Aporias of Mobility:

Amazonian Landscapes between Exploration and Engineering

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ABSTRACT

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This dissertation argues that the journeys of naturalists, explorers, intellectuals, and engineers through the Amazon in the second half of the nineteenth and first decade of the twentieth century gave rise to perspectives that challenge foundational assumptions about technology in modern metropolitan centers. Chief among these assumptions are the ideas that technology contributes to specialization, the disenchantment of reality, the entrapment of the subject in the logistics of urban labor, and the removal of natural obstacles. The examination of the roles of nature and technology in texts and images of the period shows that travel and exploration were represented as experiences of enchantment and encounters with impassable terrains. The dissertation focuses on three interconnected cases to support its thesis: Euclides da Cunha’s reading of the naturalists in his essays on the Amazon; experiences and practices of exploration on the Madeira and Mamoré Rivers; and the construction of a railroad along these rivers to render the hauling of vessels over land and long voyages unnecessary. Developing a cultural-historical framework that counters narratives of technological domination and failure, the dissertation concludes that the tensions between exploration and engineering in these cases reveal the eschatological facets of the history of technology. The eschatological facets show both how technologies contribute to the construction of the farthest frontiers and how technologies themselves arrive at their final stages.
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Introduction

If a popular, contemporary, travel guide on the Amazon featuring routes, experiences, and sites of interest is to be compared with the array of naturalist, travel, and exploration narratives that circulated from the second half of the nineteenth century until the early decades of the twentieth, the reader will be nothing short of astounded by the vast territory covered by travelers who did not even dream of airplanes. If scientists and explorers continue to tread paths and adventurously experience Amazonian environments in ways that are necessarily not accessible to the markets of tourism, the logistical, cultural, physical, and technological challenges to mobility in the nineteenth and early twentieth century are yet to be elaborated into a cultural history of mobility and traveling. With the exception of the British naturalists, most of the explorers and engineers who ventured in the Amazon in the nineteenth century remain unknown in the study of travel writing and visual production. With “Amazon” and “Amazonian” I refer to the waters and lands that form the river basin of the Amazon River and its tributaries, as well as to the various ecosystems that are encompassed by its extension over nine nation-states in South America. The Amazon forest, thus, is a large element in the composition of the Amazon but by no means its only form of biological expression.

One of the many reasons why this dissertation came into being is the idea that in only getting travelers as far as the navigability of rivers allows, modern means of transportation, technologies of mobility, and the infrastructures that accompany them appear under a very unique light in the texts and images of the figures analyzed in the following chapters. By technologies of mobility, I refer to any means or apparatus used for movement, transportation, and the enhancement of mobility across a terrain. Whether they are successful or not, and what technological efficiency meant to travelers in the Amazon, is to be found out in the pages of the
travel narratives examined here. By modern technologies I refer to instruments, skills, and techniques that emerged with mechanical, optic, electric, and thermodynamic sciences from the eighteenth century onward. Technological modernization, on the other hand, describes the co-evolving repercussions of scientific, social, cultural, and technological developments, such as increasing specialization, differentiation between the scientific disciplines, separation between previously intertwined spheres, and the disenchantment of reality. This is the contour of the social diagnosis proposed by Max Weber and extended into a theoretical and critical framework on modernity by Jürgen Habermas, Theodor Adorno, and Max Horkheimer, three paradigmatic members of the Frankfurt School. My intention in reading a largely Western body of travel accounts and visual production on the Amazon focused on relations between technology, nature, landscape, and the internal rhetorical and aesthetic mechanisms of these primary sources is to show that the experience of Amazonian environments gives rise to representations that challenge the largely metropolitan, urban, and industrial framework used to historically and culturally account for modernity.

Weber’s theory that nature is increasingly disenchanted and secularized with the intensification of scientific and technological activities in society is profoundly influential. It informs the work done by the Frankfurt School, and by cultural critics that inherited and reworked this framework of analysis to approach the industrialization and modernization of Latin American nation-states as well as literary and artistic production in this era. The narrative of disenchantment, which includes the notion that technology masters and dominates nature, has not left the conception of the transformations the Amazon undergoes unchanged. This dissertation’s reading of works of travelers, explorers, and engineers who went to the Amazon between the mid-nineteenth century and the first decades of the twentieth focuses on internal and intertextual
elements that suggest another narrative. Crucial to my analysis is the understanding I share with sociologist of religion Bronislaw Szerszynski, who argues that, “Both those who see modern rationality and technology as liberating forces, and those who see them as a source of profound alienation, generally accept that nature has become disenchanted, and that the rise of modern technology has been centrally implicated in that disenchantment, as principal beneficiary” (6-7). In *Nature, Technology, and the Sacred* Szerszynski develops a theoretical framework where he demonstrates that “[c]ontemporary ideas and practices concerning nature and technology remain closely bound up with religious ways of thinking and acting” (7). The pervasive and often unacknowledged presence of ‘religious’ thinking and acting in contemporary practices can be seen in the abstract and spiritualized language of digital and virtual technologies, the proliferation of New Age and ‘holistic’ approaches to healing and mindfulness, the ecological conscience of Earth as a whole, and even in the profoundly disavowed belief that technology can be redemptive. My intention is to detect where the binding of non-scientific ways of thinking and acting lies in the travel narratives, accounts, and images investigated here.

One avenue I pursue to accomplish this task is looking at the extent to which ideas and responses to Amazonian nature and landscapes shaped by science and technology actually incited non-scientific and at times mystifying reactions. Considering that disenchantment is not the only component of Weber’s influential diagnosis, I also pursue an analysis that hones the ways in which technology and the domain of technique are challenged by Amazonian nature and landscapes, rather than being solely instruments of mastery. At the margins of trivial remarks on steamships, local and indigenous paddlers, canoes, mules, and dreamed-of railroads lies, it is argued here, a different framework to think and tell the history of modern technologies of mobility and the process of technological modernization at large.
The nineteenth century English naturalist Alfred Russel Wallace, for instance, makes a curious statement about aerial travel when walking the roads of the Nazaré neighborhood only two months after his arrival in Belém. The picture Wallace draws is an intricate one. Besides a tree growing by the side of the road, “three or four young Clusia trees” are on a Mucujá palm, and the Clusias “no doubt have, or will have” orchids and ferns “growing upon them” (36). He continues:

But all is out of reach of the curious and admiring naturalist. It is only over the outside of the great dome of verdure exposed to the vertical rays of the sun, that flowers are produced, and on many of these trees there is not a single blossom to be found at a less height than a hundred feet. The whole glory of these forests could only be seen by sailing gently in a balloon over the undulating flowery surface above: such a treat is perhaps reserved for the traveller of a future age. (36)

Detecting, collecting, and studying plant specimens was the business of the young naturalist, to whom trees and flowers were not just objects of scientific interest but also means of visually organizing and orienting in the environment. Noticing that most flowers were only visible from outside the canopy, Wallace explicitly invokes an imagined perspective of the Amazon that is attainable by means of a balloon. The passage ends on a thought about the future that casts an aerial technology of mobility as a solution to the limitation of the naturalist’s scope of observation to the ground perspective. Passages like this occupy the axis of analysis of this dissertation. While observations about steamships or canoes, rather than balloons, are much more frequent in the travel accounts and texts investigated here, such instances distinctly show the perception of the necessity for an absent technology of mobility for the expansion of the scope of observation and movement. They tell us the occasions a traveler experienced technological precariousness, what
experience the traveler desired, and what technology or infrastructure he projected as the fulfillment of this lack.

On May 26 1848 Wallace and Henry Walter Bates arrived in Belém do Pará. Richard Spruce, arrived in July 1849. Wallace was to spend three years in the Amazon, Bates eleven, and Spruce fifteen. The English naturalists, who were travelers as much as they were nomadic residents, trod terrains in different areas of the Amazon. Spruce, for instance, went beyond Amazonian environs, reaching Quito, while Bates and Wallace split ways few months after their arrival. Bates and Spruce saw the introduction of steamers in 1853. At the time, Barra was the main port from where steamers departed to Pará (Belém), the Solimões River, and Peru. They both enjoyed the shortened duration of journeys onboard steamers and commented on some of its comforts. “Imagine the cabin passengers of the Monarca stretched in their hammocks under an awning in the poop eagerly listening to one of their number reading from an old black-letter copy of the fabulous history of ‘Carlos Magno’,” writes Spruce in a letter to George Bentham (28). In another instance, Spruce will speak of his frustrations for having to resort to canoes due to the poor condition of two steamers intended to navigate the Huallaga and Ucayali Rivers (30). Resorting to canoes when steamers failed or could not navigate in certain parts of the vast and intricate Amazonian fluvial system was far from uncommon. Today, canoes and motorboats are still pervasive means of mobility and transportation in the Amazon. The experience and representation of the discontinuities of this hybrid mobility grid, which included not just vessels but manpowered transportation, provide insight into how the domain of modern technology and technique is culturally and materially transformed in Amazonian environments.

Naturalists transformed the empirical matter and input of Amazonian nature into information and data that fit scientific categories in their hybrid texts, composed of narratives,
descriptions, impressions, and classifications. To afford the expenses of travel and make their work lucrative, the naturalists sold items in their collections in England. As the first chapter demonstrates, they expressed impressions of traveling in the Amazon that were almost archetypal, considering that many other travelers and writers described similar experiences. Their narratives are therefore crucial because they functioned as references and guides in a time when more popular publications specialized in traveling in the Amazon were still decades away from emerging. While the work of Alexander von Humboldt, who was declined entrance\(^1\) in the Brazilian Amazon earlier in the nineteenth century, was an undeniable reference to the English naturalists; they were each to travel unique routes and leave their own marks on how the Amazon was perceived and imagined after the second half of the nineteenth century. Humboldt doubtlessly remained an authority, but the Victorian naturalists substantially contributed to the production of scientific knowledge and the formation of an imaginary of perceptions and visions of what the Amazon was to remote audiences.

A 1904 publication by the Amazon Steam Navigation Company, a British firm established to transport rubber and passengers, titled *The Great River: Notes on the Amazon and Its Tributaries and the Steamer Services* acknowledges in its Prefatory Note that, “Very few English books have been printed about the Amazon, and even the classic works of Wallace and Bates, which treat of the natural history and other general features of Amazonia, do not contain the information needed by travellers of to-day” (7). Although the Amazon Steam Navigation Company’s publication acknowledges the authoritative status of the naturalists in regard to knowledge of the flora and fauna, the publication seeks to create a demand for different visitors and fulfill the needs of an

\(^1\) The zoologist Johann Baptist von Spix and the botanist Carl von Martius were the first scientists allowed to travel in the Brazilian Amazon during the Imperial years.
altogether different kind of traveler. In spite of the Prefatory Note’s detection of an insufficiency, Wallace and Bates’ narratives were consistently read and referenced by early twentieth century travelers and intellectuals, such as Brazilian engineer, official, and journalist Euclides da Cunha and the British journalist and travel writer Henry Major Tomlinson, whose works are investigated in the first and third chapter consecutively.

The Amazon Steam Navigation Company’s publication is itself one of the first to fulfill the need for a travel guide. It contained descriptions of all the routes of the Company, its steamships, schedules, photographs, maps, descriptions of the villages and towns, and recommendations for travelers. At the same time, the Amazon Steam Navigation Company’s authors were aware of the novelty of the Amazon as a ‘touristic’ site:

It would be going too far to say that European and American tourists are as yet taking up the Amazon country as a new field of travel, but the number of those interesting themselves in it, hitherto confined to traders, merchants, and explorers, is undoubtedly on the increase, and it is hoped that the information herein given will prove of practical utility and advantage (11).

This is one of the earliest conceptions of Amazonian environments as spaces with potential for tourism. More importantly, in saying the “Amazon country” had mostly attracted traders, merchants, and explorers, the Steam Navigation Company’s publication suggests its itineraries and steamers would be opening a new realm of experiential possibilities of travel through the Amazon.
Fig. 1. “Amazonia as a Field of Travel”. The Great River: Notes on the Amazon and Its Tributaries and the Steamer Services; London, 1904, p. 75.

“Even the most casual visitor to these wonderful regions cannot, however, fail to be impressed and delighted with the exuberant prodigality of the feast which Nature has provided for the enjoyment, as well as for the profit of mankind,” says the text on Figure 1. Considering the logistical difficulties and strenuous physical work that traveling through the Amazon requires, one cannot but wonder who, in the early twentieth century, would fall in the category of a “casual visitor”? Would it be someone who traveled without official, commercial, or scientific interests?
Neil L. Whitehead refers to travel authors such as Evelyn Waugh, Colin Henfrey, Nicholas Guppy, and Peter Matthiessen, who he claims “[s]hare the experience of extensive and persistent travel, for travel has become an end in itself, a context for re-creation, if not recreation, even though the idle and playful aspect of recreation is part of the way such experiences are written” (135). However, authors to whom travel in the Amazon was an end in itself were only to write much later than the authors encompassed here. Mário de Andrade’s *O Turista Aprendiz*, composed of diary pieces written on the occasion of a trip to the Amazon in 1927 and to the Brazilian Northeast between 1928 and 1929, playfully invokes tourism but ultimately has literary and ethnographic ambitions that surpass the casual approach of a “turista”. Most of the works analyzed here remain profoundly bound up with nineteenth century instrumental attitudes toward travel.

With few exceptions, the travel accounts and texts encompassed in this dissertation explicitly fulfill scientific and commercial demands for information about the flora, fauna, routes, landscapes, geological formations, and native life in the Amazon. Even texts not written by naturalists were largely shaped by the conventions of the genre. However, as soon as we move away from the field of publication delineated by the travel accounts of the naturalists we enter a less homogenous field where audiences become much narrower and can often only be traced locally. Chapter two delves into the works of explorers that illustrate this difficulty. The reception of the publications of the Madeira and Mamoré Rivers explorers can be traced within the body of work published in that region. Explorers described and offered commentary on previous expeditions. This is also to say that, unless we are looking at prominent explorers, geographers, and naturalists, we are dealing with a rather marginalized archive. Despite the persistence of conventions of naturalist and exploration travel accounts, many the texts analyzed here do not provide a consistent concept of what traveling was, and much less of who a casual traveler in the Amazon
would be.

The inexistence of a homogenous body of visual and written materials that evidences the genesis of a casual traveler in Amazonian routes makes room for a few conjectures. The Amazon Steam Navigation Company’s advertisement of routes to potential casual visitors or precocious tourists likely did more to insert the routes in an expanding industry of mobility, transportation, and trade, than attract actual “casual visitors”. The language of casual visitation, leisure, and possibilities beyond trade and science is used to express an *undefined* surplus that is yet to be discovered and experienced. The Amazon Steam Navigation Company’s advertisement and informative publication did not necessarily have tourists as an audience but would be trying to reach beyond the travelers and passengers that commonly traveled to the Amazon in the second half of the nineteenth century and early twentieth century, such as naturalists, scientists, traders, explorers, and government officials. Among the images and pages authored by these steamship passengers are to be found instances where travelers appear to be at ease or relaxing in face of a landscape they are otherwise at pains to depict as exuberant and wild, if not downright hostile. As discussed in the second chapter, the description and visual representation of a relaxed and leisurely attitude in Amazonian landscapes shows the success of the explorer in facing natural and technical obstacles in the journey. Besides the display of the conquest of nature, these images and texts describe a process of the conquest of time. Representations of pause and rest, or instances where travelers are depicted at ease in difficult terrains, say a lot about how notions of temporal and technical efficiency were negotiated in different expeditions.

One need not turn to this Amazon Steam Navigation Company’s publication to find instances of the differentiation of experiences and modalities of mobility adopted by various nineteenth and early twentieth centuries figures. In his *Apuntes del Viaje del R. P. Fr. Gabriel Sala*
Exploración de los Rios Pichis, Pachitea y Alto Ucayali y de la Región del Gran Pajonal (1897), Padre Sala describes boarding infamous rubber baron and explorer Carlos Fermín Fitzcarrald’s steamship Bermúdez. Between breakfast and cocktails in Fitzcarrald’s luxurious and well-equipped steamship, Padre Sala writes that, “Estaba todo tan limpio, elegante y arreglado que no tuvimos que envidiar nada á los mejores vapores europeos” (63). Navigating the Amazon onboard such a well-equipped steamship was an extraordinary travel experience for a Franciscan priest on an official mission, but not uncommon amidst the wealthiest rubber traders. Sent by the Peruvian government in an expedition to explore the Gran Pajonal region, Padre Sala’s account is an example of the intersection of routes, experiences, and of the diverse figures that populated and moved across Amazonian environments in the nineteenth and early twentieth centuries.

Sala’s remark that the Bermúdez “leaves no space for envy of European steamers” evidences the unevenness of the cultures of navigation and travel in the Amazon at the turn of the twentieth century. Even though ‘European’ figures as a standard of consumption and quality, ships and means of mobility uprooted lifestyles and comforts, placing them on a sphere that is not necessarily attached to a region or modern nation-states. It is the very permeation and transformation of steamers, apparatuses, techniques, and desired objects of consumption in Amazonian environments that make possible a cultural-historical narrative stemming from the other side of technological modernization, rather than its metropolitan ‘core’. Yet, the following chapters do not provide an account of modernity in the Amazon, as we see in the work of literary historian of the Madeira-Mamoré railroad Francisco Foot-Hardman. If anything, the readings of the texts and images centered on the domain of technique and technologies of mobility theorizes a modernity of the Amazon. Rather than read the visual and textual materials as evidence of a history of modern technological mastery of the Amazon, I shed light on a less emphasized facet of the history of
technology in travel, exploration, and engineering, and the culture of mobility they gave rise to. Complementing Francisco Foot Hardman’s critical history of the Madeira-Mamoré railroad, which does not delve into the sources written prior to its construction, I demonstrate that they also tell the story of how technologies and their human agents came to be subjected to the trials of nature. I engage with travel, exploration, and engineering as interrelated processes because the accounts and narratives of travelers not only contained projections of future technologies in the Amazon, as we saw in Wallace’s imagined balloon, but also because they were used as evidence for the need of engineered technological interventions.

Albert Perl, a German trader and captain who spent about twelve years in the Amazon and travelled onboard the Amazon Steam Navigation Company’s Tapajós steamer offers a piece of advice for those considering a route on one of the Company’s steamers. Less of an explorer who attempts to gain autonomy from infrastructures, and more of a traveling businessman who thoroughly avails himself of established routes and local vessels while looking for lucrative enterprises, Perl is sensitive to the comforts, conditions of hygiene, and modes of sociability he encounters during his travels. Shortly after describing his boarding on the “Tapajoz” steamer he advises travelers to bring their own personal hygiene items and not touch the toilets, even in luxuriously furnished Brazilian steamers, the German narrator illustrates the development of a demand for infrastructures of sanitation and amenities in the Amazon (114). A portrait in the opening of the narrative shows Perl comfortably sitting and reading the newspaper in an elegantly decorated cabin in the steamer Alberto, which he acquired in a business partnership in 1898 (180). The picture insinuates a journey where its itinerary, distances, and technological affordances not only allow the traveler to be in touch with metropolitan events, but also to travel as though he had never left behind the comforts of cities such as London or Hamburg.
These spurious instances where travelers were able to experience luxury and comfort away from larger towns or infrastructures functioned as settings for the performance of a mode of traveling that was indeed far from consistent and seamless in the Amazon. They created a background against which travelers could pose precisely as the kind of figure to which Amazonian environments offered so much resistance. To Perl, however, traveling and trade were far too intertwined for his extensive journey and its narrative to be mere feats of an adventurous man in exotic lands. Indeed, like most travelers that went to the Amazon, he used his experiences to build a reputation in Germany as an expert on Amazonian geography, fluvial routes, socio-cultural dynamics, and commerce. That most travelers had ties and investments back in their countries of origin, traveled to fulfill a purpose, and deployed their journeys to attain specific kinds of recognition evidences the instrumentalization of experience and knowledge of an expanding transatlantic and global mobility grid. What interests me, however, is less the instrumentalization or transformation of the traveler and explorer’s experiences into consumer products (in the form of travel accounts and publications), and more how what travelers and explorers consistently communicate in their images and texts is often what is not consumable about the sites they traveled and explored. The textual instances and images investigated in the following chapters expresses the very challenge to the transformation of Amazonia into a thoroughly productive and modernized environment.

Much of this challenge is due to what I refer to as aporias, difficulties of passage either constructed or given. The Greek word aporia (ἀπορία) has been predominantly theorized through a rhetorical and logical perspective. In what are recognized as early Platonic dialogues², for

² These include dialogues such as Laches, Euthyphro, Meno, and Charmides.
instance, the word is traditionally understood to mean the “[p]uzzlement characteristic of the failure of a particular search,” as Vasilis Politis tells us (6). In this traditional meaning, a dialogue reaches or ends in *aporia* because of Socrates and his interlocutors’ incapacity to answer a particular problem, which is often posed as a double-sided question with good reasons on both sides (1). Examining *Charmides*, Politis argues that this is an aporetic dialogue, however, not because the *aporia* marks the end of a failed search but rather because it marks its very beginning (31). While I will draw on other meanings and usages of the word in classical antiquity in the second chapter, the rhetorical and logical function of aporias already lead us onto a particular line of inquiry on the ways in which Amazonian landscapes are experienced and represented as leading to failed searches (think El Dorado) or starting with seemingly insurmountable physical difficulties. If anything, in depicting and describing situations where the means of mobility and subjects of expeditions and projects are confronted with aporetic challenges, which incite equally aporetic perceptions and representations of the landscape, authors and narrators offer their audiences a representation of the limits imposed by Amazonian environments to the process of technological modernization and consumption.

In Adriana Craciun’s model of the explorer as both a commercial and discursive function distinctively born in the nineteenth century, though genealogically (and at times erroneously) traced to the eighteenth and the Enlightenment, a traveler such as Perl would be the embodiment of an archetypal explorer. In “What is an Explorer?” Craciun writes that it is not the:

> [a]uthorization of state or commercial institutions that seemed to propel would-be Explorers into the unknown, but rather the power of commercial authorship, visual spectacle, and costumed public performance, which drew a heterogeneous group of voyagers toward the profitable display of autonomy, discovery, and identity. (45)
Perl not only begins his narrative by saying he decided to go on the voyage to South America on his own, but he also struggles to portray himself as thoroughly versed and skilled in fluvial navigation and commerce on the Amazon. Craciun’s interest in the “[m]odes of existence” of the explorer’s discourse, and the formation of the identity of the explorer back in metropolitan centers, which, albeit unstable, is entangled in complex networks of publication and collective agencies, yields a model of the explorer and calls for a method of analysis that are diametrical, and therefore complementary, to mine (32). The modeling of the explorer as a product of discourse, publication networks, the developing travel industry, and the process of institutionalization of exploration in the nineteenth century Anglophone sphere – seen in emergence of the Raleigh Club (1827), the Royal Geographical Society (1830), the Hakluyt Society (1846), the American Geographical Society (1851), and the Explorer’s Club (1904) – is crucial to understand the functioning of the explorer in metropolitan socio-cultural domains. It is precisely because this model tells us a lot about the nineteenth century explorer in metropolitan centers that it undermines the formation of the explorer by his efforts to represent the landscapes he traversed and account for how he availed himself of different means of mobility. If Craciun answers the question of what an explorer is by looking at the mechanisms of control (institutional, commercial, and epistemic) that allow authors to acquire the status of explorers, I answer the question of who traveling-authors become in relation to the models of travel and exploration they adopt or appeal to, and create in their texts and images. My approach is thus more hermeneutically reconstructive than critical.

This dissertation has two interconnected lines of analysis. The first examines how authors described the various domains of technique, means of transportation, and apparatuses that are part of the sphere of technology in the second half of the nineteenth and early twentieth century. The examination of how technologies and the domain of technique rhetorically and aesthetically
operate in their texts and images allows me to elaborate a framework to conceive the cultural-historical function of modern technology and the domain of technique from the frontier to the metropolis. In approaching the primary sources as surfaces between an Amazon that authors were genuinely struggling to describe, and the cultural formation of scientific, exploratory, and engineering practices, I show the transformations undergone by the domains of technique and technology in textual and visual representations. How did authors represent the real or imaginary presence of technologies and the domain of technique in the Amazon? What is happening to technologies, infrastructures, and techniques in these representations? What are the aesthetic, rhetorical, and discursive functions that they play in texts and images? How did they contribute to shaping modes of traveling to and in the Amazon?

