each person is interested in is quite unique; what each of us pays attention to, the information we gather, the memories and conceptualisations we create for ourselves or exchange with others, are different. An individual existence prevails that is, in fact, very varied. The written word and the form designed by the Europeans of the early modern era are the sources at our disposal to try to understand this natural and animal, natural and human past, and all the relationships that already existed, and those that were established due to contact, between people – whether these populations or groups of people were of European origin or Amerindian populations – and other living beings. From the words written and spread by the European, forged in the mental system of a Renaissance scientific construction, we try to understand (between the lines) the local perceptions and traditional ecological knowledge, the ways of using and understanding local ecosystems and the impacts and changes that existed at the height of the European arrival.[16]

It is possible to unearth the voices and existences of the silent actors.

In the pages of the general histories and natural histories that emerged from European contact with Americans, the ways in which locals interacted with and profited from their lush and abundant environment, is quite evident. On this same note, these details reflected an awareness of nature that fascinated Europeans.[17]

The first descriptions of the tropical fauna of the Americas available to us were made by Europeans who observed it first-hand. First, the conquistadors, colonists, missionaries, merchants, and many others to arrive in the newly found lands and seas. The exuberance was astounding, the difference in the habitats and species found, not to mention the peoples, was astounding to the newcomers. Much of what was being seen by those explorers had no place in their own belief systems and understanding of the world. The tropical nature, landscapes, peoples, and animals defied any logical explanation, and with that I mean the logic of God creation, and the role and place of humans and animals in the world. The hybrid manatees were deeply confusing to those who tried to describe and understand them among scholars, humanists, or educated settlers of the Portuguese and Spanish empires.

16 Mentz (2020); Mann (2011).

17 Mancall (2018), pp. 73–75.

> I shall deal in particular with a certain kind of them which are found around here, which they call manatees: those are so great, that the greatest weigh forty to fifty arrobas. They have a muzzle like an ox, and two stumps with which they swim, as if were arms. The females have two teats with the milk from which the children are raised. The tail is broad, blunt and very long. They do not have a face like any fish; only the skin is similar to the porpoise. These fish are mostly found in some rivers, or bays of this coast, especially where some brook gets into the salt water: because they put the snout outside and graze the herbs that grow in such areas and also eat the leaves of some trees they call mangroves, which are abundant in these rivers.[18]

> Goarágoá is the fish the Portuguese call ox, that swims in salt water, in the rivers close to fresh water, which they drink, and they eat a small grass that grows along the water; this fish has a body of the size of a two-year-old calf, and has arms like two stumps and hands without fingers; it has no feet but has a tail like a fish, head and muzzle like an ox, it has a very massive body and two gullets and a single gut, which has livers and lungs and pluck like an ox and all very good; it has no scales, but the skin is brown and coarse.[19]

> This fish has features like land animals, especially the ox…on the nostrils it has two "*courinhos*" with which it closes them, and snorts by them; and may not be long under water without snorting…under these arms the females have two breasts with which they feed their offspring, and they do not have more than one…with its round hands like shovels and on them has five fingers attached with each other and each has nails, as humans…[20]

To start with, there was the recurrent confusion of this animal being either a fish or a land "beast." A monster, no doubts about it.

> …it is a monster, without being beautiful, given that the females have in their breasts something like *hubres*, and the hands, after being skinned, look like human fingers; given these two similarities, we call them that; its fish is like pork, that is why the gentile call them angle fish (angle in

18 Gândavo (1980) [1550–1557], *Tratado da Terra do Brasil*, ch. 8.
19 Sousa (1989) [1587], *Notícia do Brasil*, pp. 198–199
20 Cardim (1980) [1540? –1625], *Tratados da Terra e Gente do Brasil*, pp. 45–46.

> their language is pig, others call it *cungi*); and the lean parts cooked with fat are no different from a pork loin, and many have been mistaken by it; [those] who did not know about it, [would] thought it was fish.[21]

> …these fish have the forehead as the oxen, but without horns, two legs under their breasts, they give birth to children like cows, they feed them with their milk, but the baby has the remarkable property of embracing the mother by the back with her little paws, and never leaves her even if they she is dead, reason why some are caught alive, and thus brought to the Island: they are very delicate.[22]

> This fish is not like the others, that lay eggs; they are raised in the bowels like the other animals; we learnt this because they caught and fished a female fish, and in the bowels they found her son, which they sent me, or better say, the skin, which I kept.[23]

> Guaragua is the sea cow, its length is about ten or twelve palms, it is thick as a cow; it is grizzly grey, the guts and inwards are like the cow's and it breastfeeds the cubs and has the teats underneath the arms; the males' genitals are as big as the horse's and of the same shape…[24]

Pero Magalhães de Gândavo, Fernão Cardim, Gabriel Soares de Sousa, and Frei Cristóvão de Lisboa, all described the animal for 16th- and 17th-century Brazilian shores,[25] as others also did for West African shores, such as Gioavanni Cavazzi or António de Cadornega. Many other authors have also written for the Americas, spanning from Pedro Mártir de Angliera, Francisco Lopez de Gómara, Gonzalo Fernandéz de Oviedo, José Gumilla, Bartolomé de las Casas to José de Acosta over the 16th century to plenty of others from different nationalities along the time of European hegemony in the Americas. Bursting of exhaustive new information, written descriptions full of details, and many illustrations, most of these authors and the body of knowledge they produced did not entered the European circles of Renaissance natural history, zoology, or ichthyology. Even if, in most cases, their works were not treatises of natural history, they were lost to

21 Cadornega (1681) [1942], pp. 67–68.
22 D'Evreux (1874) [1613–1614], *Viagem ao Norte do Brasil*, pp. 12–13.
23 *Carta do Padre Mateus Cardoso* (1955) [1621], p. 569.
24 Lisboa (1967) [1647], *História dos Animais e Árvores do Maranhão*, pp. 60–64.
25 Brito (2018), *Connected Margins and Disconnected Knowledge*.

the coeval authors of the about-to-emerge discipline.[26] Even in the nations of Iberian authors, the manatees go unnoticed, as much as the tropical natural history that only from the 18th-century scientific expeditions to the overseas possessions start to be seen as a true motif of the exploration of extra-European territories.

In Portugal, no true treatise of natural history or natural philosophy is found for the early modern period, with the exception of three cases, each of them quite different from the other – *Animaizinhos…*, *Piscilegio Lusitano*, and *História dos Animais e Árvores do Maranhão*. I will refer to them below.

The manuscript entitled *Piscilegio lusitano, Nova, Exacta, Natural, e Medicinal Noticia Dos nomes e qualidades dos Peixes que se pescão nos mares e rios da Costa de Portugal* (…) (New, Exact, Natural, and Medicinal News of the names and qualities of Fishes that are caught in the seas and rivers of the Coast of Portugal…), or simply named *Piscilegio lusitano*, is a mid-18th-century manuscript (c. 1750), written by Domingos Franco Quaresma, a native of Peniche (Portugal). In this 650-page manuscript, dedicated mainly to the study of ichthyology, sea and freshwater fisheries, the author lists and describes 135 aquatic species (including bony fishes, elasmobranchs, aquatic mammals, and invertebrates), highlighting topics such as whaling, quality and use of fishery products or ambergris, and the virtues of thermal waters. The manuscript was found and purchased at the Salon International du Livre Rare & de l' Objet d'Art 2017 in Paris (Grand Palais, 7–9 April 2017), and is currently part of a private collection of antique books and manuscripts dedicated to ichthyology, in Concarneau (Finistère, France). Like the *Traité Général des Pesches* (1769–1782), by Duhamel du Monceau and La Marre, in France, or the *Ensayo de una Historia de los Peces* (1788), by Cornide, in Spain, the nature and quality of this study could have made it a landmark in 18th-century Portuguese science. However, the Lisbon earthquake in 1755 and its consequences for the country, particularly at the economic level, most likely stalled the publication of this work, which thus remained unpublished, unknown to the scientific community and hitherto without having been studied.[27]