While the first line of inquiry focuses on authors’ attitudes and ideas about technology, infrastructure, and the domain of technique, the second line of analysis examines their attitudes and perceptions in relation to nature and landscapes in their travels in the Amazon. My reading analyzes how the cultural and empirical constitution of naturalists, travelers, explorers, and engineers informs their conceptions of what a landscape is and what values are attributed to nature. The concept of landscape is itself a highly cultural one insofar as an unfiltered and unmediated observation of nature is inconceivable. As Malcom Andrews proposes in *Landscape and Western Art* (1999), “A landscape, then, is what the viewer has selected from the land, edited, and modified in accordance with certain conventional ideas about what constitutes a ‘good view’” (4). A ‘good view’ is precisely what is under question here. As observers, textual, and visual translators, these figures faced considerable physical challenges to the attainment of a perspective, or a good and pleasing view, and for this very reason the production of Amazonian landscapes functions according to a dynamics specific to its natural and geophysical characteristics. Notwithstanding
the recognition of the mediated character of landscapes as cultural products, I by no means agree
with the notion that there is no such thing as a reality and nature independent of representation. I
share the ecocritical acknowledgement of the connection between human culture and the physical
world” (Glotfelty xix). Therefore, if landscapes are cultural products, they are products of a
selection process that is itself a genuine interaction with an outside, with reality, and nature.
Scholars of literature, history, geography, and culture of the Amazon from the colonial period until
the present have consistently acknowledged and dismantled the construction of competing, and
often dichotomous, imaginaries of Amazonian nature and its landscapes. They have traced the
mythological and native genealogies of warrior women and cities of gold in the colonial imaginary
of “El Dorado” (Alès and Pouyllau 1992; Slater 2002).

Steam navigation, the opening of the Brazilian Amazon to foreign ships, the rise of the
rubber trade, industrialization, modernization of agricultural techniques, and the development of
scientific disciplines largely contributed to the intertwinment of scientific and economic attitudes
toward Amazonian nature. New imaginary and metaphorical conceptions of Amazonian
landscapes and nature emerged. A recurrent dichotomy in naturalist literature and exploration
narratives is that of abundance and productivity, and scarcity of means of subsistence and lack of
cultivation. An encounter with a Canadian man involved with timber trade back in his home
country leads Alfred Russel Wallace to reflect on the underdevelopment of timber extraction in
the Amazon. “The banks of all these streams are clothed with virgin forests, containing timber-
tress in inexhaustible quantities, and of such countless varieties that there seems no purpose for
which wood is required, but one of a fitting quality may be found” (45). Purpose, or the directed
use of otherwise productive and abundant natural resources, is what is missing. The Victorian
naturalists and many others, such as the German explorer-engineer Franz Keller or later Brazil’s
own Euclides da Cunha, will attribute the economic underdevelopment of the Amazon both to traits of the Portuguese, mestiço, or native ‘character,’ and to the Brazilian government’s ineffective presence in the northernmost region of the nation. “For centuries the woodman’s axe has been the pioneer of civilization in the gloomy forests of Canada, while the treasures of this great and fertile land are still unknown,” Wallace continues (46). Publications such as the Amazon Steam Navigation Company’s, which circulated in commercial circles of Manaus, Belém, and Britain, also invoke the “[e]xuberant prodigality of the feast which Nature has provided for the enjoyment, as well as for the profit of mankind,” as advertised in the image above (75).

No matter how scholars genealogically trace the emergence of instrumentalist and productive attitudes toward nature, often with hopes of abolishing the term altogether, the concept of nature still remains an indispensable tool and object of analysis. Nature proves to be an even more slippery concept to handle than landscape because it cannot be said to be a cultural, aesthetic, or epistemological product in the same manner. Risking an overtly simplistic definition, my use of the word nature is derived from a theistic view of nature as a system of interconnected and interdependent creatures, living and otherwise. Creatures in natural systems have singular identities and relations that are not completely graspable in interactions between humans and other creatures, not exhaustively explained through scientific methods, neither fully observable through technical instruments. Nature, I believe, always has a surplus of ineffability and complexity in face of the potentials of human reason and technology as modernity’s proclaimed agents of scientific knowledge.

Notwithstanding the centrality of instrumentalist, scientific, and economic attitudes to the formation of concepts of nature and landscape in the nineteenth and early twentieth centuries, my analysis turns to a much less conceptualized component of travel and expeditions in the period.
Rather than offer a background that elucidates the ideological, cultural, or institutional sources of dichotomous notions of abundance and lack of cultivation, I examine the notions surrounding landscape and nature that emerged out of the textual and visual representations of the physical labor of travelers and explorers. Far from being completely navigable and even walkable, Amazonian waters and lands required the creation of technical strategies and considerable physical efforts from travelers, explorers, engineers, traders, and other figures. In fact, the history of the modern Amazon makes it quite evident, I argue, that accessibility, mobility, and transportability are much more basic conditions for social and economic development than the sheer offer of natural resources. Without access and ease of movement, goods and commodities simply cannot be exported and commercialized. What happens to nature and landscapes, then, when we focus on the representation of modes of physical labor, mobility, and transportation? What do texts and images tell us about the relationships between the domains of technique and technology, and the perceptions of historical development that emerge in face of the encounter with Amazonian milieus?

My examination of these two lines of inquiry, the representations of technology/technique and of landscapes/nature, focuses on three interconnected cases that illustrate pivotal phenomena and events in the cultural history of travel and mobility in the Amazon. The first is Euclides da Cunha’s intellectual relationship with the naturalists in his writings; the second involves experiences and practices of exploration in the Madeira and Mamoré Rivers; and the third the construction of a railroad along these rivers to render strenuous portages unnecessary. This dissertation focuses on these three cases because each allows us to approach the problems of technology and nature in the cultural history of mobility in the Amazon through a unique angle. With the term mobility I refer to manpowered, mechanical, and motorized modes of movement.
and transportation of travel and exploration, and to technologies of transportation that require engineered infrastructures. Da Cunha’s reflections on the scientific literature and the infrastructural state of the Amazon lead us to accounts written by explorers—many of whom are engineers—because their writings speak of nature not just as something to be known, but as something to be transformed. An engineer himself, da Cunha both longed for the experience of an explorer and envisioned engineering as the condition for Brazil to become a truly productive nation-state. The exploration narratives preceding the Madeira-Mamoré railroad need to be investigated because they are the sources used to justify the construction. Further, they play a unique role in the cultural history of mobility in the Amazon precisely because the railroad did come into existence. This is to say that the environments of the Madeira and Mamoré Rivers are themselves illustrative landmarks of the problems posed to travelers and explorers in the Amazon in the nineteenth and early twentieth centuries.

In December 1904, Brazilian engineer Euclides da Cunha embarks with the Comissão Mista Brasileiro-Peruana de Reconhecimento to Alto Purus on an official journey to survey the lands of the Alto Purus region and demarcate the borders between Brazil and Peru. The author of *Os sertões* (1902), a landmark in modern Brazilian narrative, was already an avid reader of scientific and naturalist publications. His journey to the Amazon creates the occasion for the author to read the works of major naturalists and scientists that had been studying Amazonian fauna, flora, and geology from the nineteenth century onwards. Da Cunha sees this literature as valuable, yet disconnected. By engaging how he reads the naturalist and scientific literature we are able to approach other modes of travel and genres of writing on the Amazon with specific interests in mind. The idea is not to explore the thematic axes of technology/technique and nature/landscape through a chronologically ordered body of literature as to see the progression of the treatment and
conceptualization of these axes. Rather, my examination of da Cunha’s diagnosis of a disconnected literature leads me to raise the question of what other modes of traveling, and genres of writing and visual representation tell us about technology and nature. My cultural-historical narrative of how relations between nature and technology shape mobility in travel accounts and images thus starts in the early twentieth century, takes a step back to the mid-nineteenth, and makes its way forward to the 1910s and the completion of the Madeira-Mamoré railroad.

A comprehensive interpretation of da Cunha’s writings on the Amazon demands that we turn not only to the naturalists, but also to the explorers and engineers that traveled through the Madeira and Mamoré Rivers and its milieus. In July 1906, da Cunha accepted an offer to be the official surveyor of the Madeira-Mamoré railroad, a position he deeply longed for but ultimately declined to avoid antagonizing his father (Correspondência 310-313). He wished to participate in the Madeira-Mamoré construction project and extensively wrote about infrastructural projects. He even envisioned another Amazonian railway project, the “Transacreana,” which would eventually communicate with the Madeira-Mamoré (Um Paraíso 107-108). Being in the rugged and remote environs of the Amazon had not only been a long wish of the engineer-intellectual aspiring to be an explorer, but was also necessary for him to write the unfinished “Um Paraíso Perdido,” his most important intellectual project after Os sertões. To the functions of journalist, observer, and narrator da Cunha was to add the model of explorers to write about the Amazon.

Da Cunha’s readings of the naturalists allows us to approach the cultural history of mobility by posing an important question: what are the limits of the naturalist-scientific knowledge of nature? Da Cunha’s detection of the shortcomings of the territorial coverage of the naturalists’ journeys, of the modern scientific episteme and literature requires we turn to the works of explorers because their task is precisely to cover challenging and extensive territories, and expand
the scope of practical knowledge over remote regions. Naturalist and scientific approaches to nature and landscape are complementary to the practice and technique oriented work of explorers. Considering that naturalists, scientists, and explorers are authorial, epistemic, and technical figures whose practices and cultural roles were in the process of becoming increasingly distinct, there were many overlaps between the genres and modes of travel of both. It can be said that Bates, Wallace, and Spruce appeal to models of exploration to express the thrill of a journey through Amazonian lands, while engineers and explorers such as the American Colonel George Earl Church and German Franz Keller use geographic science and empirical methods as a means to conceive the practical viability of construction projects. Strict separations between theory and practice, pure and applied sciences, are not viable to grasp the interwoven evolution of exploration and natural sciences in environments that were distant from metropolitan and intellectual centers.

The first chapter, “Between Improvised Guides and Technical Enchantment: the Paradigmatic Travels of the Naturalists and Euclides da Cunha’s Amazon,” argues that da Cunha’s reading of the naturalist and scientific literature on the Amazon incites a desire for a synthesis between the arts and sciences that allows for a comprehensive understanding of the Amazon. It focuses on da Cunha’s reading of botanist Jacques Huber, and British naturalists Henry Walter Bates and Alfred Russel Wallace. Da Cunha’s critical insights into the limits of the naturalist and scientific project, however, create room for the experience and conception of science and the domain of technology as having enchanting and mystifying effects. Secondly, da Cunha’s view that the naturalists did not see much of the Amazonian territory, albeit questionable, shows the Brazilian engineer and intellectual’s affective investments and romanticizing imagination about explorers. The intellectual and personal aspects of da Cunha’s reading of the naturalists and writings on the Amazon invoke a conception of science’s potential to know nature that questions
the predominant narrative of progressive disenchantment through intensified technological and scientific modernization. Finally, the affective role of exploration in da Cunha’s imaginary raises the question of the extent to which the practices, techniques, and representations of nature and landscape in exploration narratives participate or not in the logical and historical framework promoted by the thesis of disenchantment of modernization.

The second chapter, “The Conquest of the Impassable: Aporias of Mobility in Representations of Portage and Exploration” turns to the narratives, accounts, and images of explorers, engineers, and U.S. Navy officials that traversed the environments of the Madeira and Mamoré Rivers between Brazil and Bolivia, a region that became the site of construction of the now extinct Madeira-Mamoré railroad, and other sites. The Beni and Mamoré Rivers unite and form the Madeira River, at the margins of which lies Porto Velho, the capital of the Brazilian state of Rondônia. Between Guajará-Mirim at the Mamoré River and the larger Porto Velho are nineteen –some sources say twenty– rapids and falls that make continuous navigation by larger vessels difficult. Nineteenth century Bolivian and Brazilian rubber traders faced months of travel in this portion of the Madeira and Mamoré Rivers before they transported goods safely to more navigable rivers and tributaries that led to the Atlantic ocean and international markets. I engage the aesthetic and rhetorical role of technologies and the domain of technique, and the representations of nature and the landscape of visual and textual production describing the Madeira-Mamoré region prior to the construction of the railroad. My intention is to unravel the logic of the constitution of what I call an aporetic landscape, which both supports arguments for the construction of a railroad to overcome fluvial obstacles, and generates a dynamic relationship between technology and nature. I focus on the cultural valuation of the practice of portage, the transportation of vessels over land to bypass unnavigable waters, both because this was a
predominant practice in the Madeira and Mamoré Rivers, and in many other rivers throughout the Amazon, but also because this technical practice comes to acquire great symbolic and literary value in the cultural-historical narrative of mobility, travel, and exploration in the Amazon. Carrying a ship over land is an action that juxtaposes water and land, and manifests the impetus to overcome physical limitations. Considering the importance of this practice for travel and exploration in the Amazon, I also engage representations of portage from expeditions beyond the Madeira and Mamoré Rivers, as well as representations of passages over different types of aporetic landscapes.

The authors analyzed in this chapter all make statements about the state of travel and exploration in the Amazon that allow us to address the question of how exploration intervenes in the logical and spatiotemporal framework that enables the history of technological modernization to be conceived linearly as one of mastery of nature. I argue that because experiences and representations of aporetic landscapes yield a logic that shows both the limitations of modern technology, and the successes of techniques and practices understood to be primitive and burdensome, that is, exploratory, exploration cannot be historically narrated as a stage prior to engineered infrastructural developments. Throughout this dissertation, I engage the perspectives of North American, European, and the Latin American elite because they were precisely the figures who sought to expand technological modernization, and witness what lies beyond it in expeditions of exploration. My hermeneutic reconstruction of the works of the authors investigated here thus aims at an understanding of technological modernization internal to the Western cultural history of mobility in the Amazon. My intention is not to exclude the import of indigenous and native technical knowledge and practices in the cultural history of mobility in the Amazon. Rather, I demonstrate that at the frontiers, away from its centers, the development of technological
modernization can be narrated as a story of transformation and becoming of technology into something other, as a loosening of the urban-industrial acculturation that shapes instruments, ships, and their users in centers of dense infrastructural and technological concentration.

The third and fourth chapters offer two paths to answer the question of how the cultural-historical narrative of technological modernization can be reframed from the perspective of exploration practices and narratives. In “Technology is Society Made Durable” Bruno Latour notes that, “The main difficulty of integrating technology into social theory is the lack of a narrative resource” (111). A narrative resource would allow us to weave descriptions of human society, and I would add culture, with descriptions of mechanisms and technology (111). The way in which this difficulty is evidenced in this dissertation has to do with how narrative accounts of exploration – supposedly scientific, documental or informative texts– describe technologies that populate the Amazon with social structures that are often absent or are imagined. Cultural critique’s name for this link is ideology. In the cultural historical framework I provide here, the link emerges from the very practices of travel, exploration, and engineering. Latour’s solution, which he continues to develop throughout his project, is that we “[a]bandon the divide between material infrastructure on the one hand and social superstructure on the other” (129). While I am sympathetic to the difficulty, I diverge from Latour’s solution. Latour’s intention is to emphasize the hybridity and ontological impurity of the ‘things’ we call objects of technology and society, nature and culture; as well as the complexity of relations between these hybrid objects in networks. Relations between social and technological, natural and cultural entities surely become increasingly entangled with the development of industrial and digital societies, and I am empathetic to the development of a narrative that hones these entanglements, as seen in his groundbreaking We Have Never Been Modern. If Latour disputes the modern separation between cultural and natural entities (and the
bracketing of God), a separation that actually proliferates hybrid objects, this dissertation departs from a clear distinction between divine creation and human artifice. In some ways, supporters of Latour’s diagnosis of modernity may find my approach modern because I maintain the distinction between natural creation and human artifice. I diverge from Latour’s ‘cosmopolitically nonmodern’ approach in that I contend that the discussion of hybrids of nature and culture is not possible because modernity itself has produced these hybrids (we will see that da Cunha’s writings well illustrate this problem), but because of what he attributes to ‘premoderns’\(^3\). However, I believe there is considerable room for theological, philosophical, social and cultural inquiry into phenomena where the intersections between the divine and the domains of human experience, such as divine inspiration, religious ethics, or the role of technology and science in sacred conceptions of history, to which this dissertation seeks to open a few doors. If sociologists of science and technology may find it hard to develop narrative resources to link technology to social theory, literary and cultural scholars with historical and theological aspirations such as me will find in this task a productive trigger to gauge the relations between exploration, engineering, and cultural historical narrative.

Geographical exploration narratives and engineering plans can be dry to read, and narrative\(^4\) may appear to be a sole product of a sequence of actions aimed at the requirement of

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\(^3\) From a Christian theistic perspective, any discussion of the interpenetration of nature and culture has to begin in the Mystery of the Incarnation, as this is both where God conjoins the transcendent and immanent in the divine human person and body of Christ; and where the corruption of matter (seen in decay, death, entropy, and sin) is defied by a spiritually redemptive act. It is because of the Paschal Mystery that material and natural bodies can be sacralized and infused with divinity.

\(^4\) See Kai Mikkonen’s “The ‘Narrative is Travel’ Metaphor: Between Sequence and Open Consequence,” where he explains that formalist theory has struggled to account for the ambivalence of travel writing, which is seen as falling outside the realm of narrative because the succession of action lacks causality and is contingent on spatiotemporal trajectories, while also
pragmatic interaction and transformation of geophysical aspects of nature. Yet, I want to challenge the exclusion of such materials from the repertoire of study of cultural objects that register the tensions of the process of modernization and their partial inclusion as documents. In line with da Cunha’s reading of naturalist and scientific texts, I find in these seemingly ‘technical’ or ‘specialized’ texts and images aesthetic, rhetorical, and literary ambivalences which, to say the least, require a cultural-historical narrative that brings to the fore both the expression of non-mastery of the domain of technique (its transformation into a subject, it can be said), and its capacity to mystify, enchant, and participate in a non-secular conception of history.

Chapter three, “Tropics of Enchantment: Technologies of Mobility and Liberation in Henry M. Tomlinson’s Oceanic Voyage to the Amazon,” engages the symbolic, libidinal, and affective aspects of Tomlinson’s The Sea and the Jungle as subjective narrative resources that show the enchanting transformations of technology and the traveler. Tomlinson’s first person narrative, which largely includes indirect speech and landscape descriptions, is the only literary publication in this dissertation. It plays a special role in the argumentative inquiry on representations of technology and nature because his narrative tells a story of liberation from the demands of London’s urban life and the reenchantment of the subject’s experience of reality in face of the encounter with previously unknown natural landscapes. Focusing on Tomlinson’s use of symbolic imagery surrounding technology to express the modern subject’s constraints in urban infrastructures and professional life, the chapter argues that the author’s ambivalent struggle between Promethean and thanatropic (death-driving) impulses finds resolution in the instances of being narrative precisely because of consecutiveness (291-292). Engineering and geographical exploration writings are therefore paradigmatic objects of the study of narrative because they intimately register the spatiotemporal and consecutive intimacy between action in space and sequence.
the narrative where the first person narrative voice manifests a synoptic and comprehensive perspective on experience. In these instances the journey to unknown places, broad and oceanic landscapes incite a reenchanting and potentially redemptive experience of nature. Yet, Tomlinson’s arrival in Porto Velho, where the Madeira-Mamoré Railroad Company is located, and his observations of its social relations and landscape sharply contrast the traveler-narrator’s liberating and wondrous transformations. In Porto Velho, the traveler who once felt free from urban constraints faces the future of the frontier town as a commercial center permeated with means of transportation and modern technology.

The fourth and last chapter starts with an examination of Werner Herzog’s cinematic reenactment of Carlos Fermín Fitzcarrald’s portage in *Fitzcarraldo* (1982). This chapter traces continuities between Fitzcarrald’s portage, Herzog’s cinematic reenactment, and the Madeira-Mamoré railroad to explore the cultural and symbolic field where the film is situated. I use the term reenactment, rather than adaptation, to emphasize Herzog’s desire to probe a practice of mobility and an event that did take place. Portage emerges as an event between reality and performance in Herzog’s cinema. As is known, the director did not shoot the film in a studio, but actually created the conditions for its production in the Amazon, where he hauled a steamship over a mountain with the help of a system of levers and a caterpillar. The audience sees a real steamship being pulled over a mountain while also watching the rendition of Fitzcarrald’s portage into a cinematic narrative. Thus, the film is not the result of the adaptation of an existing story in need

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5 The continuities between these three cases are due both to the complex fluvial routes between the Serjali, Caspajali, Manú, Urubamba, Ucayali, Madre de Dios, Beni, Madeira, and Mamoré Rivers; and to social, technical, and economic relations between traders, explorers, engineers, and rubber barons moving through these fluvial routes. Explorers who started off in the Peruvian Amazon at the Urubamba, for instance, could reach the Madeira River and Porto Velho.
of interpretation, but the reenactment of a practice with a real history in need of writing. The parallels between Herzog’s cinematic reenactment of portage and the construction of the Madeira-Mamoré railroad are pertinent because the early twentieth century completion of the project can itself be read as a product of an insistence on the probation of technological and social limits. As argued in chapter two, the geographical imagination and the technological allure of the railroad project exerts a gripping power in the imagination of engineers and explorers, which needs to be dispelled or confirmed by the project itself.

The short-lived attempt to build the railroad by English engineers before the Collins Expedition of 1878 was readily appropriated by Union Army Colonel George Earl Church, who in 1871 founded the Madeira-Mamoré Railroad Co. The first substantial stage of the construction in 1878 under his leadership and with the engineering efforts of Philadelphia-based company P. & T. Collins gradually ceased until most workers had left Santo Antônio by 1879 (403-409). The construction was resumed in 1907 after Baron Rio Branco signed the Petropolis Peace Treaty with Bolivia in 1903, which included the construction of the railroad in one of its clauses. In 1907, four years after the Treaty of Petropolis had been established, the Brazilian Republic signed a contract with American businessman and infrastructural development tycoon Percival Farquhar to have the railroad built in four years. On August 1 1912, three hundred sixty-six kilometers of the railroad were inaugurated for operations.

Among the determining factors that historian and literary critic Francisco Foot Hardman lists to explain the decision of starting the project anew in *Trem Fantasma: a ferrovia Madeira-Mamoré e a modernidade na selva* (1988) are national affirmation, the desire to dominate the unknown and the savage, the impetus to traverse unexplored territories, and transform them through engineering projects (160-161). Speaking of Brazilian engineer Clodomiro Pereira da
Silva’s criticisms to the construction of the railroad in *O Problema da viação no Brasil* (1910), Foot Hardman states, “Mas, em si, a ferrovia na selva não seria obrigatoriamente ‘motor de desenvolvimento’. Havia pelo menos tantas razões de igual peso para que fosse o contrário: um caminho que conduzisse do nada a lugar-nenhum” (161). What interests me is precisely how looking at the railroad as a construct that leads passengers and cargo from “nothing to nowhere,” to borrow Foot Hardman’s words, allows us to elaborate the other side of the history of the Madeira-Mamoré project: not as a critical history of failure of modern technological and infrastructural projects, but as a positive reading that asks what, if not a functional and efficient railroad, was built.

The iconographic work of American photographer Dana B. Merrill, hired as the official photographer of the Madeira-Mamoré Railroad Company, offers several clues to address these questions. Analogously to portage’s emergence between reality and performance in Herzog, Merrill’s photography is a technical practice that intervenes in the environment of the construction and renders it into an object that appeals to aesthetic sensibilities. Merrill found in the Madeira-Mamoré railroad an opportunity to further the limits of photography and its objects beyond its documental function. As Pedro Ribeiro Moreira Neto explains:

> Merrill was not a typical photographer but a pioneer, not bound by the technical limitations or aesthetic standards of his day. By taking the limits of his equipment to the extreme, he was able to explore a variety of camera angles and, in many instances, did not conform to the photographic conventions of his era, for example, when he purposefully used long exposure times for scenes involving movement. He placed priority on not losing the moment. (Neeleman 187)

His approach to photography is that of an explorer in the strongest sense, for his photography
takes seriously the challenge to technological limitations that drives explorers and their expeditions to terrains that are difficult to traverse. Merrill’s concern with movement and the necessity to capture the moment have to be seen within the cultural history of mobility in the environments of the Madeira and Mamoré Rivers.

I conclude that the relationships between exploration and engineering enacted in these interconnected cases require a cultural-historical framework that emphasizes how supposedly modern technologies of mobility meet their limitations. These probing encounters with technological limitations can be understood not as failures, but as the beginning of the end of the nineteenth century industrial era. Less tragic than prophetic, these visual and textual materials attest to the eschatological dimension of the history of human, environmental, and technological interaction.
Chapter 1

Between Improvised Guides and Technical Enchantment:

the Paradigmatic Travels of the Naturalists and Euclides da Cunha’s Amazon

Euclides da Cunha was not among the early tourists of the Amazon and likely did not get to see an exemplar of the Amazon Steam Company’s publication in his lifetime. The expedition with the Comissão de Reconhecimento do Alto Purus through the Amazon from late 1904 to 1905 create the occasion for da Cunha to read the texts of previous naturalists and travelers who had studied the region, and to pursue a mode of thought about the Amazon that expresses the gaps in knowledge about this environment. Naturalist writing profoundly informs his preconceptions and expectations about the Amazon. In the first essay of À Margem da História, “Impressões Gerais,” posthumously published in 1909, Euclides da Cunha makes the following recommendation about the scientific literature produced by the many naturalists who traveled through and studied the Amazon:

De Humboldt, a Em. Goeldi —do alvorar do século passado aos nossos dias, perquirem-na, ansiosos, todos os eleitos. Pois bem, lede-os. Vereis que nenhum deixou a calha principal do grande vale; e que ali mesmo cada um se acolheu, deslumbrado, no recanto de uma especialidade. Wallace, Mawe, W. Edwards, d’Orbigny, Martius, Bates, Agassiz, para citar os que me acodem na primeira linha, reduziram-se a geniais escrevedores de monografias. A literatura científica amazônica, amplíssima, reflete bem a fisionomia amazônica, é surpreendente, preciosíssima, desconexa. Quem quer que se abalance a deletreá-la, ficará, ao cabo desse esforço, bem pouco além do limiar de um mundo maravilhoso. (3)
Including figures from the previous century until his present day, the passage tells the audience to read the works written by the many naturalists and scientists that went to the Amazon. According to da Cunha, the reader will inevitably notice that not only did they not venture beyond the “great Amazon valley,” but that they also retreated to the corners of their specializations. This remark raises questions pertaining to the state of the natural and human sciences in the nineteenth and early twentieth centuries, and to the culture of travel and exploration in the period. Considering that a gradual distinction within the natural sciences and humanities, theory and practice, were an ongoing process, it is striking to see da Cunha draw his contemporary readers’ attention to the ‘corners of specialization’ and to what he seems to consider a restricted coverage of territory in the naturalists’ journeys.

The remark thus appears as a premature gesture, if not a reaction, against the socio-intellectual and technical transformations that were taking place at the turn of the last century. It anticipates the shortcomings of the specification of institutional, empirical, and logical criteria that distinguish disciplines and their objects of study. While scientists were able to use analytical tools, methods, and categories whose specificity allowed them to exert authority and differentiate the objects of knowledge production from other disciplines, da Cunha notes that specialization ultimately fails to offer a synthetic and comprehensive approach that befits the Amazon. An underlying question is whether da Cunha can only perceive this impasse because he was not a specialist himself. An engineer, journalist, intellectual, member of the Academia Brasileira de Letras, and public officer, da Cunha’s socio-intellectual life and textual production are distributed through disparate professions and functions that make specialization unfeasible. If his relationship with science was marked by a desire for as well as dissatisfaction with disciplined and specialized knowledge (traces of which are evident in Os sertões and the texts on the Amazon), out of this very
tension another form of perception, knowledge, and intellectual production arises.

Nonetheless, should one seek a non-specialized perspective about the Amazon, and what would it look like? That is, under what conditions could specialization have appeared as detrimental to an intellectual living and writing at a time when the process of their development is particularly evident? Was Humboldt’s work also limited by his specialization? Or did da Cunha merely find his predecessor’s works too capacious? Alternatively, did the latter have an altogether different project in mind when he criticized how these figures approached the Amazon? Can the contours of this other, purportedly non-specialized, mode of knowledge derive from his writings? These questions guide my reading of da Cunha as a precocious critic of a disconnected scientific literature and of scientific specialization. His uneasiness and dissatisfaction with specialization and the failure of science to provide a synthetic and comprehensive view reveal a longing for a more integral engagement with the Amazon, and for a mode of experience akin to that of travelers and explorers that went beyond the reach of steamships. Da Cunha’s texts on the Amazon reveal an expressive observer whose position as an official engineer on an expedition end up revealing

6 Euclides da Cunha’s writing epitomizes the crisis of representation of modernity as described by Julio Ramos in Desencuentros de la Modernidad en América Latina in his reading of Sarmiento, “La labor del ‘pobre narrador americano’ acaso resultara ‘indisciplinada’ o ‘informe’ (atributos de la barbarie). Pero esa ‘espontaneidad’, esa cercanía a la vida, ese discurso ‘inmediato’ era necesario para representar el ‘mundo nuevo’ que el saber europeo, a pesar de sus propios intereses, desconocía” (41).

7 The disconnection of the naturalist and exploration literature da Cunha has in mind owes much to the authorship and publication models of the eighteenth and nineteenth centuries. As Adriana Craciun points out, “Rather than fitting such a progressive model of increasing individualization and print modernity, exploration writings reveal the persistence of aggregate institutional authorship models along with a thriving corporate manuscript and archival culture, thoroughly documented by early modern scholars but actually continuing well into the nineteenth century” (33).
and betraying his fantasies about the practices of explorers that venture in zones of difficult passage.

Having enumerated the naturalists who as researchers and travelers stayed within their fields, and did not go beyond the great valley, the passage makes yet another striking remark. As a result of their confinement, the naturalists are reduced to “brilliant monograph writers.” It is interesting that da Cunha does not use the word ‘escritor,’ which translates directly as writer, but ‘escrevedor,’ which casts the person who writes as a writing technician, if not a writing machine himself. The use of this word invokes the emergence of a conception of writing and intellectual production in the nineteenth century as technical practices; a notion that prepares the field for the professionalization of the writer. Naturalists such as Henry Walter Bates and Alfred Russel Wallace would likely find their characterization as “brilliant monograph writers” peculiar. Shifting the focus from their merits as naturalists to their technical achievement as *escrevedores de monografia*, da Cunha positions himself as a reader that can see the other side of the labor of naturalist—an astute rhetorical gesture for an intellectual who can stake a claim for himself as a writer, but not as a scientist.

The first section of this chapter thus looks at how da Cunha’s ambivalent reading of the naturalists generates seemingly contradictory expectations about the Amazon, and about encounters with this land. If to da Cunha these naturalists’ knowledge does not reach beyond the “world of wonders,” how is it deployed in his own writings on the Amazon? How do they contribute to shaping the very conceptions, actions, and perceptions of traveling that are operative in da Cunha’s writings? I argue that not reading the naturalists solely as scientists, but as writers whose accounts also had an aesthetic dimension, da Cunha attempts to satisfy a need for a guided journey to the Amazon. This need also reflects the desire for modernization through the
development of infrastructures for mobility and connectivity. Infrastructures were scarce and vulnerable to natural forces, distances expansive. In describing and reflecting on the infrastructural deficiencies of the attempts at technological modernization of the Amazon, da Cunha also attests to the difficulties of traveling without referents for orientation.

Ana Pizarro sees the discourse of the traveler-naturalist as projecting the “dichotomous gaze of modernity” on the Amazon: on the one hand it perceives grandiosity, and on the other it “[o]bserves, classifies, takes note, disseminates, and informs the science academies of the metropolis” (105). The traveler is constituted as the privileged subject of modernity, expressive of the “anxiety” that emerges in face of knowledge (105). While the collisions between the order of knowledge and the alleged grandiosity of the Amazon definitely instigate a series of productive tensions and disorientations, this does not mean the traveler-naturalist is a privileged subject. While this may apply to the socio-intellectual contextualization of Alexander von Humboldt as a prestigious and groundbreaking traveler, naturalists such as Alfred Russel Wallace and Henry Walter Bates\(^8\) had, to a great extent, a precarious relation to scientific institutions and financial means. Cultural critique tends to cast travel writing and scientific knowledge about the tropics as misleading products determined by ideological inheritances. In so doing it undermines the need for a serious engagement with the empirical and practical challenges, and the conditions of possibility of perception that travelers constantly have to deal with. The projection model that Pizarro uses to describe the relationship between the double movement of modernity in face of the

Amazon—also adopted by Mary Louise Pratt in her analysis of travel writing in Imperial Eyes: Travel Writing and Transculturation—takes as its point of departure the position that it was merely a question of imposing an a priori order of knowledge over the tropics as a passive realm.

As Luciana Martins and Felix Driver explained in Tropical Visions in an Age of Empire, “[t]he apparently simple act of projection was in fact a laborious process in which a variety of transactions were involved” (8). Although da Cunha was not a naturalist, but an engineer, writer, intellectual, and official commissioner, Martins and Driver’s observation stands, insofar as his engagement with the Amazon cannot be grasped solely as a positivist, scientifically deterministic view inherited from European science and previous accounts by travelers and naturalists. Da Cunha’s writings constantly register the many effects that traveling through the Amazon had on intelligibility, vision, and perception. The encounter with the Amazon does not merely give opportunity for the imposition of an a priori framework that remains unchallenged. Instead, the Amazon’s geophysical and biological features create different conditions for particular modalities of vision and spatiotemporal orientation that affect the way traveling is represented as an empirical and socio-cultural phenomenon, and also put previous assumptions in question.

Da Cunha’s engagement with the writings of the naturalists is multifaceted; he cites, criticizes, and even makes dubious references. Despite his belief that scientific and technical knowledge were key to the understanding of the Amazon and its modernization, knowledge production had to overcome the fragmentation caused by specialization. The perception of this

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9 According to Luiz Costa Lima’s analysis of Euclides’s engagement with his scientific sources in Os sertões, science and art did not achieve a synthesis, as noted by much of the reception of his work. Not only did science predominate in the text, but Euclides did not have a critical approach to his sources, which Costa Lima finds crucial considering that Euclides embodies the imaginary of the Brazilian intellectual (23).
necessity and the desire for a comprehensive view of the Amazon moved da Cunha’s writings. At
the same time, this desire led him to adopt an ambivalent position toward the technical domain
(including writing and apparatuses of observation) that threatens the demystification of
Amazonian nature. For these reasons, the question of how he engages with the naturalists, and the
function their works have in his text remains a pertinent one, not easily resolved by intellectual
currents and sources that circulated in Brazil from the mid nineteenth to the early twentieth
century.

Toward the conclusion of the passage, the scientific literature of the Amazon is said to
reflect the ample, surprising, valuable, and disconnected physiognomy of the Amazon. Far from
being an isolated instance in his texts, such parallelisms between the physical world and the written
word are salient manifestations of a problem that underlies much of modern writing and thinking
at the turn of the last century. The resemblance between the uneven physiognomy of the Amazon
and its literature reveals a chasm between intelligibility and geophysical reality, as well as a collapse
between the two, whereby they seem to infiltrate one another. This double movement—of chasm
and collapse—which to a great extent characterizes modernity’s crisis of representation,
reverberates through his writings on the Amazon. The subjects of the crisis of representation could
be said to be asking: is natural reality best represented through the distance (chasm) of observation,
or can we but collapse the distance between representation and reality through expressive
techniques?

The last section of this chapter addresses how these questions are negotiated in the writings
of da Cunha and in the texts of travelers who also struggled with the phenomenological effects of
traveling in the Amazon. I look at how da Cunha invokes technique and technical objects to
rhetorically aid his text. The appeal to theodolites and microscopes, for instance, allows da Cunha
to simulate the objectivity and stability of the observation of a natural realm that otherwise bewilders the traveling author and compels him toward expression, that is, toward the collapse of the distance between observer and observed. Although it is not surprising that da Cunha, an engineer, avails himself of geography, geology, and optical apparatuses to convey the reality revealed in his travels, the ways in which they help him read the environment and form a visual field bears further inquiry. As Flora Süsskind puts it in Cinematógrafo de Letras, it is not just a question of how literature represents technique, but how the narrowing of the space between cultural production and the technical dimension (be it cinema, photography, print, or optic apparatuses used in science) transform literary technique, and the very conditions of vision and observation in traveling (15). If da Cunha’s reading of the naturalists fulfills the need for orientation in traveling, the appeal to the technical domain in his writing intervenes precisely in instances where Amazonian environments challenge the traveler’s capacity to make the Amazon a formally and visually stable space. The technical armamentarium he mobilizes in his writing, however, does not necessarily resolve the problems of vision and access to reality, but show precisely how the modern Amazon’s characterization as a frontier of socio-technological development creates the occasion for the enchantment of the apparatus itself and a reenchantment of reality.

Euclides da Cunha’s speech given on occasion of his acceptance of a chair at the Academia Brasileira de Letras on December 18 1906 begins by recalling his trip to the Amazon two years earlier. The speech reiterates an impression that da Cunha recollected elsewhere in his writings,
his disappointment at the sight of the Pará River, which he found to be a diminutive version of the sea, but with a “smooth and muddy surface” (Contrastes 229). Da Cunha attributes the source of disappointment to the discrepancy between the real Amazon and its depiction in the writings of travelers and naturalists such as Humboldt, Charles Frederick Hartt, and Henry Walter Bates, among others. Having briefly met naturalist Emílio Goeldi and botanist Jacques Huber in Belém, da Cunha says in his speech that he spent “two unforgettable hours” with Huber. He began reading a monograph written by Huber on board the ship that took him to the north of Brazil. In his speech he tells the audience that:

Deletrei-a a noite toda; e na antemanhã do outro dia —um daqueles ‘glorious days’ de que nos fala Bates, subi para o convés de onde, com olhos ardidos de insônia, vi, pela primeira vez, o Amazonas [. . .] Salteou-me, afinal, a comoção que eu não sentira. A própria superfície lisa e barrenta era mui outra. Porque o que se me abria às vistas desatadas naquele excesso de céus por cima de um excesso de águas, lembrava (ainda incompleta e escrevendo-se maravilhosamente) uma página inédita e contemporânea do Gênesis. (229)

This pivotal moment of the speech at the Academy of Letters captures the double movement in the conception of writing that is operative in da Cunha’s texts. It presents writing as inciting a perception of reality, while positing it as a phenomenon to be observed, where the sight before his eyes reminds him of a page in the process of writing. The use of the verb deletrear, which means spelling, ‘de-lettering,’ deciphering, or elucidating, also invokes a conception of reading as an activity that requires technique. Da Cunha had used the same word to describe the act of the reader who ventures in the “ample and disconnected” scientific literature of the Amazon. To decipher one must check signs against each other as to bring to the fore a message that appears to be ‘inside’
another. The reader must thus have knowledge of at least two codes. At the same time the word *deletrear* brings up writing and reading as technical activities of codification and decodification, the fact that what is revealed to da Cunha is an “unseen page of the Genesis” conjures the non-technical and non-rational acquisition of knowledge about nature as creation. Huber’s monograph appears as a scientific text that nevertheless has non-scientific effects. While scholars who insist on da Cunha as a positivist thinker seeking scientific authority may disagree, I see instances when da Cunha invokes a non-rational avenue to knowledge as evidence of his sensibility to the insufficiencies of the scientific method and reason.

That it was thanks to Huber’s monograph that da Cunha was able to see the Amazon River “for the first time” introduces a chasm between an Amazon that exists unperceived as a reality, and perception as a component of traveling that is nevertheless informed by previous descriptions. The writings of the naturalists at once seem to prevent and to incite the vision and experience of reality. While such manifestation of the crisis of representation is not exclusive to travel writing on the Amazon, it is nevertheless necessary to read the continuities and repetitions through the writings of the narrators of this environment not merely as signs of a *discourse on* the Amazon, but also as making claims on a *reality external* to the text. In other words, writing about the Amazon is not a process that is shaped solely by formal and discursive aspects of travel writing as a cultural genre, but also one informed by the concrete environment it sets itself to describe. Travel accounts\(^\text{10}\) on the Amazon were abundant and provided some information about rivers, indigenous tribes, posts, 

\(^{10}\) As Ileana Rodríguez proposes, “It is colonialism that places the fracture at the heart of representation. Explorers did not see with scientific disciplinary eyes because there was no such knowledge back then. They proceeded by accumulating, examining, and storing information in all the archival systems made available to them –encyclopedias, museums, catalogs, filling systems, libraries, indexes, inventories” (xiii).
etc., that could be expected by those following similar trajectories. The colonial accounts of naturalists, explorers, and scientists present many difficulties for da Cunha, who is writing in the early twentieth century. While the Amazon had been seen ‘for the first time’ by countless travelers, the repetition of the encounter with the Amazon was nevertheless necessary.

If reading Humboldt’s “lyrical pages,” or being exposed to the “terror” Wallace claims in relation to the mass of water of the Amazon prevents da Cunha from seeing the “real,” it is significant that it is yet another piece of naturalist writing that allows him to see the Amazon for the first time. The archetype of the encounter must inhere in the tropes of travel narrative and their conception. To the modern traveler, the difficulty lies in the need for a resolution between the incitement of the original vision and the preservation of knowledge acquired as a reader of the many depictions, codifications, visual and textual materials produced on the land to be seen. Traveling must be at once an exercise of analytical efficacy, whereby a priori knowledge is put to test as means of distinguishing between things, and an opportunity for the synthetic acquisition of information and experience.

Da Cunha’s ambivalence toward the naturalists in his writings on the Amazon raises questions about his reading of the naturalists: a reading that created an image of the Amazon for him (and many others) before the journey with the commission. The same reading of the naturalists belies his disappointment and makes an original sight of the Amazon River possible. The inciting and neutralizing effects of naturalist writing evince both a desire to engage with naturalist knowledge production, and an acknowledgement of the limits of the naturalist mode of knowledge. The former reading engages with the naturalists without challenging their socio-intellectual roles in the development of nineteenth and early twentieth century science in citations, interpretations of the repercussions of their theories, authoritative references, etc. To a
considerable extent, however, the latter—a relatively ‘undisciplined’ reading of the naturalists—dislocates their texts from a strictly scientific register and engages with their contributions as travelers. By undisciplined I mean a reading that does not necessarily adhere to the protocols of specialization and thus reveals the text’s function beyond epistemic and disciplinary constraints. Da Cunha’s approach to the naturalists as escrevedores de monografías who both neutralize and incite a vision of the Amazon must be understood as a response to the application of preexisting systems of knowledge and scientific methodology, i.e. Linnaean taxonomy, to the Amazon as a site whose dynamics remain undiscovered in face of such attempts. Da Cunha’s writing expresses the recognition that while the scientific project is necessary to uncover the functioning of nature, knowledge produced by different disciplines does not translate into a coherent picture of reality.

Between Humboldt’s “lyrical pages” and Bates’s “glorious days” lies an intricate shift in the way that science and aesthetics are configured in the study and perception of nature. Humboldt’s comprehensive and affective approach is displaced by a factual mode of writing that focuses on the description of specific items and situations (occasionally leading the narrative to include the more adventurous and exciting aspects of the their ‘travels’ in the Amazon). Both Wallace and Bates’s texts are narratives that from the onset combined the specialized knowledge of the naturalist with the fulfillment of a commercial demand for texts that introduced the novelties of the tropics to a general readership (Stepan 35). These naturalist travel narratives addressed a public whose interest in natural history and description had been previously instigated by Charles Darwin’s Journals and Remarks, later known as The Voyage of the Beagle. While Bates was more interested in the collection and study of insects, Wallace focused on botany. As Nancy Leys Stepan explains in Picturing Tropical Nature, nineteenth century England saw a growing demand for informative and entertaining writing to “[s]atisfy the general public, and an increasingly professional and scientific
audience” (35). Stepan also shows how Wallace’s *A Narrative of the Travels on the Amazon and Rio Negro* (1853) was an “unromantic” and “unheroic” portrayal of Amazonian nature (62-63). The narrative begins with a short and unimpressed description of the arrival at the Amazon, in the city of Belém, and proceeds with a series of logistical and practical problems that often find no resolution (63). Wallace’s collection was also lost in a fire in the ship during his return to England.

Wallace’s narrative is pivotal to the understanding of da Cunha’s ambivalent relation with his naturalist sources, and of how they satisfy a desire for a guided travel by a lettered reader. He not only expresses a disappointment with the Amazon (the first place he visited below the Equator) but also sees the need to explain its source. In the first pages of the narrative, Wallace writes, “Thus it is that travellers who crowd into one description all the wonders and novelties which it took them weeks and months to observe, must produce an erroneous impression on the reader, and cause him, when he visits the spot, to experience much disappointment” (5). Wallace explains the gap as an instance of misrepresentation, and his narrative attempts to rectify the dissonance between description and reality. The traveler’s compression of the impressions and observations that emerged in a longer time frame gives the wrong impression and leads to disappointment. He later says that the frustration of his expectations are, “[p]rincipally owing to the accounts of picture-drawing traveller, who, by only describing the beautiful, the picturesque, and the magnificent, would almost lead a person to believe that nothing of a different character could exist under a tropical sun” (9).

The ‘unromantic’ tone that Stepan detects in Wallace is therefore best understood not through the author’s attempt to reduce the aesthetic significance of images, of descriptive and pictorial language, but according to his attempt to conceal the *technical* attitude toward textual and non-textual images that support the internal functioning of the text rhetorically. Bates’s narrative
is less shy about its reliance on pictorial language and images, but Wallace, too, *needs* them in order to write. That is, the naturalist text itself is premised on the possibility of visualization in face of the absence of the reader from *in situ* observation. In other words, the naturalist text is a means of visualization of its own, and the attempt to undermine the impact of the reality observed is, first and foremost, an attempt to stabilize the text’s potential to be used technically. Da Cunha insightfully perceives the most important mechanism of naturalist writing, which is precisely to deploy the text as a *technical* device of observation, a veritable set of lenses in the format of letters—hence da Cunha’s use of the word *escrevedor*, rather than *escritor*.

Da Cunha repeats the gesture of confessing disappointment¹¹ in “Impressões Gerais” and in the speech, and also finds it necessary to explain the source of the gap between the “subjective image” and the “real” Amazon. Note that while Wallace attributes it to a discrepancy between the temporality of experience and its description, and to images that only show beauty, da Cunha says that besides the “subjective image,” the Amazon also overexcites imagination. He explains that even the robust scientific spirit of Frederick Hartt found himself in the vicinity of fantasy despite the monotony of the river, “É que o grande rio, malgrado a sua monotonia soberana, evoca em tanta maneira o maravilhoso, que empolga por igual o cronista ingênuo, o aventureiro romântico e o sábio precavido” (3). If the river invokes wonder in the naïve chronicler, the romantic adventurer, and the prudent researcher alike, where would da Cunha be situated? What does this

¹¹In *The Sea and the Jungle*, explored in the third chapter, Henry M. Tomlinson expresses his own disappointment with Pará: “The forest was a narrow neutral tinted ribbon far beyond. The sky was blue, the texture of porcelain. And I was grievously disappointed; yet if you put it to me I cannot say why. There was something missing, and I don’t know what. There was something I could not find; but as it is too intangible a matter for me to describe even now, you may say, if you like, that the fault was with me, and not with Para.” (91-92)
supposedly sober act say about the concepts and practices that define da Cunha’s travel, and the traces it leaves in his texts? As Francisco Foot Hardman observes in *A Vingança da Hileia: Euclides da Cunha, a Amazônia e a Literatura Moderna*, “[E]uclides opposes the fantasies offered by travelers’ narratives—among them Humboldt’s—to the casual vision of the contemporary observer” (39, my translation). While the denunciation of the fantasies of previous accounts emphasizes da Cunha’s sobriety as a modern intellectual and traveler, the casual vision of the contemporary observer is a result of an observer that does not know where to look, and thus continuously searches for points of orientation to hone his vision.

In this sense, da Cunha’s repetition of the gesture of disappointment is not just a rhetorical gesture that positions him in relation to his sources to affirm his authority. It is also a response of a reader that, in not seeing what he expected in the Amazon, did not know where else to look. It is as if the eyes of the man of letters, the city dweller who assiduously reads whatever he can get a hold of, were confronted with a sort of semiotic vacuum. The traveler then improvises a guide out of the previously written accounts and maps in order to see once again. While da Cunha says nothing about the achievements of Huber’s botanical monograph in that instance of the speech cited earlier, he finally sees the Amazon river, “Salteou-me, afinal, a comoção que eu não sentira. A própria superfície lisa e barrenta era mui outra” (229). It is not just a question of seeing the river. Despite da Cunha’s denunciations of fantasy, he is still invested in experiencing the “excitement” that he could not before. The desire not to miss out on experience suggests that the effects of previous accounts cannot be entirely grasped through the claims of their disciplines and genres. In the absence of travel guides about the Amazon, the lettered traveler scavenges descriptions, reactions and experiences to give shape to and legitimize his own travel accounts.