Since the mid-18th century, and within the scientific spirit of the period related to scientific knowledge of nature in Portugal and in other regions of

26 Brito (2018); Costa (2009), *Secrecy, Ostentation, and the Illustration of Exotic Animals in Sixteenth-Century Portugal.*

27 Iglésias & Mollen (2018), *Cold Case: The Early Disappearance of the Bramble Shark* (*Echinorhinus brucus*) *in European and Adjacent Waters.*

the Portuguese overseas empire,[28] authors such as Domingos Vandelli and Lacerda Lobo dedicated some time to the study of marine fauna, revealing a renewed interest in this subject. In fact, even before that date, we can find compilations of the existent Portuguese marine fauna and biodiversity, as shown recently by Herold, Horst & Leitão (2017, 2019) in the study of a mid-16th-century manuscript, which includes a list of aquatic animals. The manuscript, untitled but dubbed "The Natural History of Portugal" (1555/1556) by the research team responsible for its study, is divided into parts, the Second Part being "Small Aquatic Animals from Lisbon" (*Animaizinhos Aquáticos que se encontram em lisboa*). It lists several species of Portugal, including marine and estuarine fish (namely from the Tagus), molluscs and crustaceans and, among the fish, dolphins and whales are included. The manuscript, written in German by an academic friend of Damião de Góis, shows that the author was well aware of the Portuguese scientific scene at the time, providing relevant information for a better perception of Portuguese scientific thought of that period.[29] Unfortunately, the document transcript is not yet accessible and, so far, the index is the only information available for analysis and comparison.

The fact that dolphins and whales were historically categorised as fishes is relevant to our project and needs to be considered within the study period. Cetaceans were then categorised as fishes, as every "animal that borns and lives in the water, covered with skin, or scales, with gill, fins" (Portuguese and Latin Vocabulary by Bluteau, 1712–1728, p. 373). In fact, it was only in the 10th edition of Systema Naturae of Carolus Linnaeus (1758–1759) that whales were taxonomically classified as mammals (Class Mammalia; Order Cetacea).[30] In *Piscilegio lusitano*, cetaceans are present and in the case of the whales they seem to be treated in a singular way with the only depiction of the work being, precisely, that of a whale, which the author describes as a monstrous fish. Of extraordinary greatness, giving birth to live young, and breathing air, the whale was never just a fish, but frequently consecrated as the crowning creature of that group.[31] Neither manatees nor any type of sea monsters like the animal seem to be present in these scholarly pieces.

28 Brigola (2016), *Domingos Vandelli e a Circulação de Conhecimentos na Rede de Naturalistas Europeus*; Roque (2018), *Towards a Scientific Approach of Natures*.

29 Herold, Horst & Leitão (2017), *A "História Natural de Portugal" de Leonhard Thurneysser zum Thurn, ca. 1555–1556*.

30 Cuvier in Pietsch (1995), *Historical Portrait of the Progress of Ichthyology*; Laist (2017), *North Atlantic Right Whales: From Hunted Leviathan to Conservation Icon*.

31 Burnett (2007), *Trying Leviathan*.

The surviving part of the large manuscript by the Portuguese Father Cristóvão de Lisboa about the Brazilian flora and fauna,[32] encompasses extremely correct descriptions of animals and plants, and highly detailed drawings, some of which are now considered the first scientific account of the species for science, as in the case of the Amazonian river dolphin.[33] Quite unlike the previously mentioned works, his history of the trees and animals from the *Maranhão* included the Brazilian ox-fish – the *Goaragoa* – with a quite accurate description featuring precise details of the animal's anatomy and general features. His work may well be a rare and precious element of the Portuguese or Iberian natural history of the Atlantic or of tropical environments. Written in Portuguese, and sticking closely to the manuscript format, never exchanged in letters, correspondence, or oral information, it never reached the hands of European practitioners and naturalists. His manatee was definitively lost to early modern science. The scientific knowledge it contained has only been retrieved latterly, on upon the publication of the facsimile of the manuscript in the mid-20th century, and recently providing current day scholars with "simple" historical value, rather than the instructive and coeval value it might have had.

In Spain, a 16th-century bestiary was written and illustrated in the format of a natural history treatise, but no tropical marine animals are to be found there. In the so-called *Bestiário de D. Juan de Austria*,[34] we find a wide range of fish and marine mammals occurring in the European shores, and even a couple of sea monsters. But none of them can be related – neither by reading the descriptions nor analysing the watercolours – to the overseas knowledge that was produced in the vernacular languages of Iberia. On the contrary, it is possible to draw connections with the European authorities of the time, the Renaissance encyclopaedist naturalists Pierre Belon and Guillaume Rondelet.

Bestiaries are medieval manuscripts, generally in a small format, with descriptions of animals and plants usually accompanied by illustrations. They include real or imaginary beings, giving them a religious symbolism or a moral value. Being works of major influence in the medieval literature and iconography, they were highly popular in England and France from the 12th century onwards. An example of a late medieval work is the herbaria

32 Lisboa (1967) [1647], *História dos Animais e Árvores do Maranhão*.

33 Romero Jr. (1997), *The Scientific Discovery of the Amazon River Dolphin, Inia geoffrensis*.

34 The *Bestiario de Juan de Austria* is neither moralising nor symbolic, but from time to time fantastic and mythologic beings are included, and allegories for their value and purpose are referred to (giving it a slightly less rigorous profile as a typical Renaissance natural history book). García & Molinero (2000), *Bestiario de D. Juan de Austria. S. XVI.*

Hortus sanitatus, 1491, printed in Mainz in Southern Germany by Jakob Meydenbach. It is an herbal (a book about plants and how they can be used for medicine), but it is an unusual one because it also shows animals, birds, fishes, and stones. If we were to compare both works, in *Hortus sanitatus* the animals, birds and fishes featured are a mixture of real and mythical creatures, and the way they are presented is heavily influenced by the Bible, while *Bestiario* is a kind of encyclopedia of the animal kingdom or zoology (with fish, mammals, insects, etc.) that was constructed with an order or classification, even though the logic beneath it is not quite clear. This profusely decorated bestiary is the only in the world written in Castilian; it is still considered one of the most "enigmatic" books of the Spanish Bibliographic History.[35] It includes 484 pages full of information and details on the chosen animals, with descriptions and illustrations. It is composed by seven parts, a certain degree of categorization of the contents and of the groups of animals: 1 "Fishes"; 2 "Birds"; 3 "Animals"; 4 "Monsters"; 5 "Moral advices to Don Juan de Austria"; 6 "Exaltation of the Conquest of Granada"; 7 "Anatomy of What is Man."

As is easy for us to understand, the Iberian knowledge produced about the animal, mostly relying on local views, understanding, and practices on the aquatic environments, was as lost to the coeval natural history and zoology as it was to their modern equivalent scientific disciplines.[36] With just a couple of exceptions,[37] the stories and publications of the Portuguese authors, and some of the Spanish, reporting the natural history of the "East and West Indies" were not considered as relevant in the scope of the coeval domain of the European Natural History. Moreover, the Portuguese manuscripts regarding the nature novelties and exoticism remained locked away in bureaucrats' cabinets, concerned about revealing geo-political and commercial secrets and interests of the state. Thus, similarly to other discoveries and accounts on the exotic and tropical nature of the Southern Atlantic, manatees from the Americas remained basically obscure in the annals of natural history.

What I want to address now is the value of the information found on manatees in mainstream European-based productions, and how knowledge travelled (or not) the routes of the open sea from the region of occurrence of natural populations to the global centres of consolidation and dissemination of science. What were the routes and processes of appropriation, and how, in a

35 García & Molinero (2000).

36 Vieira & Brito (2017), *Brazilian Manatees (Re)Discovered*; Costa (2009).

37 Brito (2016), *New Science from Old News*.

sense, did Europeans, monopolise, and colonise nature from extra-European places? So, from the tropical coasts and rivers of America to Europe and then back again, how was a science of tropical nature constructed? On what pillars did they grow and what are the biological and cultural bases for the knowledge building structure? Many other examples could indeed be used, but the example of manatees and other large aquatic animals is a good praxis in understanding the evolution of natural history and philosophy.

I realise that several early modern authors referred to Indigenous names for the animal, usually using the term "*peixe-boy*" (ox-fish) or "*vaca do mar*" (sea-cow), as well as their many Indigenous counterparts, such as the *Yupi* names *goaragoá*, found later in the terminology used by Alexandre Rodrigues Ferreira (Figure 29), transformed into *juarauhá*.[38] The word "*manatim*" started to be employed in the European natural history treatises from the 17th century onwards and has been registered for the first time in Spanish, in 1526 in the *Sumario de la Natural Historia de las Indias* by Oviedo[39] along with the word *lamatim*, as the authors would state, probably emerging from the French "*lamentation*" in relation to the manatees' vocalisations, which sound like groans and grunts.[40] The term *manati* appeared, as we have seen before, in the early 16th century and is acknowledged by Spaniard conquerors and explorers; it seems to have originated in native continental languages, meaning "nipple."

What also seems clear by now is that, in the 16th and 17th centuries' European Natural History circuits, the work of Oviedo was assimilated by means of copies and translations. The reference to his manatee appears in Clusius' *Exoticorum*[41] (1603) with a different illustration from the one attributed earlier on to a production by Oviedo which is, in turn, copied, to Aldrovandi's work[42] (1613) thus becoming widely spread and known.[43] Aldrovandi assembled the description and illustration of the manatee, an exact copy of the illustration that had been published by Clusius. All the European descriptions of the manatee, even the latest from Jonston, are based on Oviedo's and Clusius's knowledge of the Caribbean and on their publications on the subject. All the same, the drawing from Cristóvão de Lisboa's authorship, from 1647, shows very high scientific quality and is much superior to other visual representations of this animal. It is also Aldrovandi

38 Ferreira (1903) [1786], *Memoria Sobre o Peixe Boy*, p. 169.

39 Oviedo (1995), *Sumario de la Natural Historia de las Indias*.

40 Ferreira (1903) [1786], p. 170.

41 Clusius (1605), *Exoticorum Libri Decem. Quibus Animalium, Plantarum, Aromatum*.

42 Aldrovandi (1613), *De Piscibus Libri V et de Cetis Lib. Unus*.

43 Gudger (1934), *The Five Great Naturalists of the Sixteenth Century*.

who coins the term "*Manati*" or "*Vacca marina*," which would subsequently be used by Linnaeus when classifying the species as *Trichechus manatus*.[44] Linnaeus indicates its habitat as the marine environment in the Americas and the defined typical locality is the West Indies, turning the West Indies manatees as the paradigm to all the three species. From that moment on, all the information available would be related to occurrences in that region, while setting on a second plane all the other species, populations, and their ecologies.

As referred to in the opening sections of the book, descriptions and representations of manatees and mermaids, as marine animals or mythological beings, appear frequently together. Several Renaissance authors gather references to these two kinds of beings in only one volume or in subsequent editions. This is the case with Rondelet, Gesner, and Aldrovandi amongst others, who describe the Western Indian manatee and other marine beings, together with segments of human physiognomy. In his monster story edition, Aldrovandi gathers written and visual information on the "*monstrum marinum humana facie*,"[45] "*monstrum marinum effigie monachi*," "*monstra niliaca parei*," and "*monstrum marinum rudimenta habitus episcopi referens*,"[46] which all have human features. These marine animals are frequently associated with mermaid legends and other half human marine beings that proliferated in encyclopaedias for quite a long time,[47] Our hybrid manatees, our hybrids beings from the sea, are found once more in the zoological treatises of the early modern age, in the Renaissance paradigm of recovering all from Antiquity but still making sure that every single novelty prevailed, mermaids and manatees are placed on the same stage, in the same book, in the same pages. We know, of course, that the history of exploration and knowledge of the sea are filled with these kinds of legends, which are not false but contain little remnants and foundations of reality.

We have also seen in previous chapters that the process of communicating information, of exchange of letters, drawings, and events, did happened in the early modern circuits of natural objects, art, curiosities, and animals. Information travelled within Europe, but also from outside and based on the interpretations of people that were travelling around the shores and open waters of the Atlantic. Images circulated widely, were

44 Hartt (1885), *Contribuições para a Ethnologia do Valle do Amazonas*.
45 Aldrovandi (1642), *Monstrorum Historia,* p. 27.
46 Aldrovandi (1642), *Monstrorum Historia,* p. 358.
47 Brito (2018).

printed, and copied and were an important source of information for naturalists and scholars, but were also of interest to wider audiences. Both the natural event, or the animal, and the illustrations excited curiosity and were sources of pleasure and amazement. Early modern collections of *naturalia* drawings were created for a range of reasons and fulfilled many different functions; in their multiple and overlapping roles, the images stood in for objects that once were alive, and they were objects in themselves.[48]

Tropical sea animals and eccentricities from faraway waters were the subject of great interest in a Renaissance Europe avid for novelty. Even if built on the knowledge acquired and appropriated locally, the early modern construction of a natural history of the exotic marine fauna is made through the same regular paths of science development in Europe. Scholarship in the Renaissance was typified by the activities of humanists – classically trained, bookish scholars concerned with finding the meanings and nuances of ancient Greek and Roman texts on oratory, history, and philosophy, using philological and other forms of investigation. Reverence for an ancient past may not look that promising when investigating nature, but these humanists' penchant for describing particular events and details and their enthusiasm for classical models of inquiry were important foundations for the study of natural history.[74] Scholars, humanists, and naturalists based in Europe, despite their degree of information on tropical species, their habits and environments, shared the scene of creating state-of-the-art information that would later be copied or cited in 18th- and 19th-century zoology compendia, dictionaries, and classification systems. Iberian explorers, missionaries, writers, and naturalists based in the overseas, observing exotic nature with their own eyes and transferring their observations to the paper, under the form of prints or manuscripts, were not the main agents in constructing a natural history of exotic marine mammals.[49] The exuberance, novelty, and abundance they witnessed was shared through maps, logbooks, letters, manuscripts, and printed publications in vernacular languages. They circulated across the Atlantic, moved from hand to hand, author to author, and across different types of receptors and spectators, but did not make their way into central routes of European natural knowledge production and exchange in the 16th and 17th centuries and beyond.[50]

48 Egmond & Kusukawa (2019), *Gessner's Fish: Images as Objects*; Egmond (2017), *Eye for Detail*.
49 Brito (2016).
50 Brito (2016, 2018).

Naturalists of the 18th and 19th centuries, kept on wondering about these marine monsters and fabulous animals that existed in the medieval bestiary (as *Hortus Sanitatis*), and that remained in Rondelet, Gesner, Aldrovandi writings and in other European Renaissance naturalists' works. In those days, few people believed in the existence of unicorns, centaurs, or monkfish and even showed scepticism regarding animals that were not reported in their natural reality. Despite being contested by the sceptical, naturalistically speaking, the belief in the existence of tritons and mermaids has persisted for longer than expected. The zoologists from the 18th century affirmed that an imperfect image of the mentioned "fish," the sea-cow, have probably originated in the legends of these sea creatures with human appearance. These animals rise in a semi-erect manner and can remain upright, sometimes with their bodies out of water. Someone looking at this might discern hands, breasts, and hair.[51] Maybe these *sirenia* sightings would be enough to originate and continue the accounts on mermaids. Manatees occurred abundantly along the western coasts of Africa and dugongs lived in the Indic Ocean margins, from whence the first descriptions may have travelled up to the Mediterranean world, eventually giving rise to the mermaid fable. Or they simple became mirrors of the myriad of past mermaids, nereids, and sirens. The end of the 18th century and the beginning of the 19th century was a key period with respect to the separation of popular visions from the erudite (i.e., learnt) visions of the natural world. Although the legend prevailed, the naturalists and zoologists were certain about a "real" animal that was hidden behind these myths. Since then, and to this day, many modern authors still believe those animals were the origin of the legend, rather than the legend being the origin of those animals' names.