If to Pizarro the discourse of the traveler-naturalist both perceives grandiosity and
classifies, the constancy of the features of Amazonian environments poses a problem to the spatiotemporal experience of the traveler, and the aesthetic characterization of landscapes. In fact, travelers spent a considerable part of their journeys on canoes and steamers that navigated through landscapes that did not excite the vision of the observer neither allowed him to remain in the perspectival range of comfort of the casual modern onlooker. Describing the trajectory of the traveler navigating upstream the Amazon River before entering one its branches, such as the Purus or Juruá, da Cunha writes in “Um Clima Caluniado”:

Atravessa quinze dias infindáveis a contornar a nossa costa. Entra no Amazonas. Reanima-se um momento ante a fisionomia singular da terra; mas para logo acabrunha-o a imensidade deprimida —onde o olhar lhe morre no próprio quadro que contempla, certo enorme, mas em branco e reduzido às molduras indecisas das margens afastadas. Sobe o grande rio; e vão-se-lhe os dias inúteis ante a imobilidade estranha das paisagens de uma só cor, de uma só altura e de um só modelo, com a sensação angustiosa de uma parada na vida: atônicas todas as impressões, extinta a idéia do tempo, que a sucessão das aparências exteriores, uniformes, não revela [...].

Unlike the excitement or fear of the sublime experience of great vistas and heights, the lack of distinction dulls the sensible perception of the traveler. The traveler’s vision is momentarily awakened by the singular physiognomy of the Amazonian land, but the “depressed immensity” prevails and vision dies on the very view that it contemplates. The observer’s vision collapses on the expansive, but indistinct and frameless, picture before his eyes. The traveler is unable to detect difference itself. “Days go by before the strange immobility of the landscapes of a single color, a single height, and a single model”. “An anguishing feeling of a stop in life”. All impressions are
atonal, the idea of time extinct. Da Cunha can only express an experience in the passage, but not describe the landscape through which he travels in detail, as description requires variation and a concrete vocabulary. In da Cunha’s essays, such passages contribute to the conception of the Amazon as a site “at the margins of history,” as the title of his collected essays invoke. They are stylistically characterized by overtly expressive tones, rather than by narration, as the literary mode that allows the writing of that which does not seem to change. Change, difference, and the passage of time would be some of the conditions for the prevalence of narration in his writings, and for the integration of the Amazon into a historicizing register.

Da Cunha is not the only traveling-author to use the word *monotony* to describe the effect of invariability in the landscape. The word can be traced in the texts of other traveler-narrators, naturalists, and explorers. Waiting for vessels that would bring him to Pará from Barra do Rio Negro, now the city of Manaus, Wallace says that nature, “[d]ressed in an eternal and almost unchangeable garb of verdure presents but a monotonous scene to him who has beheld it from childhood” (382). The passage invokes more than the naturalist’s perception of the nature surrounding him. The continuity between his observations of nature from childhood to the present actually attests to the incapacity to see variation or devise a novel aesthetic perception of nature. Akin to da Cunha’s gaze, which dies in the very scene it contemplates, the naturalist travels to the Amazon to become an experienced naturalist, only to have his capacity to be one be questioned by sensorial and physical challenges posed by its landscapes. The remainder of the passage shows how Wallace relies on previous memories of moving through English landscapes in order to fill the representational chasm opened by the encounter with Amazonian landscapes:

In the interior of the country there is not a road or path out of the towns, along which a person can walk with comfort or pleasure; all is dense forest, or more
impassable clearings. Here are no flower-bespangled meadows, no turfy glades, or smooth shady walks to tempt the lover of nature; here are no dry graveled roads, where, even in the intervals of rain, we may find healthy and agreeable exercise; here are no field-side paths among golden corn or luxuriant clover. (382)

As in da Cunha, Wallace’s description of the monotonous landscape shows the entanglement between the means of travel, how he moves through space, and the formation of aesthetic evaluations about the sights before him. If da Cunha’s boat trip brings up the sensation of loss of time and the indistinctiveness of the landscape, which he compares to a frameless picture, Wallace emphasizes the lack of spatial organization of nature. Without access to courses of passage (roads, paths, shady walks) and manipulated landscapes (meadows, turfy glades, field-side paths among golden corn), the “lover of nature” cannot “walk with comfort”. As Michael Bunce argues in The Countryside Ideal: Anglo-American Images of Landscape (1994), “[c]ountry gentry, exurbanites, and weekend cottagers, even back-to-the-landers” have “[f]abricated a landscape which has transformed the rural environments and productive spaces into areas which conform to the idealisation of countryside as a place of leisure, refuge and alternative living” (110). Despite the fact that the labor of naturalism, the collection of specimens, and science leads Wallace to environments that spoil the idealization of the countryside which he sustained, Wallace still longs for an experience of refuge and leisure in the Amazon. It is not that Wallace simply projects the idyllic experience of the English country on Amazonian landscapes, but rather that aesthetic conceptions of what traversing Amazonian landscapes is like are not entirely given. Da Cunha, Wallace, and many other travelers were in the process of experiencing and translating an environment that came with the challenges of novelty. The “impassable clearings” and “dense forest” that Wallace invokes as obstacles to a casually contemplative experience of nature are
central to how Amazonian landscapes came to be known as impenetrable, as analyzed in detail in the following chapter.

The German engineer Franz Keller, author of *The Amazon and Madeira Rivers: Sketches and Descriptions from the Note-book of an Explorer* (1874), describes his expedition through the Madeira River with formulations similar to da Cunha and Wallace:

> By-and-by, the monotony of the vegetation, magnificent as it is, and of the landscape, whose uniformity is unbroken by mountain or hill, wearies the eye of the traveller; who, as he paddles slowly up these immense distances in his unwieldy canoe, sees nothing save the blue sky, the smooth water, and a dense girdle of evergreen forest. (48)

Keller’s description, though less conceptually eloquent than da Cunha’s, captures the contrast between the qualities of the forest. Its magnificence does not exempt the exhaustion of vision. The explorer at once sees the “immense distance” and the vastness of the elements of the landscape (sky, water, and forest) but is also limited by it. In seeing “nothing save the blue sky,” Keller confesses a few lines later that he and his crew “[w]ished heartily to change the easy navigation on this smooth surface for the variety of troubles and dangers that we know to await us at the Rapids, and of which we were soon to have a full share” (48).

The rapids Keller refers to are the very rapids that were to be bypassed with the construction of the Madeira-Mamoré railroad. The purpose of his expedition through the Amazon and Madeira Rivers was to “[e]xplore the Madeira River, and to project a railroad along its bank where, by reason of the rapids, navigation was rendered impossible” (v). The weariness of the sight of a monotonous vegetation and landscape is to be compensated by the longing for an encounter with natural obstacles that excite the explorer and require physical action. Unlike Wallace, who appeals to the
stability of the English country, the German explorer orients himself to topological discontinuities (mountains, hills, rapids) and to challenges to mobility, as he confesses wishing to “[c]hange the easy navigation” of a smooth surface for “[a] variety of troubles and dangers” (48).

Da Cunha, Wallace, and Keller are three revealing examples of authors that invoked monotony to characterize the paradoxical aesthetic experience of uniformity of sensorial stimuli. While naturalists such as Wallace inevitably found themselves in many dangerous situations during their travels, their texts aim at maintaining the appearance of a controlled and sober experience of the environment, one which would not compromise their scientific aspirations. Contrary to the naturalist, the explorer is a figure who needs to discover and understand danger. He takes up the discursive task of sober description but breaks it with the encounter with what is not uniform in nature. Da Cunha’s writings are torn between the desire for a scientific image of the Amazon and the recognition that science alone cannot provide a comprehensive knowledge on the land. His text is open to the conflicting modes of expression and representation, and to the tensions of the diverse intellectual currents of his time. It is in the appeal to the domain of technical apparatuses and to the technical knowledge of the engineer that we find da Cunha’s strongest attempt to guarantee the reliability of observation and of writing itself.

ii. Lenses of a Theodolite: Writing and Technical Enchantment

Writing, this seemingly innocuous act of codification and transmission, is one of the major obstacles to Euclides da Cunha as an intellectual. Although he wrote letters and essays, and measured curvatures and coordinates, the multiple activities he had to carry out were both the source of anxiety and resolution toward writing. Speaking again of Huber’s monograph in the
speech at the Brazilian Academy of Letters, da Cunha says:

O que eu, filho da terra e perdidamente namorado dela, não conseguira
demasiando-me no escolher vocábulos, fizera-o ele usando um idioma estranho
gravado do áspero dos dizeres técnicos. Avaliei então quanto é difícil uma coisa
trivialissima, nestes tempos, em que os livros estão atulhando a terra, escrever [...].
(Contrastes 231)

Da Cunha perceives the assiduous search for words as an impediment to writing. In trying too
hard to write, da Cunha could not. Huber, on the other hand, succeeded in writing on the Amazon
with his “foreign idiom marked with rough technical sayings”. In other instances when da Cunha
refers to the naturalists as “escrevedores,” he suggests that they failed to comprehensively grasp the
Amazon because of their overtly technical and narrow approach. Here, it is technical knowledge
and a technical approach to writing that make it possible. The conclusion of the passage shows that
the author does not intend to add to the “pile of books accumulating like waste on the earth” with
the seemingly “trivial” act of writing. For it not to be trivial, writing has to be revelatory like nature
opening itself as an unread page of scripture, or redemptive. The desire for a redemptive text is
expressed in a letter he writes to Coelho Neto from Manaus on March 3, 1905, where he tells his
friend that in a book entitled “Um Paraíso Perdido,” “[p]rocurarei vingar a Hiloe maravilhosa de
todas as brutalidades das gentes adoidadas que a maculam desde o século XVIII”
(Correspondência 266). To be precise, da Cunha uses the verb “vingar,” rather than redeem. Yet, I
contend that, far less a positivist than many critics have made him out to be, da Cunha appeals to
the domain of technique as a warrant for a stable and objective representation of the Amazon only
to betray this aspiration through an enchanted experience of reality and technique itself. The
intellectual aspiration to avenge the Amazon from its abuses or synthetically comprehend it lead
his search for models beyond the domains of reason and science to the more empirical space of technique, and the culture of exploration that was burgeoning at the period. It is not just the Amazon he would avenge, but his personal investment in it as a source for an intellectual project that surpassed *Os sertões*.

The expedition with the commission set particular restrictions to his travels and required technical and geopolitical tasks\(^\text{12}\), which meant da Cunha could not venture into the depths of the Amazon as he wished. His correspondence with Baron Rio Branco, Alberto Rangel, Coelho Neto and others shows da Cunha insists on the pursuit of self-fashioning models for his travels. In this case, he does not turn to the naturalists, but to the *bandeirante*—quintessential explorer of unknown lands in colonial Brazil—and to modern explorers (Correspondência 278). In a letter to Coelho Neto, written as he impatiently awaited his departure from Manaus to the Purus region, he says, “Não te direi os dias que aqui passo, a aguardar o meu deserto, o meu deserto bravio e salvador onde pretendo entrar com os arremessos britânicos de Livingstone e a desesperança italiana de um Lara, em busca de um capítulo novo no romance mal-arranjado desta minha vida” (266). Da Cunha makes the affective spheres and redemptive hopes of the expedition to the Amazon, “the wild and salvific desert,” clear throughout his personal writings. The search for a new chapter of his life in the Amazon reveals the entanglement between the biographic and professional aspects of da Cunha’s textual production. Besides the salvific and affective dimension of his appeal to the “bandeirante” and explorers, da Cunha’s imagined self-fashioning is an expression of his desire to

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\(^{12}\) Susanna B. Hecht’s research on da Cunha’s participation in the official expedition and relation with Baron Rio Branco lists the verification of the course of the Purús river, the exploration of areas of Cataí and Ucayali, the determination of the coordinates of the mouth of main affluents, correction and completion of William Chandless’ maps, among others (280).
assimilate the modes of life and technical knowledge necessary to thrive in the Amazonian environment. Álvaro Fernández Bravo explains this retrieval of the bandeirante in da Cunha’s writings on the Amazon:

La figura del *bandeirante*, de muy mala reputación en la literatura colonial hispanoamericana y en las fuentes coloniales jesuitas por sus expediciones de captura y esclavización de indígenas, resulta aquí recuperada como antecedente en el proceso de naturalización, es decir, de canalización y penetración reticular de la selva, para llegar hasta sus rincones más remotos. (115)

Fernández Bravo argues that the adoption of the model of the bandeirante would allow da Cunha to arrive at a relationship with Amazonian nature that combines the tellurian penetration of the forest with the technical knowledge needed to establish a viable and productive biopolitical matrix. Interestingly, da Cunha’s strong emotional attachment to these models and the fact that the bandeirante is a colonial figure only intensify the enchanting connotations of his work. After all, the condition for a biopolitical matrix of life and labor befitting of the ideals of progress has as a prerequisite a highly romanticized and primitive conception of the bandeirante’s relationship to nature in the hinterlands of Brazil.

Nevertheless, da Cunha was still a man of the city who denounced the barbarism and nomadism that characterized the socio-environmental state of the Amazon. His redemptive ambition for an immersive and empirically intensive journey of exploration in the Amazon remained a romantic, albeit present, concept, as the author also resented the scarcity of infrastructures of mobility. In “Brasileiros,” an article published in *Jornal do Commercio* in 1907, da Cunha refers to J. Delebecque’s arrival in Puerto Victoria, a once functional and active port that the Parisian “touriste” found in total abandonment, “O porto era uma ruína. O viajante ali
permaneceu por algumas horas a fim de secar as suas roupas encharcadas ao calor de uma fogueira feita com as portas desquiciadas e ombreiras vacilantes das vivendas [...]” (À Margem 71). Da Cunha’s attitude to Delebecque’s description of the ruins of Puerto Victoria reveals his ambivalence toward the technological modernization of the Amazon. On the one hand the author nostalgically longs for models of exploration that he cannot fulfill in practice when he invokes Livingstone and Lara. Though these figures are affectively relevant to understand da Cunha’s subjective struggles, his official commitment to the expedition does not allow for a traversal of Amazonian spaces beyond frontiers, villages, or posts. His lamentation of the state of decay of Puerto Victoria evinces his longing for the permeation of the Amazon by means of mobility and the infrastructures that support them. While explorers also rely on technologies and apparatuses, modern exploration is premised on the overcoming of the dependency on sedentary, localized, infrastructures that support the ease of mobility and a more seamless experience of travel. Intermittent constructions such as Puerto Victoria, already in ruins by 1905, or Porto Velho, which was thriving around 1910, make the modern traveler’s experience of Amazonian space plastic and ambivalent. To have the experience of the “wild and salvific desert,” the traveler must go beyond the affordances, even if precarious, of villages, posts, and ports. At the same time, the traveler wishes for the emptiness or wild space to be filled with living signs of civilization.

The necessity to overcome the ineffability of the Amazon and to permeate it with signs of civilization through the arrival of modern technologies lead his texts not only to collapse the space between writing and the domain of nature, but also between literature and engineering (as a

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13 On the origin of Puerto Victoria, Delebecque writes in *A Travers L’Amerique du Sud*, “Elle avait été fondée par un brésilien dont les affaires n’ont pas réussi et quitté il y a quelques années cette rive inhospitalière. La végétation tropicale a bien vite tout envahi, et l’habitation, qui n’est qu’à quelques mètres du bord, est maintenant invisible de la rivière” (242).
domain of technique and applied knowledge). That is, if the Amazon lacks the legibility of a city permeated with signs, names, historical and touristic sites, and urban infrastructures, the author-engineer’s writing becomes a space of codification of the supposedly empty Amazon. Da Cunha writes the preface for colleague Alberto Rangel, an engineer who resided and worked in Manaus. Rangel hosts da Cunha in his house as he awaits the official commission to continue its journey to the Alto Purus region. Rangel’s *Inferno Verde* (1908), which is also the title of the last of a collection of eleven expressionistic fictional short stories, is largely a portrait of social and cultural degeneration in the Amazon. His tellurian, baroque, and deterministic conception of society in the Amazon is also teeming with an equally nihilistic perception of the destruction of Amazonian nature. The first story, “O Tapará,” depicts the creative and destructive forces of Amazonian nature struggling with each other. In the Preface to Rangel’s book, da Cunha conceives geological history as writing itself, “A geologia dynamica não se deduz, vê-se, e a historia geologica vai escrevendo-se, dia a dia, antes as vistas encantadas dos que saibam lel-a” (11). Rather than being understood through a deductive process, “dynamic geology” is “seen,” and “geological history is written day-by-day before the enchanted eyes of those who know how to read it”. Da Cunha’s idea of natural history writing itself before his eyes emerges from the necessity to address the gap caused between the scientific representation of nature and the perception of reality as it appears to the observer. In saying that geological history is written to those who can read it, da Cunha circumvents the burden of naïve realism, which demands the fulfillment of correspondence between representation and the outside. Da Cunha suggests that the outside, too, is already writing itself. The subject of this knowledge is one who knows how to read an ongoing process. Beyond that, the vision of the subject of this non-deduced knowledge of geological history is not disinterested and objective, but “enchanted”. Da Cunha seizes the potential of non-deduced means of knowing to lead to
knowledge of a scientific nature. It is not that what is shown to the eyes of he who can read it contradicts scientific knowledge, but that the means by which he arrives at it may be non-scientific. Moreover, da Cunha suggests that scientific knowledge has the potential to incite a non-rational effect. It is not that reason and this elusive mode of knowledge, akin to revelation, are at odds; rather, they work together at two ends.

While conceptions of reason as leading to enchantment are familiar and widely discussed amidst theologians and scholars thinking within or in relation to theistic traditions, secular readers or scholars that emphasize the presence of positivist currents and attitudes in da Cunha’s works may find my reading of such passages incongruous with his identification with and support for the scientific project. Literary and cultural historians such as Francisco Foot Hardman and Luciana Murari, however, have not only called attention to the multiplicity of intellectual and cultural currents in da Cunha’s writings, but have also examined the presence of ideas that reflect the entanglements of the domains of science, technology, and religion. In *Natureza e Cultura no Brasil* (1870-1922) Murari observes that, curiously, da Cunha’s description of the effect that science had on his vision of the Amazon is “[p]ermeated with religious images” (326). The conception of Amazonian nature as an “unseen page of the Genesis,” which the author brings up both when speaking of Huber’s monograph and in the Preface to Rangel’s *Inferno Verde* evidences the permeation of religious images Murari and I detect. Such statements remarkably bring together natural-scientific and sacred-creationist views of history. In challenging the naturalist and engineer’s capacity to read its geophysical expression, the Amazon is seen as manifesting the actuality, the presence, the very contemporaneity of creation and the mystery of nature itself. Da Cunha does not make any statement that would suggest that what is at stake is the elimination of an enchanted view of nature and reality. If anything, he is at pains to lay out a vision of scientific
knowledge that is intrinsically related to an inexhaustible mystification. Nature simply cannot be
fully known. Man could not bear the weight of knowing all its laws and mechanisms. He writes in
the Preface:

É natural. A terra ainda é mysteriosa. O seu espaço é como o espaço de Milton:
esconde-se em si mesmo. Annulla-a a própria amplidão, a extinguir-se, decahindo
por todos os lados, adscripta á fatalidade geometrica da curvatura terrestre, ou
illudindo as vistas curiosas com o uniforme traiçoeiro de seus aspectos immutaveis.

(5)

The conception of earth’s space as Miltonian also appears in his letters (Correspondências
268). The passage reads as an eschatological description of earth’s creative and destructive
processes as intrinsic obstacles to the explanation of its laws and knowledge of its space. Physical
finitude is itself a given and unsurpassable impediment to the completion of the scientific project.
Even the earth’s curvature is interpreted as a fatality. Mystery and enchantment are forces that
motivate the expansion of scientific knowledge. Rather than disenchanting reality through
scientific explanation and knowledge, science would not only be revealing an enchanting vista but
would also be offering a picture that can never be completed. Mystery is inexhaustible. Enchantment inevitable.

As an engineer and intellectual, da Cunha is invested not only in reading geological history
writing itself before his enchanted eyes, but in interpreting the direction of natural history as a
process that has extra-scientific meanings. In fact, da Cunha’s reading of Rangel’s Inferno Verde
seeks to characterize the style of his colleague’s prose as having succeeded in deciphering both the
intentions of Amazonian nature and its effects on its heterogeneous societies:

Vibra-lhe em cada folha um doloroso realismo, e parece engenhado por uma
idealisação afogueadissima. Alberto Rangel tem a apparencia perfeita de um poeta, exuberante demais para a disciplina do metro, ou da rima, e é um engenheiro addicto aos processos technicos mais frios e calculados. A realidade surprehendedora entrou-lhe pelos olhos atravez da objectiva de um teodolytho. Armaram-se-lhe os scenarios phantasticos nas rêdes trianguladas. (8)

Further, the description of Rangel’s writing expresses the cross-pollination between literature and engineering, and the instability of objectivity as a parameter of vision. The realism that reverberates in each page appears to be “engineered” by an “ardent idealization.” Realism is not exclusively an effect of objectivity neither of literary simulation of reality. This peculiar conception of the processes of writing shows the transformation of literature by technical thinking, and the permeation of the latter by perceptions that somehow challenge technique, such as fantasy and surprise. Rangel, an engineer that adheres to the “coldest and most calculative processes” also has the “perfect appearance of a poet.” This is a remarkable statement, as the “coldest and most calculative processes” coincides with the expression of Amazonian reality at its most wondrous, that is, at the moment when it appears to most challenge representation.

Da Cunha legitimizes Rangel’s, and implicitly his own writings, not by attributing his achievement to mastery of literary form—for which he is too exuberant—but through reference to technical standards of engineering. This reference, or appeal, to engineering is crucial because it evidences how the articulation of technological modernization in the Amazon does not happen only materially, at the level of the manipulation of its geophysical constitution through the construction of infrastructures such as the Madeira-Mamoré railroad. The technological modernization of the Amazon is at work precisely when its environment challenges the constitution of a stable field of perception, which must therefore be safeguarded by appealing to
the “coldest and most calculated technical processes”. Da Cunha’s writings evidence, however, that this is not a unilateral process, as the technical gaze itself is challenged by the very environment it seeks to stably visualize.

The theodolite\textsuperscript{14}, the surveying instrument Da Cunha brings up in the passage, is a rotating telescope for measuring horizontal and vertical angles. The lenses of a theodolite reveal the physical world in a scale that unaided vision cannot perceive, as well as a “fantastic reality.” The theodolite does not disenchant the normative field of vision by exposing it as an appearance, or as a relative product, but re-enchants the observer. Luciana Murari argues that to da Cunha, “[a] engenharia tornava-se uma atividade crescentemente subjetiva à medida que o próprio domínio que ela lograva adquirir sobre a realidade tornava os engenheiros mais idealistas e visionários” (327). Besides the lenses of a theodolite, which simultaneously allow the eyes to see reality, while infusing sight with an expanded vision, the microscope also emerges in his texts, but leads the observer to a remote stage of the geological past:

[o]s dizeres da ciência desfecham num quase idealismo: as análises rematam-nas prodígios; as vistas abreviadas nos microscópios desapertam-se no descortino de um passado muitas vezes milenário; e esboçados os contornos estupendos de uma geografia morta, alonga-se-lhe aos olhos a perspectiva indefinida daquele extinto oceano medievônico [...] (À Margem 4).

The microscope’s technological capacity to contribute to the production of scientific knowledge is

\textsuperscript{14} On the importance of theodolites in geographic surveys, D. Graham Burnett writes, “A synthetic trigonometrical survey—done by a team, composed out of a net of precise triangles measured out over the region by means of a cumbersome theodolite—was always to be preferred where resources allowed” (87).
not what is in question in this passage. In a letter to Artur Lemos, da Cunha confesses he does not have the narrow vision of analysts, “É uma grandeza que exige a penetração sutil dos microscópios e a visão apertadinha e breve dos analistas: é um infinito que deve ser dosado. Quem terá envergadura para tanto? Por mim não a terei” (Correspondências 269). Instead, vision can slide into an indefinite perspective and scientific analysis itself can approximate idealization. Rather than narrowing the observer’s vision to a smaller scale, the microscope “opens the curtains of a millenary past” and of a “dead geography”. Da Cunha’s astonishing statement makes the large and the small coincide on the microscope as a technical device.