In the construction of knowledge about the manatee, and starting from the early 18th century, several authors started actively compiling information and acknowledging previous scholars. The compilation was meant to show a degree of scholarship on the topic as well as the readings and connections of the authors, when trying to describe all animals from a certain region. An example is the book by Hans Sloane, which describes a journey but simultaneously categorises natural life and divides nature into books and chapters according to their characteristics. For the manatee section – inserted in *Book VII. Of the Quadrupeds and Serpent of Jamaica* – just its heading is enough to show us this; the animal is identified as well as the authors reviewed to write this part.

51 Keith (1983), *Mand and the Natural World*, pp. 79–80.

> *XVI. Manati seu vacca marina, The Sea-Cow. Manatus. Rond. p.490. Manati de Oviedo lib. 13-cap.10. The ox-fish of an Anonymous Portugal. Apud Purchas p. 1312. Lib. 7. Cap. 1. Lamatin de Rochef. P. 149. Lamantin on Manaty de Dutertre p. 199. Lamentin de Labat.*[52]

A 17th-century scientist, scholar, and Jesuit priest, Gaspar Schott, produced several encyclopaedic works during his life, covering subjects from mathematics, physics, and engineering, to magic, monsters, and the natural world. Manatees and mermaids also find a place in his tomes as well as on his covers, following descriptions and depictions of previous authors – he was, in fact, an assistant to the renowned scholar Athanasius Kircher in Rome. Both illustrations and contents in his work refer to other well-known previous sources, such as Conrad Gesner and Ulisses Aldrovandi. Some familiar monstrous creatures, including mermaids, tritons, and other sea monsters, appear in similar formats as in previous works.[53] From this point on, authors acknowledged their peers and previous authorities as current practice based on their networks of contacts and exchange information.[54] While natural history knowledge evolved under Enlightenment, the curious juxtaposition between superstition and science persisted. And the encompassing of tropical nature and the acknowledgement of local and traditional knowledge was far from being reached. While producing natural history treatises on tropical species and ecosystems, locally, scholars also continued to refer to previous authorities as well as basing their knowledge on observation and local expertise. The late- 18th-century work *Paraguay Natural Ilustrado* by the Jesuit missionary Joseph Sánchez Labrador is such an example. Full of aquatic animals' descriptions from the region – including caimans, manatees, turtles, lizards, sea lions and sea wolves, and *hombres mariños* – this truly naturalist author relies on the previous publications and refers to authorships, as much as he does locally obtained information.[55]

More research will be needed in the coming years, as it can offer us insight into European productions for the early modern period and the value of different aquatic mammals and the circulation and evolution of knowledge production in the early modern world, without excluding

52 Sloane (1707–1725), *A Voyage to the Islands Madera, Barbados, Nieves, S. Christophers and Jamaica*, Tome 2, p. 200.

53 "*Physica Curiosa*" (https://www.oddsalon.com/physica-curiosa/) and "*Monsters, the Scientific Revolution, and Physica Curiosa*" (https://blog.biodiversitylibrary.org/2013/05/monsters-scientific-revolution-and.html).

54 Brito (2018), *Connected Margins and Disconnected Knowledge*.

55 Lavilla & Wilde (2020), *Los Anfibios y Reptiles de El Paraguay Natural Ilustrado*.

the non-European Atlantic world. The motivations and expectations of different scholars, including indigenous ones, may shed new light on the formal and informal networks of information exchange, production, and circulation of natural history knowledge. These kinds of studies, guided by a multidisciplinary approach, will certainly provide a new perspective on modern aquatic ecosystems, on the use of animals, and the development of Iberian perceptions of the peoples–animals–-oceans relationship, based on empirical data and observation. This amount of information was the cornerstone for the scientific enterprises to be undertaken from the late 18th century onwards. It is just another small step in the castle to be built over the next two years around the past peoples–animals–oceans agenda.

Multiple perceptions about the animals and the uses of manatees have persisted from the 16th century to this day; concepts and descriptions were set in stone, or better, in the pages of European tomes and prevailed over local perceptions and worldviews. Around the 18th century, we start to find some ideas related to nature and its resources that reflect current ecological concerns and reflections. The concept of nature conservation and, above all, resource management, started to emerge.[56] The image of the Earth as an integrated and living entity, the obstructive impact of human action, the risk of social and economic collapse due to environmental degradation, and the need to promote a sustainable form of development, are present in the writing of some authors of that period in respect of Brazilian colonial biodiversity.[57]

Would this have been written in our current global and conservation-oriented Westernised world, then the words of Alexandre Rodrigues Ferreira might have echoed differently. If the first descriptions do not show any content related to the exploitation of these animals as a finite resource, from the mid-18th century onwards these concerns became more frequent. Thus, the discourses of different authors, including Rodrigues Ferreira, started to diverge from the first descriptions and uses, into questions related to the continuous capture of manatees over time and some concerns regarding its maintenance in the natural environment due to overexploitation.[58] The matter here was to keep the hunt, the valuable fishery, sustainable (Figure 30 and 31). Simply put, to capture manatees, we need to have manatees in the environment. But this also reveals the first concerns regarding the use and

56 Vieira & Brito (2017).

57 Pádua (2000), *Annihilating Natural Productions*.

58 Brito (2018).

the abuse of living resources.[59] For probably two centuries now, Portuguese have been capturing, using, and trading the ox-fish and its valuable products; and almost certainly by the mid-17th century they were becoming rarer and difficult to capture in numbers that were economically viable. Letters were written and sent about this – e.g., a letter from Belém do Pará, Brazil, 6 September 1724[60] – and business was no longer as usual. Manatees were not infinite, neither were many of the aquatic resources usually exploited, such as large fish, turtles, and many other tropical species. Nevertheless, by the end of the 18th century (Pará, Brazil, 16 February 1793) ox-fish salted meat continued to be exported from Brazil to Portugal,[61] albeit it was aimed solely at elites. It probably became a delicacy available only to the few.

Whether the manatee was an animal, a resource, or a symbol, it was all a matter of perception. Sociocultural groups, or individual people, would have seen and perceived the value and importance of animals very differently. Perception is a case of individual understanding or cultural influence; it is the ability to see, hear, or become aware of something, and the way something is seen, understood, or interpreted. It means the use of senses, experience, or acquired knowledge to understand something, including its physical observation or a belief or opinion about things and events. Society and groups or individual education, religion and beliefs, experience and practices, history and memories, influence how the perception of something is constructed, both at the individual and collective level. This applies to human actions as well as to the existence and value of nonhumans.

What was important to maintain as a resource? What practices and techniques should be implemented to ensure the availability of these valuable products extracted from aquatic environments? What societies, or what levels of these societies, would be interested in keeping animals alive, and why, and who was intended to capture them and transform them from staple foods into commodities?

Environmental perception is the way natural elements are regarded, understood, interpreted, and, ultimately, used by humans. This concept

59 Vieira & Brito (2017); Pádua (2000).

60 *CARTA do governador e capitão-general do Estado do Maranhão, João da Maia da Gama, ao rei D. João V, sobre a despesa feita com quatro barris de peixe-boi e da impossibilidade de se carregarem navios com eles, pela dificuldade em capturá-los.* AHU. *Projecto Resgate* (AHU_CU_009, Cx. 14, D. 1415).

61 *OFICÍO* [*do capitão general do estado do Pará e Rio Negro*], *D.Francisco* [*Mauricío*] *de Sousa Coutinho, para o* [*secretário do estado da marinha e ultramar*] *Martinho de Melo e Castro, remetendo alguns barris de carne salgada e peixe-boi oriundos da vila de chaves, a bordo da charrua "*[*santo António*] *providência".* AHU. *Projecto Resgate* (AHU_ACL_CU_013, cx.103, D.8130).

is central to the comprehension of past, current, and future relationships between humans and other animals and ecosystems, and eventually to addressing and modifying paradigms of nature's appropriation and exploitation.[62] In Westernised societies, we may encounter overexploitation and a total disconnection with nature and animals, while in traditional and Indigenous societies, ancient practices and beliefs may be counterproductive for the implementation of local and international conservation measures.[63] Studies on environmental perception and its impact on environmental conservation bridge several disciplines, including: environmental conservation;[64] environmental history and historical ecology;[65] anthropology, immaterial and cultural heritage;[66] ethnobiology, ethnic and cultural studies;[67] history and philosophy of science.[68] No doubt, the study of human perception about the environment and animals should also comparatively address distinct time periods, geographies, and cultures.

Animals are creatures that inspire our imagination, live in sacred stories, inhabit the most thrilling nightmares, are kept in our repositories of memory (Figure 32), and hold up a mirror to who we are. This is particularly true of the aquatic and oceanic realm, where the sea itself represents a mirror to human actions, abilities, and aspirations. Even more so to human societies that live, or used to live, in close connection with shores, seas or other bodies of water.

To bring about a much-needed change in values and attitudes towards nature, we need to link history, memory, and traditional ecological knowledge and understand human actions and what triggers them. In addition, we must demand alternatives and new responses to environmental use and address cultural perception and cognition as pre-behavioural processes in interaction with the environment. Changing the way Westernised societies view nature and working to recognise different worldviews can be a step forward for the conservation of threatened species and the sustainable management of many others. Using animals and ecosystems

62 Sepie (2017), *More Than Stories, More Than Myths*.

63 "Villagers thought they killed a supernatural shape-shifter. It was an endangered Sumatran tiger" https://www.washingtonpost.com/news/animalia/wp/2018/03/05/villagers-thought-they-killed-a-supernatural-shape-shifter-it-was-an-endangered-sumatran-tiger/?utm_term=.4aac8a8d074d

64 Byg (2017), *Conservation in the Face of Ambivalent Public Perceptions*.

65 Brito & Vieira (2016), *A Sea-Change in the Sea?*.

66 Holmes et al. (2018), *Fantastic Beasts and Why to Conserve Them*.

67 Sepie (2017); Hunn (2011), *Ethnozoology*.

68 Almeida (2008), *Science during the Portuguese Maritime Discoveries*.

as key actors, and (re)connecting with more-than-human worlds,[69] may bring different peoples together envisaging a shared strategy for conservation (Figure 33).

Manatees – but also sea turtles, whales, or sharks – demonstrate how different individuals or different groups of peoples think very differently about nature, about animals, and about our relationships with them. If in Europe or North America, generally they are perceived as animals – and species – that need to be maintained in order to keep natural, balanced, and healthy ecosystems, in many other places where they live they are regarded as elements of the environment to be used by people in multiple ways. Nature in its abundance and diversity historically exists to be explored and regarded in the benefit of humans' needs. As other authors also argue,[70] the hunt and extraction, the use of and the knowledge production about manatees, turtles, and whales, were central parts of the making of the early modern European colonial empires. The connection between the establishment and development of overseas colonies and the crucial importance of marine resources' extractions for the circulation of knowledge, practices, techniques, and products is clear for the Iberian empires.

For example, whaling – due to its economic value and for all the administrative issues associated with the lease of contracts – has made the whale, over these two centuries, an agent in the construction of the Portuguese presence in Brazil. The whale was the subject, among monarchs, viceroys, ministers and governors of captaincies, naturalists and diplomats, and its exploitation in Brazilian coastal waters was not only included in the strategies of dominance and colonization of Brazilian territory, from the 17th and 18th centuries, how it facilitated and promoted them.[71] The Atlantic world was constructed on the backs of whales, sea turtles, and manatees, as much as it was from sugar and cotton plantations. This was a world of contact, encounters, and confrontation, of syncretism, of a mix of cultures and peoples, of adaptation, settlements, appropriation, and disruption. A world built upon paradoxes and fluidity rooted the creation of the interconnected Atlantic Basin and permeated histories and ecologies up to our days.

Manatees are killed and used today by local people and individuals on both sides of the South Atlantic, as they have been for centuries; at the same

69 Sepie (2017).

70 Crawford & Márquez-Pérez (2016), *A Contact Zone* ; Harris (2020), *Maritime Cultural Encounters and Consumerism of Turtles and Manatees*.

71 Vieira (2020), *A Taxonomia da Baleação Portuguesa entre os Séculos XV e XVIII*.

time, they are regarded as emblematic species, conservation icons, and key elements of ecosystems (see Figures 32, 33, 34, and 35).

But contrasts prevail; they are also killed not for food, but because of human presence in US coastal waters, where they are a highly protected species. Boat attacks are the leading cause of death among protected manatee populations in a country where conservation measures are implemented and followed. We see a reverence, and some fear, simultaneously to conservation and consumption interests in Senegal and Nigeria. We see both *Mami Wata* and *Ngulu-a-maza* in all of this. Manatees can be considered as supra-creatures or hyper-objects.

We see an expectation and a conservation effort that nevertheless is unable to cope with the super-imposed presence of humans in the space of these animals. How many sides can this story have? More than two, that is for sure.

Empathy, even if not initially felt by the European settlers and explorers, began to be part of their relationship with the natural world. Hunting scenes, animals that cried, mothers and calves separated, all became part of the mix. Father Cristóvão de Lisboa was one of those that in the mid-17th century wanted people to know what was being done to the fish-manatee – "I saw a female being killed and skinned and they put the skin on the shore; and in the next day, when they went to collect water, they found the cub lying on the skin and took it."[72] Alexandre Rodrigues Ferreira, states that there was no use in capturing and killing mothers with calves, or small-sized animals, because of the impact that this would have on the number of available manatees – it should not be surprising to see how rare they are in some lakes where we have not seen them for years.[73]

Moving from the monstrous *Igpupiara* to the strange but useful *Iguaragua*, from animal-resource to animal-being, we witnessed some degree of transformation in Iberian perceptions and ways of looking at and understanding manatees in the Americas. The first concerns about its (lack of) abundance and the fact that its hunting, apart from not being ethical, is not, for the most part, sustainable, began to emerge.

Examining the sustainability of nature, we find the one we know today and the one that – although unaware of it – naturalists and scholars, as well as traders, were beginning to apply in their understanding of the aquatic world and resources in the early modern Atlantic. The continuous hunting

72 Lisboa (1967) [1647], pp. 60–64.
73 Ferreira (1903) [1786].

manatee was not sustainable; neither was hunting whales nor sharks, nor any of the aquatic megafauna. We know that today, and this perception cut across the historical sources I have analysed, and reverberates in descriptions of past sentiments, interpretations of the natural world, and the use of these natural resources.

Until this moment, it has not been possible to collect sufficient quantitative information from past centuries – even more difficult for the 16th and 17th centuries – which allows a compilation of numbers, abundance, and trends over time. We know that natural aquatic population numbers have declined significantly, but many gaps remain that will hopefully soon be filled.

The so-called early globalisation hit the Atlantic world – both Old and New – hard when Europeans came into conflict with Native Americans after the first modern expansions and conquests. Early globalisation is the counterpart, or the other side of the mirror, of the so-called early Anthropocene. Associated with the breakdown of socio-economic systems in the Americas, the early emergence of capitalism, and the cultural and ecological homogenisation of the world in contact, this was a tipping point. Some call it a Blue Anthropocene, the Capitalocene, the Homogenocene,[74] or even the Eremocene[75] – as the moment that turned the world into a place of homogeneity and loneliness. I will go one step further in pluralising our present idea of the Anthropocene and say that it was a point of no return for planet Earth working from and with forces not just human but involving the complexity of ecocultural systems. In my view, it marked the start of what I call the *Extocene* – a time in which we find a peak of multispecies and external actions to bodies, as well as mutual or unified existences emerging from relationships, interactions, and reciprocal or conflictual entanglements. A remarkable epoch that builds on the events, dynamics, narratives, achievements, and processes that unfold and evolve from the 16th century onwards with the advent of the fully or partially in touch – but transformed, irreversibly toxic and deteriorated – world. A moment of transition, that golden peak that can be measured by geophysicists and biologists as well as historians and anthropologists, as the result of explorations, extractions, extirpations, extinctions, extensions, exhaustions of global resources, and the respective ecological and cultural consequences.