To conclude, the coincidence between seemingly contradictory forces such as mystification and scientific knowledge does not reveal a weakness in da Cunha’s intellectual project, but constitutes its strongest intervention. Even if the theodolite and microscope were instruments used in scientific contexts and allowed observation in different scales, the potential they opened to human perception and its understanding of reality still demanded further interpretation, and this is what da Cunha attempts to do in his writings. As Jonathan Crary avers:

What was at stake and seemed so threatening was not just a new form of epistemological skepticism about the unreliability of the senses, but a positive reorganization of perception and its objects. The issue was not just how does one know what is real, but that new forms of the real were being fabricated, and a new truth about the capacities of a human subject was being articulated in these terms.

(91-92)

Along this line of interpretation of the cross-pollination between technique and writing, optical instruments can be said to discipline vision as much as incite wondrous views or deepen epistemological skepticism about observation. As such, they transform the conditions of
perception and production of reality.

The presence of the naturalists in da Cunha’s Amazon writings is characterized by the interplay between a demystifying view of the Amazon and an enchanting one. On the one hand da Cunha acknowledges and carries forward the naturalist ambition of delineating a scientific image of the Amazon and seizing the inner functioning of its physical reality. He relies on naturalist writings not only to inform himself with knowledge about nature but also to orient his perceptions in his travel. This facet of his engagement with the naturalists manifests the desire to stabilize the ontological and phenomenological domains of Amazonian reality, meaning, to fix what Amazonian nature is and to control the subject’s visual and spatiotemporal perceptions and experiences. On the other hand, his philosophical, and even personal, inclinations lead him to reflect on the difficulties of finding a language and an approach that properly captures the strange position the Amazon occupies in natural and human history. At the center of this ambivalent interplay is the instability of the domain of technology in relation to the Amazonian environment, considered to be a realm diametric to that of technological modernization. The deployment of technique – be it in the method of investigation, the language of a scientific discipline, or in the very apparatuses of observation – appears in da Cunha’s writings as both the solution to stabilize Amazonian nature, and the very means of its re-enchantment.

To a great extent, the undeniably philosophical character of da Cunha’s writings grant them a more universal character than the narratives of the English naturalists. The naturalist project’s dependence on taxonomic classification and circumscription to a geographic area turns the naturalist narrative into a register of particulars, of which aspects are observed and described. The technical, monographic, and taxonomic approach to the Amazon, though circulating widely in socio-intellectual spheres in Europe, North America, and Latin America, does not necessarily
make the Amazon itself more *comprehensible* or more conceptually accessible. It certainly makes it more visually graspable.
Chapter 2

Land Sailors of the Madeira and Mamoré Rivers and the Conquest of the Impassable

As he sees Fitzcarraldo’s ship “Molly Aida” casting off from Iquitos in Werner Herzog’s 1982 Fitzcarraldo, the rubber baron Don Aquilino (played by José Lewgoy) asks Molly (Claudia Cardinale), “He’s not going down the Ucayali? Why is he heading upstream? I thought he was going to the Pongo das Mortes”. “You saw it right.” She answers. “Brian Sweeney Fitzgerald is going against the Amazon.” Molly’s playful reply, delivered in the film with a smile, touches the core of the history of fluvial navigation in the Amazon in the nineteenth century. On the one hand, Molly confirms Fitzcarraldo is taking the steamship upstream, contrary to the expectations of the rubber baron who had sold him the steamer and established a partnership with a man who dreamed of an opera house in the jungle. On the other, to go against the Amazon is to not only to confront its rivers and territory, but also to engage with the paradox generated by navigating against the current. The sense of resistance of “going against the current” finds a parallel in sailing and navigational methods in the ancient Mediterranean. As historian Jean Rougé reminds us in Ships and Fleets of the Ancient Mediterranean:

A classic topos in the literature of antiquity is that of marveling over the fact that the same wind may permit ships to sail in opposite directions. But even that does not make all courses possible, and so the big problem raised by seafaring in

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15 Curiously, the Amazon Steam Navigation Company’s The Great River: Notes on the Amazon and Its Tributaries and the Steamer Services refers to the Amazon River as the “Rio Mar” (“river sea,” which is a common denomination) and as the “Mediterranean of South America” (10).
antiquity is learning to what extent a ship could beat to windward and tack—that is, by zigzagging from one side to the other, set a course against the wind. (21-22)

If sailors of the ancient Mediterranean were preoccupied with how a ship could sail in opposite directions—a practical embodiment of paradox, the explorers and sailors of the Amazon need to find orientation through fluvial courses and land routes that are far from being geographically linear and technically mastered. These problems are central in the descriptions of routes, difficult passages, and the challenges Amazonian environments pose to spatial orientation and the sense of direction. The question of orientation is profoundly related to sense, not only spatiotemporally but also narratively. The metaphors we use to describe where actions in a narrative are ‘headed,’ where they culminate and end, are not just tied to notions of time, but to space as well. The narrative of modernity as a progressive development clearly invokes history as a forward-moving process. Yet, the further away we move from the past, the more past there is, the more aged and heavy with time history becomes. The examination of the exploration narratives of the Amazon in the nineteenth century, when cultural-historical events seemed to so easily lend themselves to a progressive reading, makes an analysis of the logical, metaphorical, and spatiotemporal premises of the progressive thesis necessary. Does the textual and visual history of exploration in the nineteenth and early twentieth century Amazon run in one direction, or in more than one at once? Could explorers be retrieving practices that run back to a historical past conceived as primitive or even ‘outside’ history—if not at the margins, as da Cunha suggested? The surface of the river in Molly’s reply, emblematic of the problem of navigation and exploration in the nineteenth and early twentieth century Amazon, registers two directions, upstream for the ship and downstream for the water. On the one hand the banks of the river register a geological history; on the other they registers human history in Amazonian rivers. What emerges between these two? Could the cultural
history of exploration be conceived as a history of friction between these, rather than as a progressive mastery over nature? The emergence of two directions in fluvial navigation raises a logical conundrum that unsettles the linear and progressive historical framework of modernization used to narrate the formation of hybrid infrastructures that include manpower, animal, steam-based, and mechanical technologies of mobility.

In his 1912 *The Sea and the Jungle* Henry M. Tomlinson spends a portion of the narrative describing his encounter with a man named O’Brien. Men like O’Brien were “respectfully” referred to as a “land sailors” in Porto Velho, the emerging early twentieth century town at the site of the construction of the Madeira-Mamoré railroad, by then in its second and final stage (168). Naming boundless men who drift across continents and who do not respect authorities (one of the archetypes of the frontier), the term also brings geophysical regimes together. Jungle and rivers, many of which are of oceanic proportions, give rise to an amphibian explorer; a sailor who navigates the Amazon’s cyclically and often perennially flooded lands. While Tomlinson does not tell the reader anything about the origin of the term, literal land sailors did exist. Many exploration narratives preceding the construction of the railroad show how travelers, traders, and explorers had to carry their canoes and other vessels over land to bypass the rapids and falls of the Madeira and Mamoré Rivers, among others in the Western Amazon. *Land sailing*, the aptly paradoxical term I derive from Tomlinson’s clue, is in fact technically termed *portage*. While the practice of portage examined here is one articulated by explorers situated within a Western technical and pragmatic regime of exploration, who frequently interacted with indigenous experts, ‘technicians’ of mobility, and local inhabitants of the Amazon, the framework proposed here concerns the descriptions of portage in narratives by non-indigenous explorers and travelers. Comparative studies and translations between Western and non-Western epistemic and technical cultures of
navigation in the Amazon are doubtlessly crucial for a more comprehensive history of fluvial navigation and exploration in Amazonian environments.

The portage, or land sailing, of a steamship is the center of action in Herzog’s *Fitzcarraldo*. As shown in the 1982 documentary *The Burden of Dreams* directed by Les Blank, Herzog employed a Brazilian engineer who left the production before the steamer was pulled, as well as local labor force to build an intricate structure to haul the steamship across a hill, thus avoiding a site of impossible navigation: a veritably fluvial ‘aporia’. The Greek word aporia, prominently deployed within Derridean deconstruction, signifies an “irresolvable internal contradiction” according to the Oxford English Dictionary (Oxford Dictionaries). Yet, its classical meanings and usages are more pertinent to the conception of natural obstacles at work in the exploration narratives investigated here than recent theoretical repercussions of the term\(^{16}\). The Greek noun ‘ἀπορία (aporia) means “difficulty of passage (by land and sea)” and “lack of means, neediness, indigence, privation” among others (Montanari 267). As difficulty of passage ‘ἀπορία appears in a context in Xenophon’s *Anabasis* (5.6.10) where the word is related to abundance of means of transportation, “If you go by sea, however, you can coast along from here to Sinope, and from Sinope to Heracleia; and from Heracleia on there is no difficulty either by land or by water, for there are ships in abundance at Heracleia” (399). That is, a passage is not ‘aporetic’ because there are several ships that can convey the traveler. The sense of privation of the word ‘ἀπορία is paramount, since explorers who ventured beyond towns, ports, or other infrastructures in the nineteenth and early twentieth century Amazon had to assemble expeditions that were technically rudimentary, and

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\(^{16}\) For a deconstructive use of the term in relation to the role of the Amazon in modern conceptions of Brazilian cultural identity see Raul Antelo’s “La aporía amazónica” in *Ficciones somáticas: Naturalismo, nacionalismo y políticas médicas del cuerpo*. 

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despite the perception of animal abundance, hunting and fishing were not always plentiful activities. Technical and logistical limitations on instruments, cargo, personnel, vessels, supplies, etc., made passages difficult.

The variant ἄπορος means “lacking a passage, impassable, impossible to traverse,” and is used in this sense in Plato’s Timaeus (25d), for instance, and Xenophon’s Anabasis (2.4.4) (Montanari 267). In Anabasis (2.4.4) ἄπορος is used in a context that involves the very construction of an obstacle, “Or perhaps he is digging a trench or building a wall somewhere to cut us off and make our road impassable” (135). The usage where aporia is the result of digging or building is crucial for the understanding of how the construction of a railroad as a means of bypassing a natural obstacle actually builds new obstacles, as will be demonstrated in the fourth chapter. The falls, rapids, and other obstacles in the diverse and complex fluvial system of the Amazon constitute aporetic landscapes, where navigation and exploration are practices of discovery of zones of impossible or difficult passage. These fluvial and terrestrial formations exist as natural entities while becoming obstacles by virtue of the interaction between technologies of transportation such as canoes and steam engines, and the environment. As much as the language of exploration narratives consistently makes use of terms existing in a semantic field of conquest and defeat, force and exhaustion, this analysis is not interested in reconstructing the ideological aspects of the history of fluvial navigation, but in honing the acts and perceptions of expeditions in face of obstacles, and the effects of technologies of mobility that are involved in exploration – be they mechanic, steam-based, or even animal. The definition of technology proposed here is intentionally ample, and emphasizes the function of entities as technologies that mediate human action and the environment, rather than a definitive period or stage of technology (such as modernity).
In *The Optic of the State: Visuality and Power in Argentina and Brazil* Jens Andermann proposes that:

Nature turns into a frontier once it is reached by a technological and symbolic apparatus that has removed the obstacles posited in and by space. [...] Frontier expansion, then, created new forms of central and marginal space and relations between them, tearing down spatial barriers to accelerate and intensify flows of merchandise and labor power, but also of discourse, symbols, and images. (127)

Andermann incisively conceives how the expansion of frontiers makes possible new relations between centers and margins, which, by virtue of the very expansion, require that movement be accelerated so that distances gained do not become obstacles. That is, if the expansion of the domain of mobility and transportation with steam engines in the nineteenth century allowed longer distances to be traversed in less time, it also renewed the sense of what unreachable spaces were. If some spatial barriers are torn down, others are not, and new ones are discovered. Andermann’s conception of how nature turns into a frontier emphasizes the success of technological and symbolic apparatuses, which is never guaranteed in aporetic environments, as evidenced by the many exploration narratives of the nineteenth and early twentieth century Amazon. The ambivalent infrastructural status of frontiers as zones where exploration and engineering coexist without a guaranteed outcome requires a historical framework where modern technology (which Andermann has in mind in his analysis) is not conceived as an apparatus for the removal of obstacles. Environmental context, therefore, matters when we are trying to reconstruct the cultural history of practices such as travel, exploration, narrative and pictorial representation of landscapes. Steamships docked in nineteenth century Rio de Janeiro may more smoothly fit the predominantly urban understanding of technological modernization. But what
about steamships and other vessels in environments considered to be at the margins of the ‘civilized’ world?

Fig. 2. “Ascending the Rapids,” plate showing the ascent of rapids on the Tapajós River; *Brazil, the Amazons and the Coast*, by Herbert H. Smith. New York: C. Scribner’s Sons, 1879, p. 251. Print.

The broad thesis of this chapter is that the confrontation between vessels, steam-based and otherwise, and the Amazon’s heterogeneous environments –territories where land and water entertain a profound complicity– cannot be comprehended as a linear process of technological mastery, removal, or progression. The repercussions of this argument are developed in two sections. The first section proposes that the advents of the railroad and the steamship did not disenchant the geographic imagination of the Amazon, despite the fact that they made new ways of perceiving and articulating space possible. The section offers an analysis of how the aporetic
qualities of the traversal of natural obstacles concern explorers, and traces the practice of portage as a crucial axis of technical development in the Amazon. The second section continues this analysis, but with a focus on the visual and textual language of aporetic passages. It analyzes paradigmatic images, either made by the explorer-narrators themselves or by other members of their expeditions. The chapter draws on instances in visual and textual representations of the Western Amazon that shed light on the distinct roles of technology in exploration and infrastructural projects. Many of the representations and descriptions of the Madeira and Mamoré Rivers, and the Western Amazon from the mid-nineteenth century onward describe these landscapes prior to the construction of the Madeira-Mamoré railroad. These narratives show the perceptions and experiences of explorers over terrains where the project was to be developed. The Madeira and Mamoré Rivers were navigated in explorations that extended over other interconnected rivers and regions in the Western Amazon. The territory covered by these narratives is vast; their itineraries range between the Ecuadorian and Peruvian Andes, the Putumayo, Mato Grosso, and the Madeira-Mamoré region between Brazil and Bolivia.

i. Aporias of Mobility: the Modernity of the Rudimentary and the Obsolescence of the New

The perception of the landscapes of the Western Amazon as geographic domains to be discovered, tested, and perhaps conquered through technological mediation and aid has a long and intricate history. Technologies of mobility and observation did not only create novel conditions of visualization and framing of these landscapes, but also altered the stakes of the interaction between explorers and their expeditions, and the environment. In *Recollections of an Ill-Fated Expedition* (1907), Neville Craig, an engineer who joined the 1878 Collins Expedition to begin the
construction of the Madeira-Mamoré railroad in Santo Antônio, considers the alluring, or rather, *enchanting*, effects of representations of the Amazon from expeditions prior to the construction of the Madeira-Mamoré railroad. Thomas Collins was the head of the railway contractors P. & T. Collins along with his brother Philip, and with him “[h]ad been identified with almost every important piece of railway construction in Pennsylvania that had been undertaken during the previous twenty-eight years” (75). As Craig describes, they built the old Portage Railroad, the Philadelphia, and Erie Railroads, among other projects (75). Thomas Collins’ technical experience and reputation as a reliable contractor are taken by Craig to be indications of his ability to resist the alluring representations and dubious images of the Amazon:

He alone, of all Philadelphia, was equally indifferent to glowing descriptions of “the Garden of the Lord” and to the somber shadows thrown over Colonel Church’s enthusiasm by some pages in the reports of Gibbon and Keller. If he took the trouble to compare the statements, he was probably convinced, as were many others, that one side or the other was drawing upon their imaginations for their facts and that the imaginative individuals were just as likely to be Gibbon and Keller as Colonel Church and his associates. (75-76)

What does it mean to be indifferent to both “glowing descriptions” and “somber shadows,” and *still* accept the undertaking to go to that region of the Madeira and Mamoré Rivers at the border between Brazil and Bolivia? Craig’s estimation of Thomas Collins’ sobriety and discernment in relation to such descriptions by Gibbon and Keller casts the railway businessman as a predominantly pragmatic entrepreneur. The railroad contractor comes to the fore as someone who will inspect and observe the geographic and physical properties of the environment and its topology from a perspective sterilized from wonder or affective powers. If anything, Craig’s
reservations as a narrator of the Collins Expedition and first stage of the construction suggest that the visionary and imaginative individual is Colonel Church himself. Andermann pertinently observes that, “In fact, if improvement and progress now depend on the distributive reason of the engineer, his method consists in a kind of ecological hermeneutics, in deciphering the immanent intention that is already codified in the natural environment itself” (141). Explorers and engineers observe the landscape and engage with the environment to hone its “intentions” and describe them as plateaus or topologies for modification, be it for the purpose of immediate traversal or to envision modern technological projects. However, Craig’s hermeneutic suspicion concerns more than treacherous terrains, as it raises questions about the imagination of those who have already explored, observed, and described them. The suspicion or doubt regarding the true character of the lands of the Madeira and Mamoré is not, however, resolved in this passage. Ultimately, the process of collapse of the 1878 attempt to construct the railroad, riddled with biological, logistical, and socio-cultural factors, reveals the enchanting powers of an imagined geography permeated by technological modernization.

In “La Conquête de l’inutile. Les Géographies Imaginaires de l’Eldorado,” Catherine Alès and Michel Pouyllau trace cartographic and intellectual production surrounding El Dorado in the colonial Amazon, and argue that “Les géographies imaginaires construites autour de l’Eldorado constituent un sujet inépuisable qui a dépassé le cadre de la pensée ibérique pour entretenir le mythe des terres promises” (273). More than the idea of promised land, the inexhaustibility of resources of the imagined geographies of the El Dorado furnishes popularized images of the

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Amazon. In the nineteenth century, the imagined geographies are built on modern technological scaffolds and on the premise of inexhaustibility materials for scientific and technical surveys. The threats posed by the proliferation of imaginary geographies do not end with the shift to a steam-based technological regime. In fact, the promise of technological modernization amplifies the legacy of projections of the colonial Amazon and rearticulates them. Rather than demystify the Amazon, steam engines intensify utopian and modern-technophile dreams about Amazonian environments as horizons of technological trial.

Drawing on Pierre Jourde’s idea that, “Un monde imaginaire est un ensemble spatial complexe identifié par des toponymes en majorité inventés, à condition que cet ensemble forme une structure autonome nettement détachée de l’espace connu et exploré au moment où écrit l’auteur,” Alès and Pouyllau’s framework allows us to see how, despite the fact that previous explorers had experienced and written about the aporias and illnesses of the Madeira-Mamoré region, the geography or world imagined by the Madeira-Mamoré project was one altogether detached from the pragmatic demands of the environment (273). If Thomas Collins was indifferent to glowing pictures and somber shadows alike, Colonel George Earl Church emerges as the more problematic figure in the narrative of the 1878 Collins Expedition to the Madeira and Mamoré Rivers. Craig described Colonel Church as an American Civil War colonel, civil engineer, and explorer who thoroughly knew South America (36). Moreover, “The negotiations with the two

18 While this conjecture is beyond the scope of this chapter, it is worth noting the allegorical centrality of the railroad at the American frontier as a socio-cultural model and attraction in theme parks such as Disneyland. It is as though the intermittent and provisional status of frontiers, in their excess of promises, were more easily rendered into imaginary worlds than actually operative infrastructures of mobility. For an excellent exploration of the topic, see Sarah Perry’s “Frontierland,” in *Ribbonfarm*. 6 Aug. 2015. Web. 15 Aug. 2015. For an example in contemporary popular culture, see Michael Crichton’s 1973 *Westworld*, now adapted as an HBO series.
governments immediately interested in the enterprise required that he should be a gentleman of high social standing, and, in order that his representations might carry weight in the great financial centers of the world, it was essential that he be well-known as man of high personal character and unflinching integrity” (36). While Church’s social standing and capacity to leverage international forces in favor of the railroad project position him as a harbinger of civilization, Craig also casts Colonel Church as a man whose will was thoroughly fueled by physical force. Following the description of Thomas Collins’ discerning and skeptic character, Craig writes of Colonel Church, “His whole life had been one of strenuous action. He was a big man physically, with a heart proportionate to his frame, and, like many big men, seemed to have a feeling that mere physical energy would overcome every obstacle” (76). Interestingly, it is precisely Colonel Church’s “life of strenuous action” that seems to incite the engineer-narrator’s own doubts about whether the Madeira-Mamoré railroad was feasible to begin with. To Craig, the overwhelmingly physical quality of Colonel Church’s life is what makes him vulnerable to the enchanting promises of wealth and technological modernization at the border between Brazil and Bolivia. It is as though Colonel Church’s life of action, be at the American Civil War or as an explorer in South America, were both the source of the possibility and the doom of the railroad.

Colonel Church embodies civilization’s barbarian propensities, visible in frontiers throughout history. Craig’s portrait of Colonel Church brings to the fore an important aspect of the status of civilizational forces at the socio-technical and navigational frontiers of the Amazon. The frontier does not demarcate the domain of civilization and barbarism as opposites, but the realm where their entanglement is most clearly perceived. The frontier is where the displacement of social and technical assemblages to an environment yet to be explored and engineered creates “aporetic” passages, projects and expeditions that become feasible in relation to the very
impassability of a natural obstacle. The accounts of these passages and expeditions engender suspicion regarding the accuracy of the descriptions, and in so doing demand empirical confirmation, nothing less than a process of geographic critique aimed at discerning between a fabled geographic imagination, and intelligence or information as modes of classifying data that is pragmatically relevant and useful in navigation and exploration.

The process of discernment between imagined and real geographies, reliable sources and mythical ones, is what is behind the “somber shadows thrown over Colonel Church’s enthusiasm” by Lieutenant Lardner Gibbon, of the United States Navy, and German engineer Franz Keller’s reports of the insalubrious, malaria-stricken, and burdensome environs of the Madeira and Mamoré Rivers. Under the orders of the United States Navy, Lieutenants Lardner Gibbon and Lewis Herndon were sent on an expedition of exploration of the Amazon Valley in 1851. Reaching Tarma, in Peru, they split courses. Lt. Gibbon was to traverse the Madeira and Mamoré Rivers, among many others, with a small party by means of mules and canoes. Lt. Herndon’s account of his journey, which constitutes the first volume of *Exploration of the Valley of the Amazon Made Under the Direction of the Navy Department*, first published in 1853, has an introductory commentary on the colonial and modern sources of travel and exploration in the Amazon, which he consulted in Lima and introduced in his own accounts. The lieutenants, as many explorers, were therefore familiar with colonial accounts on the Amazon. The expedition had many purposes, ranging from a report on the navigability of the branches and rivers of the Amazon valley, the socio-cultural characteristics of its populations, potential for cultivation and settlement, and mineral resources (24-25). Lt. Gibbon’s account forms the second volume and describes the challenges he faced navigating the Madeira and Mamoré Rivers, and traversing its rapids and falls. More important, the naval explorer’s narrative evidences the emergence of a conception of
navigability that, though effectively mediated by canoes, anticipated and estimated navigation by steamships in many of the rivers through which he traveled. The estimation of the feasibility of steam navigation on the Madeira and Mamoré Rivers is crucial for the distinction between technologies of mobility as what allow the landscape to be framed by the empirical reproducibility of the journey, and its transformation into a topos or geography that incites the modern technological imaginary.