74 Mann (2012), *1493*, pp. 23, 32.
75 Wilson (2016), *Half Earth*, p. 20.

Concepts that support these assumptions are the "Columbian exchange" – should we not also use the term *Cabralian* exchange? – ecological globalisation or "wet globalisation." The early globalisation is in itself embedded with the concepts of the Columbian Exchange coined by Alfred Crosby[76] and of an ecological globalisation seen as the spatial displacement of the human interface with nature and its profound economic impacts and environmental consequences for human settlements and animal populations.[77] I feel tempted to dive into the latter, and to follow the words of Steve Mentz, who describes this early modernity as a process of cultural expansion that was, in fact, a globalisation, but more accurately could be stated as an ecological globalisation or a wet globalisation. For humans to conduct this "offshore trajectory," "the crucial technology was the oceangoing ship and its antifundamental environment the sea."[78] We cannot tell this human history apart from animal history and we are doing that by exploring the Environmental Humanities.[79] We can no longer try to understand separately the history of humans and of other animals. We are a species that occupy and depend on the world's ecosystems. All elements of nature are part of it and surely need to be accounted for as active agents; and we have now a way to address multispecies assemblages in order to produce historical narratives and "to speak of a world at once globally integrated and yet intensely differentiated."[80]

All agents share the same shape-changing destiny, a destiny that cannot be followed, documented, told, and represented by using any of the older traits associated with subjectivity or objectivity. Far from trying to "reconcile" or "combine" nature and society, the task, the crucial political task, is contrary to distributing agency as far as and in as differentiated a way as possible – until, that is, we have thoroughly lost any relation between those two concepts of object and subject that are no longer of any interest any more except in a patrimonial sense.[81] Humans and manatees are equal elements of the same "natureculture" systems. Peoples, as individuals or as societies, come across and live alongside with aquatic fauna. They are familiar to these species. Even if living in distinct environments and meeting each other in a permanent state of displacement or discomfort, history

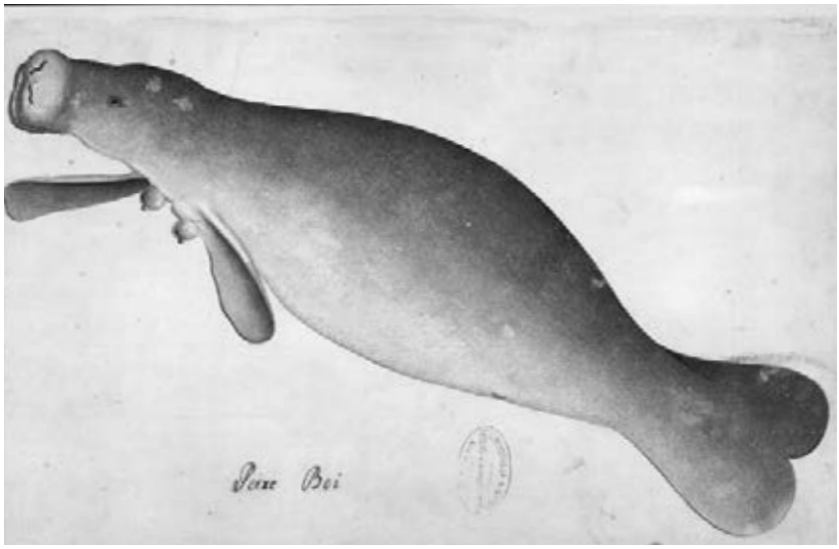
76 Crosby (2003), *The Columbian Exchange*.
77 Barrett et al. (2020).
78 Mentz (2020), pp. 32–34.
79 Castree (2014).
80 Castree (2020), p. 41.
81 Latour (2014), *Agency at the Time of the Anthropocene*.

shows that connections between these land and water mammals are real and inevitable.

The Anthropocene is presented and supported by the conceptual reality and scientific background of geology and geophysics, but is currently contested, discussed, and pluralised by different disciplines and considering different worldviews. This results from the cross-fertilisation and interdependent effect of the multi-species existence and cultural plurality of our world. This opens the door to a new Anthropocene that is not commanded by humans, or by a single species. One that, on the other hand, does not consider this species to be alone at the centre of its causes, or that it is the only one suffering consequences. For me, to externalise the Anthropocene from the human species is to create the possibility of an *Extocene*, in which one tries to reduce the divide between different human societies and cultures, between nature and culture, and between humans and nonhumans. Furthermore, this discussion allows us to consider different forms of temporality – beyond the linear one that typically leads to the sequential and consequential analysis of historical and natural events – by considering the circularity of existence on planet Earth and the existence of nonhuman times and histories.

My approach results from contact with the recent works of Charles Mann, Anna Tsing, Steve Mentz, Marco Armiero, and many other colleagues who seek to pluralise the Anthropocene, as well as from empirical research conducted by the author in recent years on the past exploitation and knowledge of marine animals by different societies in the South Atlantic. Even if based on human perceptions, representations, and memories, one must embrace other species, their potential cultures, times, and ecosystems, and their co-agency in co-producing narratives. The surface of water and the depths of water – be it the ocean, the coastline, or rivers – are the common place of humans and other aquatic animals and both their agencies are always brought into play. The contact, the encounter, the confrontation between culture and nature exists, but they are not so clearly distant. They are as distant as the roots and leaves of a tall tree. Regardless of form, function, perennialism, genetics or memory, they are constituents of the same living entity. They influence, impact, and depend on each other; they live in a web of connections and interdependencies. They are related.

The truly non-opposing poles merge, and – whether real or conceptual – distance, difference, space and time, matter, culture, and beliefs, are blended in the process of co-creating a path shared by the different species sharing the planet Earth over time.



▲ Figure 29 – The manatee, known in colonial Brazil as *peixe-boi* in Portuguese and as *iguaragua* in the local Tupi language, is show in this painting as a female. This illustration is from an 18th-century manuscript by Alexandre Rodrigues Ferreira *Viagem Philosophica*. It serves the purpose of identifying the animal and offers an anatomical view of the specimen (21A,1,004 nº011 – Manuscritos). © National Library Brazil (permalink: http://objdigital.bn.br/acervo_digital/div_manuscritos/mss1255460/mss1255460_11.html) .

▲ Figure 30 – Postcard showing eleven Amazonian manatees captured in the large lake in River Purús, a tributary of the River Solimões, in the upper Amazonian basin (possibly early 20th century). Published with written permission from Samuel Iglesias (personal archive).

▲ Figure 31 – An old room of the National Museum of Natural History and Science in Lisbon (Reference: UL-MNHNC-AHMUL), prior to the great fire of the late 20th century. The photograph shows mammals brought from Portuguese expeditions in Africa and/or Brazil and, on the floor of the room, we can see two manatees, possibly females as they are accompanied by two calves.

◀ Figure 32 – Former manatee hunter holding a hand harpoon with rope attached. This technology is very similar to the method historically described as being employed by fishermen in the same region. Photo taken in Northeast Brazil (1990s) and published with the written permission from Régis Pinto de Lima.

▲ Figure 33 – An African manatee hunted in Badagry Lagoon, Nigeria, by local fishermen, in 2008. Up to current days, poaching, hunt and use of manatees is a relative common practice in the region, with many animals being killed, but local conservation efforts are underway. Photo by Uzoma Ejimadu published with his written permission.