The entire traversal of the Mamoré and Madeira Rivers, not to mention other smaller branches, fleshes out a language to describe and distinguish aporetic qualities. After passing Guajará-Mirim falls on the Mamoré River, which he deemed “passable” by a steamboat, Lt. Gibbon reaches the Guajará-Açu, where “[a] steamboat could pass neither up nor down” and “[n]avigation is completely obstructed” (282). Here, aporias emerge in the sense of the difficulty or impossibility of passage through a terrain. If ‘falls’ and ‘rapids’ denominate the topographic expression of the river, the crew of the expedition and the canoes are the measures of what constitute an aporia, and what kind of difficulty of passage is at hand for explorers. “Pedro took us to the upper end of a path in the woods, on the Brazil shore, where Don Antonio had transported his cargo overland, three hundred and fifty paces, to the foot of the falls. His large boats we hauled through the water by means of strong ropes rove through large blocks” (282). Large boats and blocks, ropes, the pace (a ground measure widely deployed in the military), and the crew itself all play a role in the articulation of a system of forces that gives rise to a certain type of aporetic experience and perception of natural obstacles. The interaction between technologies of mobility gradually transforms the Madeira and Mamoré Rivers into realms of an expedition’s action. In this domain, where technologies and environments impact each other, the aporetic qualities of natural obstacles are shaped according to navigability and require particular solutions in the search for paths that
give continuity to movement. That Lt. Gibbon continues to ‘project’ a steamship on the falls and address the navigability of the waters is evidence of the intermittence of technologies of mobility as ‘removing’ or ‘surpassing’ natural obstacles. A steamship is not always the best vessel for a certain course or environment, regardless of its novelty or currency as a technological artifact. It can, however, allow the assessment of a river as an abstract technology of measure. Natural obstacles, therefore, also function as indexes of the functional inconsistency of technology, which places the thesis of modern technology as a means of dominating nature under question. The transportation of the cargo and the portage of vessels themselves, equally dependent on technical solutions and methods that address different portions of the rivers, is a pertinent axis of action in the exploration narrative.

At other portions of the traversal of the waters of the Madeira and Mamoré Rivers, portage is the only aporetic means of traversing fluvial obstacles by means of land, “Arriving at the head of “Giráu” falls, we find the true falls of the Madeira. They are short, but the rush of waters through a confined space, between immense masses of rock, baffles large sized vessels, and prevents their passing either up or down the river. Don Antonio transported his boats over the land here” (296). In encountering the Girau falls, traders such as Don Antonio meet zones of impossible transit and devise solutions that address the localized characteristics of the obstacles that emerge in this encounter. While Lt. Gibbon’s account was used to provide evidence for the pertinence of a modern technological solution to the transportation of goods from Bolivia to the Atlantic, the solution conceived by the American Navy lieutenant is surprisingly ‘simple’ in comparison to a railroad project with a complex financial structure:

From the Pedreneira falls to the foot of San Antonio, our direction was about east-northeast, a distance by the river of one hundred and forty miles, which makes the
space not navigable two hundred and forty miles. A road cut straight through the
territory of Brazil, from San Antonio falls, in a southwest direction, to the navigable
point on the Mamoré, would not exceed one hundred and eighty miles. This road
would pass among the hills, seen, from time to time, to the eastward, where the
lands, in all probability, are not overflowed. On a common mule road, such as we
find in Bolivia, a cargo could be transported in about seven days from one point to
the other. Don Antonio Cardozo was five months struggling against these
numerous rapids and rocks to make the same distance, with his cargo in small boats.
We have been twelve days descending the falls, which is considered by Brazilian
navigators fast travelling. (302)

According to Lt. Gibbon’s estimation of distances, a “common mule road” would shorten the
duration of the journey. The railroad was, therefore, not the only solution to the natural obstacles
of the Madeira and Mamoré Rivers conceived by explorers that traveled through the region. Yet,
there is a considerable difference between how the aporia of mobility is approached within
different modes of technical thought. While Lt. Gibbon’s narrative definitely expresses the
appreciation for the affordances of the technologies of the nineteenth century, the proposal of the
mule road raises questions about whether the characterization of the railroad as an engine of
‘modernization’ is not in fact misleading. If we take modernization to refer to the pertinence of a
technical way of thinking in regards to a material or physical obstacle, the Madeira-Mamoré
railroad appears not as a modern solution but as one that manifests a profound rift between the
 technological imagination and the environment empirically described by explorers. This is why
the modern conception of technology is too narrow and unilateral of a framework to narrate the
history of fluvial, land, and aerial explorations in the Amazon, and the Amazon’s own environmental challenges to the development of these technologies of mobility.

Craig’s questioning of whose imagination is to be regarded with suspicion offers a powerful hermeneutic key to unravel the genealogy of technical perceptions of the landscape of the Madeira Mamoré Rivers precisely because the engineer-narrator himself experienced the toil of the expedition to that region and the challenge of building the railroad in 1878. Again, Lt. Gibbon did assess the feasibility of steamships in the rivers he traversed, since doing so would communicate information of interest to the United States Navy. However, Lt. Gibbon’s relatively modest proposal expresses mostly a concern with movement and less with the articulation of the landscape through the lens of modern technology. If the point is to find passage for the impassable, a mule road will do. The railroad, therefore, emerges as a vision of technological excess and technical enchantment. In attempting to compress the traversal of space and time to its fastest possibility, the supporters of this solution ultimately bring about a veritable ‘time out of joint’ to this region of the Amazon, as though the concern were less with freedom and ease of movement and more the railroad as a technological possibility, rather than a necessity.

Another engineer who witnessed the early stages of the construction of the railroad, Edward D. Matthews, manifests a nuanced attitude toward both the project and the questions of navigability and mobility at large. In the preface of Up the Amazon and Madeira Rivers Through Bolivia and Peru (1879), he writes that “[t]he resumption of the railway works has led me to think that some interest would attach to a description of a route across South America that has yet been but little travelled over” (vi). That is, the construction of the railroad does not displace other routes across the same territory nor make them appear obsolete. Matthews’ narrative balances the “adventurous spirits in search of new worlds to conquer” with an interest in the reproducibility
of the journey (viii). He also shows his concern with mobility, “My object being to describe a route of travel it would be out of place to remark at length upon the commercial importance of the enterprise of the Madeira and Mamoré Railway” (24). Matthews’ narrative develops descriptions and guidelines that show the methodical approach of the explorer and his technical dexterity. Similarly to Lt. Gibbon, he describes the portage of vessels over land and the rope system that allows vessels to navigate over fluvial obstacles. He advises readers and potential travelers:

> It is unwise to attempt to make either the upward or downward journey with single embarkations, because at, at least three of the rapids, the canoes have to be totally unladen and dragged over the portages, which invariably have to cross a small but steep hill, and one crew is quite unable to haul the canoe over any one of these hills. (33)

Bypassing the rapids is a concrete and localized task that demands socio-technical coordination and that leverages forces that are at hand. Aporetic qualities emerge in the abundance of embarkations vs. a ‘precarious’ or understaffed crew; in the characterization of difficulty (“invariably”), and in the actions that make the impassable passable (unloading, dragging, hauling). The problem of orientation –upward or downward– is also crucial, as not having a single stable or reliable path makes the aporetic qualities of the environment ominous.

That the advent of the steam engine as a technology of mobility does not just alter the conditions of perception of the landscape is evident. What is less evident when technological modernization is conceived as a process of progression, disenchantment, or removal of natural obstacles is the fact that the implementation of infrastructures generates a series of new obstacles and that the technology at hand can be obsolete in relation to the demands of mobility that emerge from an interaction with the terrain. Once it is grasped that the modernity attributed to steam-
based technologies is not synonymous with relevancy, we see that the railroad was always already old or senseless in that environment, despite the fact that it embodied direction in the unilateral sense of progress. On the other hand, if the conception of technology is expanded from its modern definitions to mean technical relevance, contemporaneity or capacity to establish hybrid infrastructures (mechanic, steam-based, animal, etc), rather than sheer acceleration, we see that technologies that are considered obsolete or rudimentary are often more efficient than newly created advents. The railroad did not just attempt to modernize the Amazon, but the Amazon revealed the railroad’s ultimate inapplicability. It revealed the railroad and the steam engine to belong not to the domain of technical expertise or technological mastery, as evinced in the explorations of Lt. Gibbon and Matthews, but to the domain of barbarism as that which is foreign or extraneous. This barbarism is not internal to the Amazonian frontier, as conventionally seen in discourses of nature and culture in Latin America, but internal to modern technology’s ambivalent potential for obsolescence, intensified expenditure, and excessive abstraction (i.e. an excess of planning in relation to empirical and practical knowledge) that coexists with the impetus for logistical efficiency, acceleration, and spatiotemporal compression in general.

Hence the truly modern technicians of mobility of the Madeira and Mamoré: “A crew of not less than ten peons and a captain is required for a canoe laden with, say three tons, and the Bolivian Indians of the Beni are the best paddlers or ‘marineros’” (Matthews 33). It is not that the native inhabitants and explorers of the Amazon ‘still’ use canoes, rather, they have already been using it. Non-native explorers definitely benefited and learned techniques of mobility and routes from indigenous experts. The multitude of socio-technical assemblages gathered as expeditions can be conceived as veritable patchworks between technologies that are current, contemporary,
and co-spatial with the demands of mobility that emerge amid the aporias of the Madeira and Mamoré Rivers.

Fig. 3. “Garitea, or a Traveller’s Canoe, River Madeira,” from Edward Davis Matthew’s *Up the Amazon and Madeira Rivers Through Bolivia and Peru*, 1879, p. 33.

Decades later, when the railroad is in its last construction stage, Tomlinson questions the cartographic reliability and the expansion of the mobility grid by steam engines. He writes, “As a reasonable being you would prefer to believe the map; and that clearly shows the only way there (when the chance comes for you to take it) must be by canoe, a long and arduous journey to a seclusion remote, and so the more deeply desired” (124). It should be noted that Tomlinson’s
perspective, being that of a journalist and intellectual from early twentieth century London, displays some eschewed ideas about exploration as a mode of travel. Similarly to Euclides da Cunha, who comes from the city as an official in a topographic expedition and desires a ‘desert’ he never really explores, Tomlinson himself does not go far beyond the environs of Santo Antônio and Porto Velho, the two frontier posts and emerging villages of the Madeira-Mamoré railroad. It is precisely because both of them do not go far that their texts at times express a stereotypical perspective on what not relying on steam engines or major routes entails. Tomlinson continues:

It certainly hurts our faith in a favourite chart to find that its well-defined seaboard is no barrier to modern traffic, but that journeying over those pink and yellow inland areas, which should have no traffic with great ships, a large cargo steamer, full of Welsh coal, can come to an anchorage, still with many fathoms under her, at a point where the cartographer, for lack of place-names and other humane symbols, has set the word Forest, with the letters spread widely (124).

An otherwise incisive narrator, this passage nevertheless shows some of the shortcomings of the traveler-writer who is confident about his position within modernity. While it is true that by the 1910s steamships had already been navigating the waters of Amazonian rivers for over four decades, Tomlinson leaves aside the fact that the rapids and falls on the Madeira and Mamoré continued to forbid continuous transit by steamers. If steam engines expand the mobility grid, they only afford comprehensive and seamless transit and movement as ideals, because in practice the arrival to remote areas necessarily depends on a hybrid technological infrastructure (canoes, mules, steamships, etc), and on a patchwork of socio-technical assemblages that address the local demands of each terrain.
It is also compelling to consider the ambivalence of his gesture as a traveler who comes to Porto Velho on a steamer. He at once undermines canoe-based traveling as the “[m]ore deeply desired” means of journeying to a remote area and assumes that the presence of the steamer carrying Welsh coal disenchants romantic hopes and ideas. As the following chapter demonstrates, this attitude is not consistent in *The Sea and the Jungle*, as Tomlinson’s description of the oceanic portion of his journey manifests an enchantment for and by technology. He does, however, grasp a crucial entanglement in the geographic imagination informed by steam technologies. The steamer’s navigation of waters that “should have no traffic with great ships” coincides with a cartographic reduction of that region of the Amazon, for which there were maps, to the word “Forest”. The disenchanting gesture, here, would be to affirm the existence of maps and routes – albeit fragmented and often unreliable – rather than perpetuate the myth of an uncharted wilderness now penetrated by a steamer. What we see is the converse, namely that the imaginary and representational dimensions of modernity (in the sense here questioned, i.e. sheer acceleration and progressive technological development) are blown out of proportions by a distorted evaluation of where technology can go and what it can do. Maps showing geographic details and exploration narratives offering empirical descriptions are encompassed within “Forest,” which paradoxically emerges as a mythical realm in the imagination of the modern traveler. Hence the suspicion concerning Colonel Church’s enthusiasm: the man who thoroughly knew South America was also the one who supported a project that existed between the feasible and the fabled.

Another nineteenth century narrative contrasts the technical sensibility and empirical sobriety of Lt. Gibbon and Matthew’s exploration narratives of the two rivers. German engineer Franz Keller, one of Craig’s suspects, is commissioned to explore “[t]he Madeira River, and to project a railroad along its banks where, by reason of the rapids, navigation was rendered
impossible” (v). Keller’s 1867 commission to travel across and observe the landscape of the Madeira and Mamoré Rivers as an environment that can potentially accommodate the infrastructure of a railroad does not prevent the narrative from providing a substantial engagement with other aspects of Brazilian society and imperial development in the nineteenth century. Keller’s The Amazon and Madeira Rivers: Sketches and Descriptions from the Note-Book of an Explorer (1874) discusses the abolition of slavery, offers an argument for German settlement in Brazil, and provides descriptions of indigenous tribes and camp life, also described in Lt. Gibbon and Matthews’ accounts. Keller’s father, who is also part of the expedition, had constructed the macadam road Estrada de Rodagem União e Indústria from Petrópolis to Juiz de Fora between 1855 and 1862 (16). Keller fils was an engineer immersed in the problem of communication and transportation posed by Brazilian geography. While steamships compressed the duration of the journeys along the Brazilian coast, fluvial navigation and mobility across the interior presented considerable challenges to economic and geopolitical coordination.

In terms of its commitment to the project of technological ‘modernization’ by means of the railroad, Keller’s narrative illustrates the instability of the distinction between steam-based technologies as means and as triggers of the rearrangement of the spatiotemporal dimension of movement across a landscape. Keller’s The Amazon and Madeira Rivers shifts between projections that are confident of the modern technological capacity to bridge communication and mobility between remote and metropolitan areas, and a pragmatic assessment of the considerable costs and obstacles that the construction of the Madeira-Mamoré railroad will produce. In the preface of his narrative he casts an enthusiastic projection over the changes that a railroad linked to steamships will bring to the region:
Soon, however, there will be no need for well-equipped expeditions to visit these outposts of *Ultima Thule*. Comfortable steamers from Liverpool will convey the tourist, bent on a trip, to Pará in eighteen days. In seven days more he can be at the mouth of the Madeira; and in another week’s time he may get to the first rapid of Santo Antonio, whence, at no very distant period, the locomotive will hurry him to the magnificent forests, which we could reach only after a troublesome voyage of three months duration, counting from the mouth of the Madeira. (vi)

While mule and canoe-based transportation prove to be efficient, albeit arduous, means of mobility and communication between areas that are not navigable by steamships, Keller discards these “well-equipped expeditions” as though they were obsolete, while in fact, they remain vital to the region, as later narrators such as Matthews and even Tomlinson will show.

The railroad promises to replace the physically demanding effort of the explorer for mobility with steam engines that create non-aporetic paths for tourists. His conceptions of the transition between mechanical and steam-based technological regimes is abrupt. Yet, it comes across as a smooth transition in the passage above, as though the spatiotemporal convenience of recurrent schedules could be seamlessly implemented in the Madeira-Mamoré region. Long expeditions and slow communication give way to the compression of a “week’s time” on a steamship and the locomotive’s shortening of the journey to a non “distant period”. The forest itself can finally be observed in its aesthetic splendor from “comfortable steamers”. Even the Amazon Steam Navigation Company’s 1904 *The Great River: Notes on the Amazon and Its Tributaries and the Steamer Services* tells the reader that, “The long projected railway to avoid the costly and dangerous transport through the rapids, which has on several occasions been taken in hand and then abandoned, seems likely to be realised in the near future” (59). Three decades
separate Keller’s projection of a touristic mode of travel in his 1874 publication and the early twentieth century prototype of a ‘travel guide’ in the Amazon. As described in the first chapter, the Amazon Steam Navigation Company acknowledges that tourism is still a very incipient possibility (11).

Fig. 4. “Halt Under a Giant of the Primeval Forest (Madeira)”; from Franz Keller’s *The Amazon and Madeira Rivers: Sketches and Descriptions from the Note-book of an Explorer*, 1874, p. 73.

It is curious, therefore, that in conceiving the replacement of “well-equipped expeditions” with steamers and rail, the pictorial work in Keller’s narrative aesthetically emphasizes moments of rest such as the one in fig. 4. In invoking a remote past, the “halt under a giant of the primeval forest” at the Madeira River shows that if Keller the engineer may long for a railroad, Keller the
explorer longs for an experience of the forest as a locus of origin, as a place where nature’s ancient stages are still visible and present. That is, as a place whose spatiotemporal dimension is diametric to that of the steamer and railroad. In this narrow and vertical space of tree domes and dense vegetation, we see the group of explorers enjoying the halt in a rudimentary setting. The sky is not visible from the picture. The image inspires the sense that time, too, has stopped, and that the explorers themselves may not know how long they lingered at the margins of the river. The need for an experience of the primeval shows the persistence of a conception of travel and exploration that does not necessarily lead to the technological imagination of future infrastructures. In such instances, Keller continues to promote “well-equipped expeditions” as a technically efficient, but more important, as affording an experience of nature and the landscape that also transport the explorer to a different age.

Keller’s statement that “there will be no need for well-equipped expeditions to visit these outposts of Ultima Thule” invites the distinction between exploration and tourism as modes of travel in late nineteenth and early twentieth century narratives. To Keller, the explorer seems to have no option but to resort to “well-equipped expeditions,” which are negatively evaluated by the author as a symptom of civilizational and technological stagnation. Yet, the engineer-explorer, similarly to Tomlinson in the early twentieth century, believes that the establishment of thorough means of communication and transportation in remote areas is inevitable. The almost religious confidence on technology’s capacity for an absolute and smooth circumspection of the antipodes assumes that exploration is a mode of travel that is historically contingent precisely because it is fulfilling a necessity in the absence of another means. Exploration is a mode of travel and engagement with the landscape that precedes and yet persists throughout the technological articulation of landscapes. The explorer is an agent of mobility that claims some autonomy from
infrastructural support and navigability by recurrent means of transportation, yet, he must articulate efficacious technical solutions in face of necessities that emerge out of the interaction between the expedition and the environment.

From the perspective of technological modernization as a progressive and linear process of substitution by a more spatiotemporally efficient technology of mobility or observation, exploration is just a more primitive stage of development. It is simultaneously a necessity in the absence of trains, airplanes, or steamships, and a superfluous burden in their presence. The explorer, far from being an obsolete figure, remains operative thanks to his technical relevancy and capacity to address aporetic qualities and obstacles as they emerge in the landscape. His historical vitality is also partially derived from the paradoxical development of technology, which generates limits that the explorer aptly attempts to cross and gain autonomy from. If anything, exploration is simultaneously a product (not intrinsically a lack of) and a condition of technological expansion. The unilateral assertion that natural obstacles are overcome by modern technologies is complemented by the fact that technological limitations are surpassed by exploration. This is not comprehensible by the scheme of dialectics, in the sense that one excludes the other or replaces the other, but can be understood as a simultaneous process or as a paradox.

Contrasting Keller’s 1874 projection of a future of fast and comfortable travel to the Madeira and Mamoré region, Colombian diplomat and writer Santiago Pérez Triana’s preface to Miguel Triana’s Por el sur de Colombia: excursión pintoresca y científica al Putumayo (1907) challenges the reliance on modern technologies of mobility. Pérez Triana writes that the “exceptionality” of Triana’s exploration lies in the fact that it was done in a “primitive form” while taking place in the twentieth century –an age of “science and steam-based locomotion” (xix-xx). The first parts of Pérez Triana’s preface offers metaphysical reflections on traveling, where the
author portrays the “primitive traveler” as one who travels on foot and has an intimate relation with nature (vii-viii). Instead of describing the absence or scarcity of steam engines as a mere symptom of Colombia’s delay in technological modernization of remote territories, Pérez Triana transforms it into an ideal. That there would be considerable material and technological challenges to the development of infrastructures for steam engines in the region is definitely important to both Pérez Triana and Triana, but to the former, what matters is the independence of traveling from changeable methods and its endurance as a living account (viii). If today we have “ferrocarriles eléctricos y de vapor, barcos de vapor que cruzan las aguas, y ya nos sentimos próximos al día en que podamos, como las aves, atravesar los espacios del aire” the audience or reader should be able to find the essence of traveling and experience it herself (ix-x). This conception of remote or essential traveling, arguably a philosophical and literary cliché, is important precisely because of how unapologetic it is about the incitement of the imagination by travel narratives. As Lesley Wylie shows, “The emotive language of Pérez Triana’s introduction reveals the importance of the Putumayo in the national imagination at the turn of the century” (64). Pérez Triana’s appraisal of Triana’s literary merit also evidences that what was at stake was not just the deployment of expeditions to assess the viability of routes and modern infrastructure, but the description of landscapes as accessible to the imaginary and the delineation of a body of travel literature (Wylie 65). Pérez Triana’s preface argues that the accessibility of the imaginary to a landscape can be accomplished without the mediation of modern technologies.

Pérez Triana attempts to show how Triana is an altogether different kind of traveler, one who does not avail himself of well-equipped expeditions such as Livingstone’s19 (20-21). “El señor

19 Recall that Euclides da Cunha had invoked Livingstone’s “British moves” when he described his desire to enter the “wild desert” of the Amazon (Correspondência 266).
Triana emprendió el viaje a pie, con muy escaso acompañamiento, a la cabeza de una expedición minúscula y con una positiva ración de hambre en materia de víveres” (21). The technical and material precariousness of Triana’s expedition is what grants it value. It is on the simplicity of the expedition’s resources that Pérez Triana anchors his rhetoric of authenticity in travel. Pérez Triana thus leverages the aporetic difficulties and scarcities of Triana’s expedition as a basis for a conception of traveling that transcends technological changes. The displacement of value from the technical and technological mediation of mobility to the human and animal body as a less mediated and more direct means of transportation is crucial to Triana himself. The praise of bodily effort preemptively redeems the territory and the nation-state’s incapacity to reach the farthest areas of Colombia with modern technological infrastructures. Discussing “high and low lands” and the culture of mobility in the surroundings of the Juanambú River, to the north of Pasto, Triana writes, “El auxilio de la civilización del mundo exterior le llega al montañés al cabo de siglos y a lomo de buey. Y, sin embargo, ellos son los poderosos, son ellos los conquistadores, ellos son los sabios; porque la lucha fisiológica les dio corazón fuerte, músculo recio y voluntad de acero” (81). The passage expresses the valorization of cultures of mobility and economies based on bovine and equestrian force, but more important, it shows the slow arrival of civilization as something productive. It is not that civilization does not arrive, but that, in the eyes of the primitive traveler, 

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20 On his trip to Leticia in the early 1930s Colombian diplomat and journalist Luis Eduardo Nieto Caballero notices the coincidence of the modern and the primitive on the canoe: “Lo más primitivo, con toda su poesía, y lo más moderno, con toda su eficacia, está reunidos en el nuevo vehículo que corta las aguas con velocidad de obús: la piragua, en la cual el salvaje de pie parece un rey cuya púrpura le cuelga de los hombros broncíneos el sol dela tarde, tal como lo vió Pérez Triana en uno de los más hermosos cuadros que trazó de nuestros ríos orientales, y el motor de carreras.” (33)
physical efforts, a “physiological battle” as he puts it, are converted into values that compete with those generated by the forces of technological modernization.

Far from obsolete or displaced\(^{21}\) by technological modernization, the use of oxen, mules, and horses is not only required by geographic, logistical and socio-cultural necessities, but remains current and vital. The embodiment of endurance (“corazón fuerte”) and tenacity (“voluntad de acero”) by the mountain dweller and herdsman is central to literary reappraisals in modernism, as evidenced throughout the body of work of João Guimarães Rosa, for instance. To earlier observers like Keller, the reliance on animal transportation is alarming. He laments that in Brazil’s vast interior “ox-carts” are “indispensable vehicles,” and “mules” are so valued that even the products they transport, such as coffee, “do not pay the cost of conveyance to a seaport” (14-15). Interestingly, the estimation of costs that occupy the last parts of Keller’s account, and Craig’s textual reconstruction and bookkeeping of the financial structures of the 1878 ventures are as labyrinthine and riddled with a perception of risk and impossibility as the passages and landscapes the explorers traversed. The high costs and insurmountable logistical challenges the railroad project posed to the parties involved in its execution reveal the ambivalent economic interpretation of Amazonian environments as abundant, and at the same time, exhaustive of resources.