◀ Figure 34 – Two African manatees were accidentally captured in a fishing net in 2017. This photo shows their transport to a safe release area inside the Joal-Fadiouth Marine Protected Area. Photo by Tomas Diagne, African Aquatic Conservation Fund, published with written permission from Lucy Keith-Diagne.

▲ Figure 35 – A recent photograph of a recovered manatee being transported to be released into the wild, Paraiba, Brazil. © ACERVO FMA. Published with written permission from João Carlos Gomes Borges, Fundação Mamíferos Aquáticos, Paraíba, Brazil.

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The *Roundness* of Earth and Time

We are all blips of life in a sea of eternity.[1]

We live on the Rock-Water Earth, a place loaded with *R*s that is fluid in its endless gravitational and temporal movements that connect it to the Sun. Earth spins and its geological cycles and historical times *Repeat*, *Rediscover*, *Resume*, *Reunite* in constellations of details that are lost in the memories of the planet – as in the memories of those living beings who, for a moment, inhabit it.

The history of the lost moments, the unspoken stories, sheds some light on those who now live here and allows an understanding of how the interdependencies between people and the rest of the natural world occurred and what were the consequences of a certain set of choices. In the same way, it allows us to understand how different peoples – with different cosmogonies, worldviews, and ways of being on Earth – acted over time, in parallel and convergent ways in some cases, and in totally divergent ways in others while facing interactions with their surroundings and the resources necessary for their survival.

A few years ago, I had the chance to listen to Ailton Krenak talking to an audience in Lisbon. The Indigenous leader, environmentalist, and writer brought his own *Rio Doce* into our lives in a pungent, human, and profoundly amorous way, creating with us an invisible link that was impossible to escape from.[2] From Brazil to Portugal, he carried the river with him. This river that is more than a watercourse, food for people, and home to animals and plants; this river is a member of his body, a member of his family, he is related. It is the connection lost by the Western world that unites and unifies the human being to the nonhuman being, all of us beings who can exist only by living together and interconnected. This Nature is more than a biological ecosystem, it is life, it is concepts, it is culture.[3] This Nature of

1 Merchant (2020), *The Anthropocene & the Humanities*, p. ix.

2 Ailton Krenak lecture "'*Do sonho e da Terra*' in the Cycle Indigenous Questions: Ecology, Land and Amerindians' knowledge," at the *Teatro Maria Matos*, in Lisbon (2017) (https://www.arquivoteatromariamatos.pt/explorar/ep-43-ailton-krenak-do-sonho-e-da-terra/). Krenak (2019), *O Insustentável Abraço do Progresso ou Era Uma Vez uma Floresta no Rio Doce*. The author opens his chapter with an historical description of the exuberant and beautiful landscape where the Krenak people lived in – a large area of mountains and valleys covered with rich forests, abundant game, and plenty of fish in the waters of the rivers.

3 Smith (2021), *Anxieties of Access, Remembering as a Lake*.

people and non-persons – some say they are the Absolute Opposite, or the Radically Other, but still, we are so intimately related and interconnected – is a true organism; it is a whole systemic network of interdependencies. This way of understanding life and existence is essential in today's world and beyond to be understood, to be irreversibly accepted, to be nurtured, preserved, and maintained.

Right after Krenak, I listened to Jane Goodall,[4] the conservationist of African primates who believes and verbalises that it is still possible, it is not too late for us – living beings and planet – because Nature is prodigal in regeneration. Whole cycles of life and rebirth in a single planet, in a single being, either a human-individual, plant-individual, or animal-individual. Cycles of mutual understanding of life, cycles of overcoming. Even if we must take two steps back to be able to take one forward. So be it. Two back, one forward, slowly but steadily towards tomorrow, our common Time.

There is hope in change, slow no doubt, but real – that is what Christof Mauch called "Slow Hope.". He tells us that it is simultaneously compulsory to find ways of mitigating growth curves – all curves, including those of contamination and mortality caused by the Covid-19 pandemic[5] all over the world – which reflect the increasingly accelerated rhythm of ecological destruction and social acceleration. We need to contest with narratives from the viewpoint of the environmental humanities and environmental history. Narratives that show all the possibilities, the recoveries, and re-established balances in nature. Narratives according to which time may turn back on itself, in which "natureculture" systems may reorganise themselves and recover, and in which human efforts will allow a fairer planet for all.

Narratives of faith and ecologies of hope.[6]

In my own quest for a comprehension of a more unified way of living, of a life organised spherically or circularly mimetising the ball that supports it, I came across a text that awakened one more reflection – this, of a circular planet.

Well, it seems like the Earth is round.

4 Lisbon, 2017, May 25, at the National Geographic Summit "*Uma Visão Mais Além*."

5 The pandemic caused by the coronavirus lead not just to scientific advancement and acceleration, but also elicited reflexions on and reconstructions of the ways the world is seen and thought in current days (with branches into past perspectives and to future challenges and much need reconfigurations). See, as just one example, the publications of HALAC-SOLCHA devoted to this under an environmental history and the green and blue humanities' perspective and plural viewpoints (e.g., https://www.halacsolcha.org/index.php/halac/announcement/view/31).

6 Mauch (2019), *Slow Hope*.

This text is part of those within the Humanities turn,[7] that wisely shuffle ideas and mix concepts, confuse all the know-hows, all the spectra and the productive forces, while also bringing forward emotions, sensations, spirituality, and perceptions. In it, Amba J. Sepie writes about everything that exists beyond the stories and the myths, everything else that exists beyond superficiality, and wanders also on the multiple natural realities.[8]

It took humans a catastrophic reality, an almost dystopic world like the one we were living in (during the pandemic times), to stop and to allow ourselves to *Rest*, *Rethink*, *Return*, *Reinvent*. The Great Pause, some say. Living at this halted time, in this big cyclical and round time, many of us have been living shut inside our homes for so many months. In these homes smaller than the planet Earth, in the housing we have built for ourselves inside the natural, naturalised or totally humanised ecosystems in which we live in – some of us in concrete houses, some in wood, some in the forest and by the rivers.

Today, Ailton Krenak is at his home back in *Rio Doce* where, apart from just mourning for the river, people engage with a new collective mourning.[9] It is the grief of all people, because all environmental, climatic, and epidemic mourning are (or should be). But for most of us this is a state of existing collectively that we still have not reached and possibly never will. In fact, there is a possible analogy of the *R*s that I am bringing forward as a thesis, as much as the *Extocene* conceptualization. Looking at the present, past, and future in circular, cyclical or spiral ways[10] and taking on life in a non-linear temporal context, moments, places, and worldviews can face, and mirror, and illuminate each other. The same way, concepts built by different cosmovision and cosmopolitics can mirror one another.

Look at our current archetypal *R*s of environmental conservation, five of them, each of them trying to save what we destroy daily, with which we fill our actions and minds to believe we have done good – *Recycle*, *Reuse*, *Reduce*, *Refuse*, and *Rethink*. These five *R*s must be put head-to-head with the Rs of other societies, such as the examples mentioned by Sepie as other ways of Living Well – *Reverence*, *Responsibility*, *Reciprocity*, *Respect*, and *Relationships*. The latter are the alter-*R*s of modernity, development, and

7 Holm et al. (2015), *Humanities for the Environment*; Castree (2021), *Making the Environmental Humanities Consequential in "The Age of Consequences,"* pp. 436–441.

8 Sepie (2017), *More than Stories, More than Myths*.

9 A piece by Ailton Krenak writen in 2020: *O Amanhã Não Está a Venda*. Jornalistas Livres. https://jornalistaslivres.org/ailton-krenak-o-amanha-nao-esta-a-venda/?fbclid=IwAR0MigLY6j2KuwwBzn6CjzJ3_E33wZz57iOSda7lpUffiT2deRwLe1FRlRA

10 Farriss (1987), *Remembering the Future, Anticipating the Past.*

capitalism; they reflect tradition, memory and empathy, connections, and, most of all, interconnectedness.