\(^{21}\) On the transitions between the transportation and the information revolution, Paul Virilio writes in *Negative Horizons*, “We are thus witness to a phenomenon of ‘disanimalization’ followed by a phenomenon of ‘dematerialization’: not only the animal (the pack animal, the draught animal, the race animal) disappears to the advantage of the machine, but the technological animal tends to disappear in its turn with the rising importance of the message transmitted […]” (154). Granted that communication technologies largely shape technological development, it would be a historical detriment to adopt a conception of technology that does not account for mechanical, manual, animal, and other hybrid assemblages in the contemporary world.
ii. The Rhetorical and Visual Language of Aporetic Landscapes

Explorers, engineers, naval officers on expeditions, among other travelers, have the dual task of traversing and representing aporetic landscapes. The obstacles that appear to prevent transit and transportation throughout space are simultaneously what the explorer needs to find, reach, and encounter; and what he needs to avoid, bypass, or cross. Many of the images that contribute to the visualization of landscapes of the Amazon, complemented by textual descriptions and narrative, provide views onto a place of difficult access. Therefore, they also communicate the difficulty or impossibility of finding a locus of perspective. These images not only register and shape the cultural history of mobility in the Amazon, but also function as sites where aesthetics and technique mutually shape each other. In the ambit of travel and exploration narratives of the Amazon from the mid-nineteenth century onwards, the representation of techniques of mobility and action over a terrain create the possibility of seeing aporetic landscapes. It is not just that travelers and explorers sought to traverse perilous environments, or find new routes across the continent and between the oceans, but that in challenging modern technological limitations explorers also expanded the scope of representation and the dimensions of visibility of landscapes.

Speaking of the combination of romanticism and pragmatism (both as an ethos and as a philosophical school), which finds expression in nineteenth century North American art, Fernando Zalamea writes:

El entrelazamiento de anchos espacios, voluntades constructivas y una gran capacidad de acción sobre el medio ambiente, se encuentra casi siempre presente en las litografías. […] Un peculiar mixto de razón práctica y de ingenua inconciencia es el que le permite a la cultura norteamericana del siglo XIX asomarse
a los abismos con una fresca mirada, donde se superponen la exploración y el vértigo, la acción y la contemplación, el entusiasmo y el horror. (45)

The elements of the cultural, intellectual, and aesthetic panorama Zalamea describes are salient in the exploration narratives of the Amazon. The repertoire of visual and textual representation of exploration in the Amazon is concerned with the capacity of action over and through the environment. Wallace, da Cunha, Keller, and Tomlinson, all expressed disappointment at the flatness of the eastern lands of the Amazon, as well as dread toward the monotonous effect of the jungle on the traveler. Yet, they never ceased to renew the sense of novelty of their perspectives as means to convey their enthusiasm and awe at the sights of Amazonian landscapes. Keller’s account displays the mixture of practical reason and naïve consciousness Zalamea describes, exemplified by his ambitious projections of the speed of railroad travel in the Amazon. Tomlinson experiences several other revelations after arriving in the Amazon, including one at the Madeira River, “Here on the Madeira I had a vision instead of the earth as a great and shining sphere. There were no fences and private bounds. I saw for the first time an horizon as an arc suggesting how wide is our ambit” (132).

The French geographer and explorer whom da Cunha refers to as a ‘touriste,’ J. Delebecque, offers what is arguably the most intensified visual representation of aporetic qualities of a passage in the sources of this chapter. The explorer departed from Quito toward Peru, and having traveled over the Pastaza province of Ecuador his expedition arrived at a difficult passage superbly described as follows in his A Travers l’Amérique Du Sud (1907):

Tout à coup, arrivé devant le deuxième rio Verde, petit affluent de gauche, sur lequel des ouvriers sont en train de jeter un pont, le chemin cesse. Un petit sentier, à peine tracé, où les bêtes passent difficilement, nous permet de longer pendant
quelque temps la rive droite du rio, en allant vers son confluent avec le Pastaza. Un pont des plus primitifs, composé de trois troncs d'arbre mal reliés entre eux, jeté au-dessus d'un gouffre profond, et dont le passage surtout à dos de mulet, n'est pas à conseiller aux personnes sujettes au vertige, nous permet de franchir le torrent et de faire encore quelques pas en descendant la vallée du Pastaza; puis nous sommes obligés de nous arrêter, toute trace de chemin ayant disparu. (101-102)

At the Rio Verde, the aporetic passage emerges in its multiple senses. The abyssal course of the river prevents an easy crossing, and workers are in the process of building a precarious, albeit functional, bridge over the stream. Even beasts pass with difficulty. Suddenly, the travelers stop, as the path itself has disappeared. Privation of means, difficulty, impassability –Delebecque’s passage seizes the plethora of aporetic problems that we see throughout the pages of exploration narratives of the Amazon in the nineteenth and early twentieth century. The image that accompanies Delebecque’s text (fig. 5) is astounding, as it shows exactly what the explorer advises against to those prone to vertigo: a traveler crossing the bridge on the back of a mule (102).
Fig. 5. “Pont Sur Le Rio Verde,” from J. Delebecque’s *A Travers l’Amérique Du Sud*, 1907, p. 102-103.

Looking at the gravure\(^\text{22}\), the viewer’s perspective is ungrounded and generates the sense of a free fall over the abyss that ends on the Rio Verde at the bottom, which we do not see. The image makes the viewer confront the vertigo that the traveler might experience, if not her own. Yet, the traveler

\(^{22}\) Delebecque refers to the images in his narrative as “gravures,” and based on the quality of the images, a safe estimate would be that they are photogravures, which are images produced by transferring the negative of a photograph onto metal plates (usually copper), and etching in. *Cassell’s Cyclopedia of Photography* (1911) explains the contrasting effect achieved as follows, “After clearing off the resist the plate is seen to be etched in different depths in proportion to the tones of the picture, the shadows being deepest and consequently holding most ink” (405).
looks composed and elegant, the mule steady. Instead of a rugged explorer unconcerned with his appearance, the explorer here appears poised and unhesitant. Was he posing? Was he focusing on the risky crossing? Was he aware he was being photographed? The hazards of a barely passable passage emerge not just as elements that concern action and experience, but that also constitute a sensibility to how the aporetic passages are visually and textually composed. Following Zalamea’s reading of North American Romanticism, the pragmatism of action goes hand in hand with a sensibility to the affects of the action, and to the dimensions of an aporetic landscape. In other words, the impossibility of the crossing needs to be tackled not only with bold action, but also needs to shown as being barely possible. The image’s condensation of the exciting sensibility and vertiginous perspectives of aporias in the Amazonian landscape ultimately raises the question of the possibility of perspective itself: where is the photographer standing?

While the image of the traveler above the Rio Verde poses such question at its extreme, the simultaneous representation of actions and contemplations of aporetic passages in the texts and images of exploration narratives is not exclusive to him. The two plates below (fig. 6. and fig. 7), produced by Lt. Gibbon, show the descent of the Ribeirão falls on the Madeira River, few days after the crew passed the Guajará-Açu falls.
The image (fig. 6) simultaneously depicts a maneuver over the fall through a controlled system of forces, and the exposure of the socio-technical assemblage to danger. The maneuver is the central event of the image, which attempts to convince the viewer of the feasibility of the descent over the falls. An entire rhetoric of technique and method is at work here. The figure on the bottom left side of the drawing is the only one standing on what appears as the single visible part of the riverbank. He holds a staff (perhaps a paddle) and looks out of the image, being the only one who does not participate in the maneuver. The figure at once witnesses the aporetic traversal and observes the
viewer. The water appears to flow heavily through the fall. The vessel needs to be externally
controlled, therefore becoming a burden rather than only a means of transportation. The figure
standing on the highest rock is leaning against the direction of the water, pulling the rope tied to
the igarité upwards, while the one figure inside the vessel steers it, and the other figures work
toward stabilizing its descent.

Perhaps the strangest characteristic of Lt. Gibbon’s depiction of the descent of the Ribeirão
falls is the existence of two plate versions of the same image in editions published in the same year
and by the same publisher. Considering that Lieutenants Herndon and Gibbon’s accounts were
written following the orders of the United States Navy, both parts (Herndon wrote the first, and
Gibbon the second) are official documents that were read and approved by the House of Congress
and Senate. The plate above (fig. 6) appears in a version of the second part (Lt. Gibbon’s account)
of Exploration of the Valley of the Amazon, Made Under Direction of the Navy Department that
registers the House of Representatives’ “33d Congress 1st Session Executive No. 53”. The plate
below (fig. 7) appears in a version that registers the Senate’s “32d Congress 2nd Session Executive
No. 36”. Lt. Gibbon thus produced the representation of the same scene twice, as the plate below
displays different black and white gradations and shows the figure standing on the riverbank
looking at the maneuver, rather than toward us as in Figure 6.
Fig. 7. “Descending Ribeirao falls, Madeira River, Brazil,” from 32d Congress 2nd Session Executive No. 36, Exploration of the Valley of the Amazon, Made under Direction of the Navy Department, by Wm. Lewis Herndon and Lardner Gibbon, Lieutenants United States Navy. Part II. by Lt. Lardner Gibbon. 1854, p. 292.

While establishing why different images are printed in the versions approved by the House of Congress and Senate demands further research, it is safe to assume the disposition of the gaze of the figure on the riverbank was a point of contention. Indeed, the establishment of eye contact between the figure and the external viewers of the scene might challenge the conventions of representation befitting of a travel account that is above all U.S. naval intelligence on Amazonian fluvial and land geography, societies, agricultural practices, and climate. If the figure is depicted looking at the maneuver, the external viewer’s confidence on the technical dexterity of the crew is
reassured. All of a sudden, the figure on the riverbank acquires the function of a lifeguard or someone in charge of the safety of the whole crew. He would be ready to jump in the water and aid the aporetic passage if necessary, while in the other version his outward gaze suggests both futility and assistance to the external viewer rather than the crew. It is as though his perspectival awareness of the scene, in exceeding the action at hand, severely betrayed it, thus compromising the reliability and seriousness of Lt. Gibbon’s depiction of an otherwise hazardous action. Lt. Gibbon participated in the maneuver of the vessel over the Ribeirão fall, therefore occupying both the position of action and the contemplation of the aporetic passage in the image. Non-photographic techniques of visual representation detach image-makers from the locus of observation implied by the image.

The wood engravings in Keller’s The Amazon and Madeira Rivers (Vom Amazonas und Madeira: Skizzen und Beschreibungen aus dem Tagebuche einer Explorationsreise 1874) show the contemplation of landscapes after strenuous action. The explorer’s physical effort and attempt to increase autonomy from technological infrastructures affords views onto aporetic landscapes and produces perspectives from where falls, rapids, abysses, and other formations can be perceived as natural obstacles. The image below (fig. 8), the first from the chapter “The Rapids of the Madeira and Mamoré,” is a view of the Teotônio falls on the Madeira (Vom Amazonas 38-39). The English text tells us in the captions that the view is “700 meters from shore to shore, and 10 meters height from the cataract” (46-47). The measurement of the distances in the landscape suggest that even though the image displays the river, it does not suffice to offer an idea of its dimensions.
Fig. 8. “Der Theotonio-Fall Im Madeira,” from Franz Keller’s *Vom Amazonas Und Madeira; Skizzen Und Beschreibungen Aus Dem Tagebuche Einer Explorationsreise*. Stuttgart: A. Kröner, 1874. Print. p. 38-39

The wood engraving shows explorers who have traversed the Teotônio falls of the Madeira and now contemplate them from the safety of the riverbank. The sense of danger is ominous in the image. The landscape that surrounds the two figures is hostile. Fallen and sharply depicted branches obstruct the environment on the left side. The rocks, bushes, and cactuses at the margin create the sense the explorers in the expedition were in a terrain where they were not able to move. The landscape itself is active. Birds fly over the tempestuous waters. The clouds seem to be building up a storm. The igarité, the same type of vessel we see in Matthews and Lt. Gibbon’s images, transcribed as ‘garite’ by Matthews and ‘igarité’ by Keller, functions as the measure of the
dimensions of the elements of the image. The technological artifact is at rest at the center, while the explorers seem to casually enjoy relaxation from physical labor. The representation of explorers relaxing, rather than executing a difficult traversal, emphasizes Keller’s inclination to advance an image of the Amazon as a domain for touristic travel, as we saw in the passage he projects the locomotives hurrying passengers through the “magnificent jungle”.

Below is a prostrated explorer (fig. 9) looking at the “one of the smaller rapids of the Caldeirão do Inferno” (Vom Amazonas 40). The explorer below looks at the river as insinuating the purpose of the exploration was the acquisition of a perspective of calm contemplation after strenuous action. His equipment and cargo are by his side, and he appears composed. The image below almost undermines the danger of the rapids of the Caldeirão do Inferno, which, despite their “smaller” size (as the caption indicates), are barely discernible. The predominance of picturesque and alluring images in Keller’s images suggests that while exploration was a difficult activity, the narrator also wanted to reassure the audiences that traveling in the Madeira and Mamoré rivers was pleasant, which would help attract travelers and consolidate the demand for the costly railroad.
Contrasting the ease of the explorers in the images, the traversal of the Madeira and Mamoré landscape is described by Keller as labyrinthine, “Here the canoes must be unladen, and their contents carried to a point on the left bank above the rapid, while the empty vessels are towed there through a labyrinth of intricate channels, amidst large granite blocks, close to the edge of the right bank” (47). What to call the natural objects in these landscapes? How to orient in them? How do narrator and image makers depict the sensibility of a fluvial labyrinth? Passages such as this evidence the challenges that the description of aporetic landscapes pose to textual and visual representation. In such environments, means of mobility become cargoes themselves, and the
course of the river shifts between a path or road, and obstacle. On ‘land sailings’ or portages, Keller says:

Not only the cargo, but the canoes themselves, had to be transported hence on land for more than 700 meters to the quiet water above the fall, a heavy task which took us three complete days of hard labour, our Mojos working with right good will, although the passage of the boats was facilitated by cylinders being placed under them. No wonder, by the way, that one or the other of the canoes, after encountering so rough a transport, was so damaged as to require immediate repair, caulking, and even the addition of new ribs. (47)

At the same time exploration and travel accounts express the impetus to overcome natural and technological limitations, they are also acutely aware that socio-technical mastery is never guaranteed nor absolute. The exposure of the vessels to damage in portage calls for a language of vulnerability (which we saw in Tomlinson’s description of the Capella), and the deployment of techniques to repair them. Nature and the environment do not cease to limit human and technological efforts. If as an engineer Keller imagines a smooth geography, unthreatening to steam engines, the ports, and railroads that support them, as an explorer he cannot but come to grips with the hazards the environment poses to technologies of mobility, even if in this case it is the igarité.

In *Through the Brazilian Wilderness* (1914), Theodore Roosevelt’s narrative of his expedition through Mato Grosso and the Amazon with Colonel Rondon, he decries the existence of “impostors” and “romancers” among explorers, as well as the “[attitude of certain men who stay at home, and still more the attitude of those men who travel under easy conditions, and who belittle the achievements of the real explorers of, the real adventurers in, the great wilderness”
The confrontation with the physical forces and nature of Amazonian environments incites not only a tension between imagined, and pragmatic or empirical geographies, but also over the realm of representation. Roosevelt’s romancers are characterized as men who both underestimate the strenuousness of exploration and who think that what are otherwise hard tasks can be easily accomplished. Roosevelt is particularly sensitive to misconceptions around portage:

Many of the men of little knowledge talk glibly of portaging as if it were simple and easy. A portage over rough and unknown ground is always a work of difficulty and of some risk to the canoe; and in the untrodden, or even in the unfrequented, wilderness risk to the canoe is a serious matter. This particular portage at Navaïté Rapids was far from being unusually difficult; yet it not only cost two and a half days of severe and incessant labor, but it cost something in damage to the canoes (254-255).

Roosevelt’s intervention is particularly concerned with correcting the imagination of readers and those who are not real explorers. Besides persuading the reader of the authenticity of portage by rhetorically emphasizing its seriousness, and dismissing those “of little knowledge,” Roosevelt includes two photographs displaying portage. The photograph below (fig. 10), by his son Kermit Roosevelt, shows the dragging of the canoes “by means of ropes and logs” (262-263). Kermit probably shot the photograph from inside the canoe on the first plane or standing somewhere at the center of the track. The photograph therefore places the viewer both in a position that is internal to the action of dragging it, and in the position of observation of the portage, helping the viewer acquire a notion of what it might be like to execute the action.
Fig. 10. “Dragging the canoes over a portage by means of ropes and logs,” by Kermit Roosevelt, from Theodore Roosevelt’s *Through the Brazilian Wilderness*, 1914, p. 262-263.

The photograph below (fig. 11) is by American naturalist and explorer George Kruck Cherrie and shows the “manner of dragging the canoes across a hilly portage” (265-266). Describing the different backgrounds and experiences of the members of the expedition, including Colonel Rondon’s, Roosevelt praised the naturalist Cherrie, who was also a very skilled hunter, as the man in the expedition whose “experience had covered the widest range” (179). “The things he had seen and done and undergone often enabled him to cast the light of his own past experience on unexpected subjects” (179). Roosevelt also reports, with a sense of respectful astonishment, how
Colonel Rondon and his party “lost every single one of the hundred and sixty mules with which they had started” while “cutting the trail for the telegraph-line through the Juruena basin” (179). The experiences of the members add to the repertoire of techniques and empirical knowledge, but also enhance the sense of reliability and legitimacy of the expedition. Candace Slater, however, sees Roosevelt’s exaltation of physical effort in face of the aporetic landscapes of the Amazon with suspicion (44-45). She finds in Roosevelt’s “superlative” discovery of “absolutely unknown rivers” and “absolutely unknown wilderness remote in time as well as space” a discourse that promotes civilization and progress in the Amazon (45). While it is definitely the case that both Colonel Rondon and Roosevelt were invested in the expansion of infrastructures that characterized modernization in Brazil, Slater’s presupposition that the function of frontier exploration can be reduced to civilizational expansion is misleading, since it undermines the extent of the transformations that occur in the aporetic landscapes of frontiers. Reminding us of Frederick Jackson Turner’s thesis that “[t]he frontier transforms the would be transformer,” she nevertheless only applies it to the critical unmasking of Roosevelt’s ambivalences (48).

Roosevelt sure was transformed by the thanatropic expedition through the Amazon and the River of Doubt, but he was not the only one. The entire expedition’s functioning is a process of negotiating the ills and successes of exploration in aporetic landscapes. The photographs of the journey are not simply a document or record of the frontier space that was to transform the members of the expedition, but an open field of representation where the cultural values of technique, exploration, and photography itself are under elaboration. In this way, these photographs are not just images produced by photographers (Kermit Roosevelt and George Kruck Cherrie), but first and foremost by technicians of exploration. The function of photography is expanded by the demands of expeditions, while the visual and representational dimensions of
exploration are filtered through the lenses of the explorer-photographer. The technical domains of exploration and photography thereby shape one another.

Fig. 11. “Manner of dragging the canoes across a hilly portage,” by George Kruck Cherrie, from Theodore Roosevelt’s *Through the Brazilian Wilderness*, 1914, p. 266-267.

The use of photography by explorers in expeditions in the Amazon brings about a pivotal shift in the representation of aporetic landscapes and passages. The concern with the authenticity of the expedition, which Roosevelt conveys, and with the demonstration of verisimilitude of the efforts to traverse aporias acquires a different significance. Lt. Gibbon’s plates and Keller’s engravings represent actions and landscapes that distant readers of the accounts cannot see. They not only show the disposition of socio-technical assemblages and elements of the landscape in an indexical form, but they also give image-makers room to manipulate the expressive qualities of the image.
Keller’s wood engravings display a concern with adornment and the relaxed contemplation of the landscape’s activity. Lt. Gibbon’s plates are more concerned with how the disposition of the elements form a visual rhetoric to help the viewer grasp and be convinced by the feasibility of the aporetic crossing. This is not to say that these elements function exclusively, but simply to point to the multiplicity of visual techniques, materials, styles, rhetorical and aesthetic sensibilities that are operative in exploration narratives. Photography fixes the position of the photographer as an observer. The engraver or painter’s position is implied by the locus of perspective the external viewer sees. Yet, it is free from it. Delebecque’s photogravure astounds the viewer because in occupying a place that is juxtaposed with the photographer’s position in the landscape, he must ask himself where exactly the photographer is.

The modalities of visual representation of the Amazon from the second half of the nineteenth century until the early twentieth reflect multiple approaches and techniques to satisfy the necessity for sensible perception and communication of the elements of its landscapes. Continuities between these images stem from a concern with displaying technique, action and observation over aporetic traversals. The visualization of impassability or the conquest of an impossible image, rather than a homogeneous set of artistic and stylistic qualities, underlies the aesthetics of aporias that we see in these diverse texts and publications. Vessels and photography are testimonial technologies and proofs of the possibility of traversing the aporetic waters and lands of the Western Amazon. The explorer does not just challenge obstacles imposed by nature and technology, but also the limits of what can be seen and from where. Explorers traverse aporias putting themselves and the vessels to test, and therefore turn the perspective of contemplation into conquests that insinuate their very unfeasibility. As shown in this chapter, the labor, damage, and pragmatic authenticity involved in portage underlie many descriptions and representations of land
sailings in exploration narratives of the Amazon—from Lt. Gibbon (and even others prior to him), Matthews, Keller, and Roosevelt; not to mention Herzog and the historical sources surrounding Fitzcarrald’s iconic portage, as will be show in the last chapter. Across and at frontiers where explorations take place, technology does not simply remove natural obstacles or mitigate their aporetic qualities, but its limits, too, are surpassed by the explorer’s impetus to gain autonomy from infrastructural continuity at great cost and peril. The hybrid infrastructures and patchwork of technologies (mechanic, animal, steam-based, etc.) that enable fluvial navigation and land movement in the Amazon show that cultural-historical analyses of technology can not only benefit from divorcing the concept’s definition from the term modern, but that the modern may in fact be obsolete.
Chapter 3

Tropics of Enchantment:

Technologies of Mobility and Liberation in H. M. Tomlinson’s Oceanic Voyage to the Amazon

*The Sea and the Jungle* (1912) is Henry Major Tomlinson’s narrative of his journey to the Amazon from 1910 to 1911 onboard the Capella, a steamship carrying Welsh coal to Porto Velho, the frontier town of the Madeira-Mamoré railroad construction. The narrative’s long account of the crossing of the Atlantic Ocean comes to fill in a gap left by many travelers who went to the Amazon in the nineteenth century, including Bates and Wallace, whose narratives quickly move from England to the Amazon. The undermining of the voyage, typical of much naturalist writing, reflects an instrumental attitude toward traveling as a means of going from one place to another. As much as naturalists such as Wallace and Bates dedicated little space in their narratives to describing how traveling was accomplished and how they were much closer to explorers than their scientific ambitions would have allowed, travel and exploration are avoidable pragmatic conditions of the scientific work of a naturalist. Tomlinson, a journalist who was about to embark on a journey giving rise to his first major travel narrative, intervenes precisely in the literary space left by the naturalists who had also come to the Amazon from England.

Writing, as Frank Swinnerton puts it, for the “halfpenny Radical newspaper” *The Morning Leader*, Tomlinson converts the journey to the Amazon into a narrative of release from the dullness of modern life in early twentieth century London. Swinnerton says that, when Ernest Parke, the editor:

> [h]eard that a ship drawing twenty-three feet of water was to travel up the Amazon and to the Madeira River, which was five hundred feet above sea level and two
thousand miles within the heart of South America, he sent his incredulous junior straightway upon that voyage, also. By this decision he made a happy man. Tomlinson found in the journey all he had been seeking—romance, the answer to every boyish dream; and the articles he sent home became the basis of an afterwards famous book, *The Sea and the Jungle*. (124)

Having previously written for the *Nation*, the journalist Tomlinson finds in the voyage the opportunity for the modern literary practice of ‘improvising’ long narratives out of articles, not unlike the Euclides da Cunha’s writing of the essays in his official expedition. This writing practice is visible in *The Sea and the Jungle*’s oscillations between the concomitant necessities of reporting facts, describing reality, and instilling wonder that characterize many travel narratives. In a 1926 interview by John Gunther, “The Tomlinson Legend,” Gunther writes that, “It took him two years to write ‘The Sea and the Jungle’. It was written a little at a time, he said, often at night, in the spare moments left after busy days on Fleet Street” (689). It is worth noting that the writing of the narrative is lengthier than the journey itself, and takes place amidst the very life Tomlinson was eager to take an interlude from when embarking to the Amazon.