We could, perhaps, mix all these *R*s and allow us to see the connections and interdependencies of our (human) existence and (all) other existences, which do not sit alone and in silence, but rather in an intricate dialogue and web. We are beyond our everyday home; we are our common home. We are a system of ecocultural interconnectedness, where there is no real division between humans and nonhumans, where empathies should shape these very relationships – the historical ones, the immediate ones, the ones we do not know exist and how to explore. We are all from the same house, we are related, we are kin.

I live with my close family, in my home at the western tip of Europe, in Lisbon, mourning for the pandemic that hits us all, but also mourning for my Westernised way of living – built on binaries and bifurcations, made of definitive choices, and totally out of phase with natural realities. Here, it is the reality of the temperate forests of the Iberian Peninsula, the abundant and vigorous open ocean, the rich, productive, and healthy coastal lagoons and estuaries, and the memories of eternally vanished large mammals that we would no longer recognise.

My own natural multiverse, full of environmental survivors and ecological oblivion.

But by standing still, by stopping because of Covid-19 – living the Great Pause – I forced myself to reflect and to see. I noticed birds have regained their rhythms and that the fearless blackbirds and common jays now occupy streets, balconies, rooftops, where they fly and breed and chirp. That the seeds I throw into square inches of potted soil, bloom after the first few days, the herbs season my food and show me all the dormant possibilities. These are small circles of recovery and hope located in the very brief nanoseconds of this great cycle. When we live one of these small cycles, like the one that has just begun, we make an obligatory return to our origins. The movement of life must be recreated and recovered… Those of history? Those of organised societies? Or those of geology and biology, those of the species? And there is no way of escaping from who we are. Who are we, exactly? Just people, animals, living beings? We always find ourselves facing ourselves as individuals, mirrored in the eyes of those others – women, men, birds, butterflies, fish, any small or large animal, mushrooms and rhizomes, tree branches and leaves, water surfaces, waves, mists of forgotten environments. These are the faces showing us our appearance and that of our landscapes, with its environmental contamination and destruction, over-exploitation of resources, simplification of habitats and natural systems, and very clearly marked ecological, social,

and cultural discontinuities and biases. This is our geography. In this time, which is the age of Humans (not of man) – the Anthropocene[11] – all human practices temporarily or permanently affect the home in which we all live and on which we depend. This is our chronology. It is the time to reaffirm that human beings are not at the centre and, most of the time, are not in control.

We are not *anthropos*-. We are *oikos*-.[12]

We are not living in biomes. We are existing in *anthromes*.[13]

And far beyond this period of humans in which we live, we may follow the words and perspectives of Donna Haraway according to which the Anthropocene is much more like a border than a period. It signals drastic discontinuities, and what will come next is, without a doubt, vastly different from what existed previously. Or follow the concepts of anthropologist Anna Tsing, according to whom we need to pluralise the Anthropocene, and treat it as patchy and heterogenous, with many temporalities and intersections, as entanglements and historical conjunctures that set off new possibilities of being – the tippers of the Anthropocene.[14]

Just like the moment that we are living, across 2020 and well into 2023 and beyond, in which the agency of an "invisible" element of our planet is supra-human, is all-powerful and all-controlling, it is external to the human's species and human forces. For Charles Mann, following the ideas of Alfred Crosby, we might call it Homogenocene – as an "epoch in the history of life, brought into being by the abrupt creation of a world-spanning economic system."[15] For Edward Wilson, is the Eremocene, the Age of Loneliness, basically the age of

11 The awareness of the human far-reaching impact on the environment is one of the reasons why scholars, notably the Nobel laureate Paul Crutzen, have called for the designation of a new epoch in the history of the planet, our epoch, the 'age of humans' or the Anthropocene. It expresses the assumption that recent (well, in my viewpoint, not that recent!) human actions and impacts in the natural world has affected Earth more significantly than major natural events, such as volcanic eruptions, tsunamis and earthquakes. That is, the human species as a geological agent because of acceleration and of a drastic transformation of the human relationship with the (rest of) the natural world.

12 Anthropocentrism and ecocentrism are divergent currents that place, respectively, human beings at the centre of the perspectives for understanding the world or that position nature at the centre of value systems and their understanding. On ecocentrism see the article by Stan Rowe: http://www.ecospherics.net/pages/RoweEcocentrism.html

13 Fuentes & Baynes-Rock (2017), *Anthropogenic Landscapes, Human Action and the Process of Co-Construction with Other Species*.

14 The tipping points when everything changes. *Feral Atlas: The More-Than-Human Anthropocene.* Curated and edited by Anna L. Tsing, Jennifer Deger, Alder Keleman Saxena and Feifei Zhou. http://feralatlas.org/

15 Mann (2012), *1493*, pp. 32–33; Eriksen (2021), *The Loss of Diversity in the Anthropocene Biological and Cultural Dimensions*.

people, when the planet exists by, for, and of ourselves, our domesticated plants and animals, and our croplands all around the world as far as the eye can see.[16] For Donna Haraway, we should even consider the possibility of defining our current era, not as the Anthropocene, nor the Capitalocene, but as the Chthulucene – a period in which the common and joint actions and agencies of all who inhabit the Earth, people included, will allow the co-existence and flourishing of "rich multispecies assemblages." Haraway's Chthulucene "entangles myriad temporalities and spatialities and myriad intra-active entities-in-assemblages – including the more-than-human, other-than-human, inhuman, and human-as-humus."[17] Tsing and colleagues' Feral Atlas invites you to think about and "to explore the ecological worlds created when nonhuman entities become tangled up with human infrastructure projects."[18] For me, as mentioned before, I see it as the *Extocene*, an externalization of our own view over ourselves and the Age of Humans and a decentralization of historical actions and impacts, and of possible future recoveries.

Merchant reminds us that "we are all visitors on earth." Haraway joins Jane Goodall in saying that, with enormous commitment and collaborative work, it is possible to do differently and do better. Mauch asks for a language of positive change, asks for all possible points of view for a better future or, in other words, cries out for hope. Krenak asks for the sharing of the message that a different and comprehensive world is necessary and urgent. Tsing opens our eyes to all the entangled possibilities of existence, past, present, and future.

And I join their voices because I believe that, even if it is not likely, it is still possible to change, recover and rewrite the paths of the future. My job as an environmental historian and scholar of and for the environment is to think critically and try to look for alternatives and possibilities to adapt to this constantly and rapidly changing world. To try to create circularity even where it insists on disappearing, and to bet on the regeneration of world-ecologies and world-cultures.

We live on a round planet, in a circular time, in a non-linear world. Our present touches our past and our future. Time creates its own path as much as water builds its own route. Animals, plants, rivers, oceans, forests, women, men, societies, we are all parts of the same ecocultural system; we are undoubtedly interconnected through time, space, and evolution, through kin and memory. Now is not the time to return to our normality. Now is the

16 Wilson (2016), *Half Earth*, p. 20.

17 Haraway (2015), *Anthropocene, Capitalocene, Plantationcene, Chthulucene*.

18 *Feral Atlas*, *Op. Cit.*.

time to think about togetherness and to take a step back into the future of the Earth.

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Index

Humans and Aquatic Animals in Early Modern America and Africa deals with peoples' practices, perceptions, emotions, and feelings towards aquatic animals, their ecosystems, and nature on the early modern South Atlantic coasts by addressing exploitation, use, fear, empathy, otherness, and indifference in the relationships established with aquatic environments and resources by Indigenous Peoples and Europeans. It focuses on large aquatic fauna, especially manatees (but also sharks, sea turtles, seals, and others) as they were hunted, consumed, venerated, conceptualised, and recorded by different societies across the early colonial Americas and West Africa. Through a cross-cultural approach drawing on concepts and analytical methods from marine environmental history, the blue humanities and animal studies, this book addresses more-than-human systems where ecologies, geographies, cosmogonies, and cultures are an entangled web of interdependencies.

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