Though Tomlinson can be a generous narrator who dedicates large portions of the text to reporting the direct speech of people he encounters through the journey, the first person perspectival narrative invites a reading of the resonances between subjectivity and the outside. Further, the narrative explores the affective and experiential dimensions of travel as a process of

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23 Adding to the salience of Tomlinson’s subjective narration, Swinnerton writes, “Tomlinson had not the scholarly mind. He was an observer. He had reflectively read many books, but they were not the books used by men living in libraries. His interests were in the ‘whys’ and ‘hows’ of life itself, in every aspect of nature, in the thoughts and experiences of travellers and comparable meditatives as they elucidated for him the mysterious universe” (122).
formation of subjectivity itself, “Here was I at last with my heart’s desire. On the very next day I should sail, I myself, and no other hero, veritably Me at last, for a place not on the chart, because the place we should find, at the journey’s end, the map described with those words of magic ‘Forest’ and ‘Unexplored’” (12). A symbolically rich figure, the heart invokes truth and depth, but also investment and the disposition to that which is unknown. Symbolic associations between the heart and the compass (exemplified in common sayings such as “follow your heart”) bring to the fore an important junction between the subject’s sense of orientation in travel, and the desire to encounter fate and the self. While travel and exploration narratives represent a productive dualism between the process of journeying and the arrival at the destination as the desired or aimed locus, we see, in Tomlinson’s case, that the journey is also subjectively registered as a desire for transformation, and the revelation of true selfhood and fate.

The rise of steam engines and the expansion of the mobility grid in the nineteenth and early twentieth century inaugurated a new era in oceanic and continental explorations, and turned navigation and exploration into veritable affective and empirical modalities of freedom, and concomitantly, of constraint and discipline. The rise of modern subjectivity is intrinsically entangled with the new possibilities afforded by technologies of transportation. Technologies of transportation simultaneously promote entrapment and subjugation within milieus regulated by discipline and duty, and enable deliverance into spaces deemed to be at the margins of technological and economic metropolitan centers, such as the Amazonian fluvial system, not to

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24 The subjective character of Tomlinson’s narrative has also been interpreted through the lens of initiation narratives. In “Variants of Primitivism in the Travel Books of D. H. Lawrence, Norman Douglas, and H. M. Tomlinson” Patrick Edward White argues, “In this light, the most complete model for Tomlinson’s ordering of his own experience is not the factual reporting of the realistic diary, but the rite of passage that is essential to the adventures of both myth and romance” (29).
mention other environments in the tropics, and geographically extreme regions such as the poles. These intrinsically entangled currents find mythical, cultural, and historical expression in the Promethean spirit of escape and liberation from constraints, accompanied by its complement, the thanatropic drive toward the encounter with limitations and exhaustion of the capacity to overcome them.

The first argument of this chapter is that *The Sea and the Jungle* is a narrative moved by the ambivalence between these forces. The narrative ultimately reveals the true telos of expansion, the narrative’s orientation, in the instances where it enchants and reenchants the human engagement with technology and nature. Tomlinson consistently describes the experience and desire to overcome limitations whose origins are associated with land-based regimes of labor, technology, logistics, and the culture of mobility of urban environments. Yet, through the voyage to the Amazon and his experience of the Madeira-Mamoré railroad construction, he encounters and is subjugated by new constraints and limitations. That is, the movements between the Promethean spirit and thanatropic subjugation constitute an ever receding ambivalence that finds relief in experiences of expansion and revelation of a religious and spiritual character.

Relevant to this argument is Benedict Singleton’s reading of Russian Christian Orthodox philosopher Nikolai Fedorov, author of *The Philosophy of the Common Task* in “Maximum Jailbreak”. Cosmism could be understood as the ethos of technological modernization instantiated in the expansion of the terrestrial scope of mobility, and eventual liberation from it into space. Other features include the extension of human longevity and even the possibility of overcoming physical constraints such as gravity (498). To Singleton, “[c]osmism posits escape as a central principle, it is in the mode of an actual physical event rather than individual or collective retreat into an inner psychological bunker” (498). This is to say that cosmism does not find subjective
expression, but a physical actualization. “As such, it is inseparable from technology—or more precisely, design, the process which orients action towards the future and leaves technology in its wake” (498). Singleton states that, “Freedom is quantified, recast as a serial achievement proceeding stepwise, degree by degree” (502). This is a synthetic process because at no instance is one free of any constraint whatsoever. “We are free of this constraint, and now this one, and then this” (502). Therefore, “[c]osmism’s orientation to technological accomplishment is synthetic, rather than synoptic, and its programme perpetuates rather than completes” (503).

Indeed, if technological modernization is taken as the determining factor in culture and history from the nineteenth century onward, freedom is synthetic and quantitative because the ambivalence between the search for liberation and the encounter with new constraints perpetuates itself in virtue of its very abdication of a synoptic and redemptive teleology. Singleton’s secularizing reading of Fedorov removes the enchanting and sacred dimensions of the experience of freedom. But why call this aspect of technological modernization cosmism when it evacuates the concepts and experiences that provide an orientation that is not just human and terrestrial? While I agree with Singleton that cosmism is also expressed in actual physical instances of release from constraints into higher orders, as the focus of this dissertation in Amazonian and oceanic exploration evidences, I would say that the subject is a register of expansive experiences, and that cosmism cannot be easily divorced from its religious and theistic sources. Moreover, there is no such thing as a cosmist thought without a qualitative, synoptic exercise; one may as well just call it

25 From a Christian perspective, a synthetic path of emancipation of constraints may help the subject attain some freedoms, but they are absolutely relative and frail without synoptic, pivotal, and redemptive truths embodied in the Paschal Mystery.
secular technological humanism. Cosmism cannot be truly achieved through a perception of technology and nature that remains tied to secular notions and experiences.

Secondly, notwithstanding that in principle cosmism is inseparable from technology, Singleton’s reading undermines the importance of non-secular experiences and sacred views of history that have traditionally upheld more cosmist attitudes than modernity’s recent, ‘disenchanted’, utopian, exaltation of technology. Design and technology only provide an orientation toward the future if secular human autonomy and agency exclude divine will and providence, otherwise balanced in Roman Catholic and Christian Orthodox doctrines. Again, it seems to me that the tendency of atheistic and secular readers to do away with the religious underpinnings of technology and history results on a partial view of the story. My aim in this chapter is to bring to the fore the enchanting aspects of the engagement with technology precisely by engaging a writer who is not explicitly religious. Remainders and expressions of the ways in which technologies of mobility can incite experiences of this order are to be found even in narratives that at first seem to make sense within the literary and cultural history of modernity as a process of disenchantment.

These ideas bring us to the second argument of this chapter, which claims that the technological modernization of means of transportation and mobility as manifested through the nineteenth century onwards did not necessarily translate into a strictly secular and disenchanted narrative of voyaging to the equatorial and tropical regions of the planet. The narrative of release from constraints and travel through the ocean is undergirded by a revelation of divine, synoptic, and expansive elements of the traversed milieus, and by a reenchantment of technology that exceeds the domain of technique and utility. The Sea and the Jungle is an exploration narrative that reveals a subject who, while caught in the ambivalence of the expansion of his freedom and its
limits, ultimately finds deliverance in the voyage through landscapes whose magnitude and geographic expression make possible the emergence of synoptic perspectives, and therefore of an orientation toward the entanglement between agency and fate. The modern ambivalence between Promethean liberation and constraint, whose synthesis perpetuates without direction, is resolved through synoptic perspectives of space that locate the observer before wide landscapes such as the oceans and the Amazon, which incite enchanting, divine, and comprehensive modes of experience.

This chapter starts off with an analysis of how Tomlinson’s description of his life in London and his embarkation on the steamship Capella capture the subject’s experience of the culture of mobility in urban environments. The second section explores how the spatiotemporal scope of the oceanic voyage informs the exploration narrative’s negotiation between the realism of description of traversed space and the incitement of wonder, which intensify its enchanting qualities. The last section explores how the transformation of the conditions of engagement with the steamship as a technology of mobility constitutes a retrieval of the non-secular disposition of voyages, countering the thesis of technological modernization as a process of disenchantment.

i. The Urge of the Machinery: Promethean and Thanatropic Entanglements

The opening of Tomlinson’s narrative locates the author within the cycles and spaces of urban, daily life in London. Considering that he wrote articles during the voyage and composed The Sea and the Jungle in two years while back in London, the descriptions of the city must themselves be seen as an amalgamation of London as seen from the voyage with a London where the author writes. The city is not described from a sedentary perspective, but from that of a traveler who has undergone a voyage. The writing of The Sea and the Jungle after his return creates a
particularly interesting separation between experience and communication, as the traveler, confronted with much novelty, must first live and absorb the voyage (and write but shorter pieces) and later integrate them as a whole text. Euclides da Cunha constantly refers to his lack of time to write in the letters he wrote from the Amazon. In a letter to José Veríssimo written in January 1905 in Manaus, da Cunha says, “Escrevo-lhe às carreiras, sem tempo e sem saber como...não dizer, como evitar o tumulto de coisas que desejava contar-lhe. Se o fizesse, deixaria de escrever não sei quantas outras cartas e não sei quantos outros ofícios” (252). Hence the dilemma of writing while traveling: novelty and experience incite the desire for communication, but to dedicate much time to writing is to distract oneself from what is lived and seen. Further, da Cunha wishes he could write more in the letter, but that would distract him from writing other letters and fulfilling professional tasks. As discussed previously, Da Cunha’s description of the naturalists as “brilhante escrevedores de monografia” is ironic, given he presents himself to be caught in the machinery of letter writing.

The stages of Tomlinson’s narrative can be framed according to his insertion in different regimes of mobility, and the spatiotemporal constraints and possibilities that each of them creates. “It is necessary for you to learn that on my way to catch the 8.35 that morning—it is always the 8.35—there came to me no premonition of change. No portent was in the sky but the grey wrack” (2). The train is, needless to say, a technological advent that enables a particular set of experiences within the social, ethical, and cultural domains of modernization. Indifferent to the human tendencies toward the liberation of movement in space, irregularity, and erraticism, the train arrives as the engine that processes human movement into engineered mobility, allowing the

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26 Herman Melville offers a peculiar metonymy for Leviathan as a train in *Moby Dick*, “And as the mighty iron Leviathan of the modern railway is so familiarly known in its every pace, that, with
regulation and anticipation of action. The regularity of the schedule activates a notion of change that is intrinsically related to the possibility of technical malfunction. With technological modernization, unpredictability itself becomes increasingly entangled with delays, accidents, power shortages, and strikes. Such socio-technical events inform concepts of fate and destiny, and the relation between movement and destination.

In *Negative Horizons*, Paul Virilio states that, “In reality, with the dromocratic revolution of transports, it is the administration of Time that starts to take shape. The interest in dominating time far more than territory already made its appearance in the cult of the train schedule” (59-60). As the study or science of speed, dromology emerges as Virilio’s analysis of the technological and social conditions that gave rise to a culture of acceleration and constant mobility. However, the train can only be a successful dromological figure if the infrastructural subjugation of the rail to the ground is ignored. The schedule’s affixation of time ranges, cycles, and durations is inherently dependent on an efficient and stable relation between rail and ground, not to mention the entire socio-technical assemblage that logistically supports and maintains railway systems. Virilio’s theoretical analysis of speed and its logistics, while demonstrative of the profound alterations on the conceptions of temporality and politics, often ignores the ways in which geophysical and environmental obstacles provide feedback and limits to technological development. As will be argued in the following chapter, the construction of the Madeira-Mamoré railway in the Amazon functions as a test case for the advent of the railroad and the socio-technical assemblage that enables its construction. A literary and cultural analysis of the dromocratic revolution, must, as

watches in their hands, men time his rate as doctors that of a baby’s pulse; and lightly say of it, the up train or the down train will reach such and such a spot, at such and such an hour; even so, almost, there are occasions when these Nantucketers time that other Leviathan of the deep […]” (795-796).
the current chapter suggests, engage with how mobility and liberation from the administration of time translate into modes of narrative that are not necessarily encoded by properly modern experiences of time. Tomlinson and other narrators of the Madeira-Mamoré railroad show that the obstacles surrounding engineering, logistics, labor, and nature faced in its construction yielded a loss of control over time and subjugation to territory.

The effects of the designed constraints that constitute the railroad, such as attachment to the ground, speed range, and others, have been thoroughly conceptualized and represented in nineteenth and early twentieth century literary fields. In *Literature, Technology, and Modernity, 1860-2000* Nicholas Daly explains that, “For a time, the railway, rather than the city street or the factory floor, represented the site of confrontation of the body and the forces of modernization, and a whole pathology of the railway was developed” (42). It could be argued that the railway was also a site of synthesis of the Promethean forces of modernization, which sought to expand the scope of freedom, and the emergence of new limitations manifest through discipline and logistical exhaustion. *The Sea and the Jungle* does not dedicate much space to these pathologies, but it nevertheless captures important affective and phenomenological aspects of the experience of commuting by train,

So I put down the papers and turned to the landscape. Had I known the Skipper was back from below the horizon—but I did not know. So I must go on to explain that that morning train did stop, with its unfailing regularity, and not the least hint of reprieve, at the place appointed in the Schedule. Soon I was at work, showing, I hope, the right eager and concentrated eye, dutifully an busily climbing the revolving wheel like the squirrel; except, unluckier than that wild thing so far as I know, I was clearly conscious, whatever the speed, the wheel remained forever in
the same place. Looking up to sigh through the bars after a long spin there was the Skipper smiling at me. (4-5)

The passage introduces a subject ingrained in the logistical milieu of urban life and modern work discipline, caught within cycles whose daily renewal seem to inevitably prevent a sense of orientation or purpose. Remarkably, Tomlinson’s description of the dynamics of his experience, and of his experience as mechanical, approximates itself to Singleton’s idea that technology and design orient action. But the author also distances himself from it as he reveals his apathy and unawareness of the possibility of altering the course of things or his attitude. Tomlinson the commuter and worker is not only a cynical but also a teleologically precarious subject. Rather than a subject that knows its purpose and orientation of action to the future –understood as teleological elements, Tomlinson is “clearly conscious” that the “wheel remained forever in the same place”.

Through the observation of the wheel, he displays consciousness without consequence and knowledge without direction. The Skipper’s smile promises a cure to the effects of being caught in the wheel –a tool that ambiguously embodies the inertia of cynical consciousness and the possibility of movement. More importantly, however, the passage shows that knowledge and consciousness are not sufficient to change the conditions of the predicament of technological modernization.

When Tomlinson describes how he came to embark on the ship toward the Amazon he offers further insights into the ambivalence of technology as functioning simultaneously as a means of captivity and release. “I saw an open door. I got out. It was though the world had been suddenly lighted, and I could see a great distance” (5). By walking through the door and seeing a great distance, Tomlinson encounters a sailor on Fleet Street, who is to soon depart on an “[e]xperimental voyage through the tropical forest” (5). The sailor emerges as an existentially
probing figure capable of turning the wheels of fortune and shifting the directions of what would otherwise be a reiteration of quotidian cycles, labor, and logistical demands. If before Tomlinson was unaware that the ship had entered his horizon, the encounter with the sailor tells us:

> It was when we were parting that the sailor, who is used to far horizons and habitually deals with affairs in a large way because his standards in his own business are the skyline and the meridian, put to me the most searching question I have had to answer since the city first caught and caged me. (5)

Tomlinson’s impression of the sailor’s oceanic, navigational, dimensions is revealing in that the question he poses is precisely a *searching* one. From the perspective of the land dweller used to the daily renewal of schedules that are arranged according to the technological engineering of time specific to the city, the sailor is a figure that can breach through the “cage”. Harbors and ports, coastal and otherwise, figure as spaces where convergences and divergences between different spatiotemporal regimes occur. While they amass and condense technological and economic productivity, they also disperse the potential for temporal stagnation by making maritime and land regimes encounter each other. The effects of the railroad’s frequent arrival and departure times is somewhat dissolved by maritime navigation’s long cycles. The socio-technical and experiential armamentarium mobilized by a sailor, on the other hand, invokes horizons that retrieve the sense of unpredictability of fate obsolesced by logistical stagnation on land. In some ways, engineering advances on nautical, meteorological, and communication technologies attenuate fluctuations on the ocean’s surface and impacts of the weather, bringing maritime regimes closer to the land in a veritable spatiotemporal homogenization, as if the aquatic surface acquired a more land-like stability. The sense of regularity that is observed in the railroad’s punctuality contrasts the increased potential for spatiotemporal indeterminacy of ships, especially prior to the advent of the
steam engine. The gains in control and security are matched by transformations in the experience of unpredictability and fate, but the gap that separates land and ocean, cannot, I believe, be entirely closed by technological advances.

The revolving wheel and the cage are among the many designed artifacts that play a role in scaffolding the conceptions of time, orientation, and movement captured in Tomlinson’s narrative. Both tap into the totalizing effects of the city conceived as a logistical, demographic, and infrastructural regime that has its own modalities of entrapment. Tomlinson’s reaction to the sailor’s question is telling:

He put it casually when he was striking a match for a cigar, so little did he himself think of it. “Then why,” said he, ‘don’t you chuck it?’ What, escape? I had never thought of that. It is the last solution which would have occurred to me concerning the problem of captivity. It is a credit to you and to me that we do not think of our chains so disrespectfully as to regard them as anything but necessary and indispensable, though sometimes, sore and irritated, we might bite at them. (5) Tomlinson’s cynical invocation of chains and captivity expresses an important facet of the engagement with modern technology, contrasted by the sailor’s display of spontaneity. Deploying the Promethean image of the chain, a tool of bondage and securitization, Tomlinson confesses that escape is the last solution he would have considered. The fact that this possibility remains latent evidences how the subject’s ubiquitous immersion in technologically mediated environments creates both a field of awareness and an unconscious domain.

On the one hand, technological modernization affords the automation of desire (conceptualized, for instance, in Deleuze and Guattari’s Anti-Oedipus and A Thousand Plateaus), which becomes indistinguishable from compulsion and discipline at its limits. On the other,
machines and means of mobility are themselves necessary for the very voyage that will deliver the traveler-narrator from previous constraints and alter the conditions of the relationship to technological modernization. Tomlinson’s exploration narrative tells a story where the expansion of the domain of mobility goes hand in hand with the retrieval of true will, inconceivable from the perspective of technological modernization’s machinic regimes. The sailor’s existentially probing, yet casual, question leads Tomlinson to confront the unknown, the field beyond his unawareness, which is why he responds inquisitively, “What.” I asked conclusively, “shall I do about all this?” I waved my arm round Fleet Street, source of all the light I know, giver of my gift of income tax, limit of my perspective. How should I live when withdrawn from the smell of its ink, the urge of its machinery?” (6).

Tomlinson’s subjective exploration narrative in fact makes an important cultural-historical contribution in highlighting how journeys oriented to the unknown entail a process of unconditioning from the modes of discipline and consciousness that emerge by “climbing the revolving wheel,” to borrow his words. In many ways, the ethos of the narrative is best described as surrender (and I would say, faith) to the voyage’s transformative capacities. Befittingly, on the day after Christmas, Tomlinson announces his escape and the emergence of his new consciousness, “We had escaped you all. We were free. There was nothing to engage us. There was nothing to do, and nobody wanted us. Never before had I felt so still and conscious of myself” (56). The shift from a land regime to an oceanic one allows Tomlinson to regain access to levels of experience that are otherwise dampened by immersion in land-based technologies such as the railroad and the multiple technical assemblages of labor. One of these is the sense of location through references, which oceanic landscapes attenuate despite advances in positioning systems and coordination, “[w]e must have reached the place that was nowhere” (56). The sense of
indeterminacy of location taps into something essential to the exploration narrative, namely the fact that the voyage is not just defined by the destination but also by the potential for dissolution of the sense of location and place. The dynamic between destination and a nowhere actually allows the subject to conquer a sense of orientation, rather than have it be conflated with the machinery’s (pseudo) orientation of action, which he insightfully refers to as an urge.

While changes in the weather obviously affect land dwellers, it is undeniably central to oceanic navigation. The day after Christmas Tomlinson also describes experiences that resonate with the events celebrated in the holiday:

I can but state vaguely that it was about sixty miles north-west of the Fortunate Isles. The change in the quality of the sun and air became most marked; I remember that. The horizon expanded to a surprising distance. According to letters from home, sent about that date, which I received long afterwards, I am unable to find that similar phenomena were witnessed in England. Probably they were but local. These manifestations in the heavens filled the few of us privileged to witness them with awe, and a new faith in the power and compassion of God. Nothing further of note occurred on this day, except that Chips, as a further miracle, suddenly was raised whole from where he lay on his bunk with a useless leg. His leg, you may remember, was damaged in the gale off Cornwall. (57)

This is one of the most complete expressions of enchantment in Tomlinson’s exploration narrative. It captures the sense of indeterminacy in location and expanse of oceanic landscapes, while also portraying the particularity and localization of weather phenomena. Rather than a nihilistic view of the world as devoid of divine presence, Tomlinson and the crew were instilled with wonder and “new faith in the power and compassion of God”. Not to mention that Chips gets better after
convalescing in what Tomlinson sees as a “further miracle,” undeniably resonant with the Mystery of the Ressurection.

ii. Beyond Regular Routes and Timetables: the Narrative’s Search for Fortune

The beginning of The Sea and the Jungle describes the disengagement from the city and the embarkation on what was to be Tomlinson’s first long journey overseas. How the journey is initiated and how the account itself begins are paramount in the text. Tomlinson not only describes the embarkation in existential terms, but he also expresses the inappropriateness of previous accounts of travels to the Amazon, such as Bates’s The Naturalist on the River Amazons. If to Euclides da Cunha the naturalists were brilliant monograph writers, to Tomlinson Bates’s narrative can barely be said to have a proper beginning, “Yet Bates, I found, is worse than old John Hawkins, Bates actually arrives at his destination in the first sentence. He steps across in thirty-eight words from England to the Amazon” (7). Tomlinson’s denunciation of Bates’s failure to offer an account of the beginning of the journey splits waters when it comes to modalities of travel and exploration in that it shows that while the naturalist-scientific enterprise can fulfill the demand for the question of what Amazonian environments and modes of life are and how to know them, it does not answer the question of how one gets there and how one perceives the journey. That is, naturalist writing accommodates changes within an immobile, in situ, nature, while the (subjective) exploration narrative attempts to seize mobility itself. Separated by almost five full decades (Bates’s narrative was published in 1863), the thirty-eight words that mark the passage from England to Pará become over a hundred pages in the 1920 edition of The Sea and the Jungle.
Tomlinson’s responds, “Well, I did not. I say it is a gross deception. Voyaging does not get accomplished in that offhand fashion. It is a mockery to captives like ourselves to pretend bondage is puffed away in that airy manner. It is not so easily persuaded to disencumber us” (7). This statement raises questions about the textual interventions The Sea and the Jungle carries out in the literary and discursive field of travel writing. It is not the only instance where Tomlinson will draw the reader’s attention to the process of traveling itself. If travel writing shares a deep narrative complicity with traversal through space, there is an extent to which the process of traveling itself becomes the text’s subject of concern, as if the traveler-narrator were also a pilot or steersman in the navigation of the text. The author therefore corrects the audience’s likely misconceptions about what traveling really is and how it takes place. If the word persuasion suggests the use of reason to dissuade bondage, the exploration narrative reveals that such process is not of a rational nature, but unfolds on the plane of action and experience that is possible through the navigation of oceanic and Amazonian landscapes. That is, the exploration narrative counters the ideological critique of subjugation and bondage by making the literary and empirical case that liberation must be accomplished through experience. It affirms the importance of the synthetic stages of the process of freedom, but also looks for the synoptic moments where these stages are tied together. The use of the word bondage also invokes the Homeric episode where Odysseus secures himself in order not to fall prey to the Sirens’ song by finding a technically cunning solution: binding himself to the mast—a solution that Adorno and Horkheimer decry in Dialectic of the Enlightenment. Opposing the assumptions and conclusions of their critique of the Homeric epic, the Enlightenment, and bourgeois subjectivity, my reading of Tomlinson’s modern exploration narrative reappraises the enchanting and mystifying aspects of navigation and exploration as technologically mediated
affordances. In many ways, Tomlinson’s cynical attitude in speaking of the revolving wheel symbolically grasps the inertia of critique in face of bondage to technological modernization.

As Tomlinson says it, bondage “[i]s not so easily persuaded to disencumber us” (7). The release from the constraints of urban infrastructures requires an engagement with technologies of transportation that repurposes them, transforms their functions, and symbolically transfigures them. It is definitely not the case that traveling to the Amazon entails an absolute freedom from socio-technological constraints. Instead, the journey to the Amazon creates the conditions of transformations of these relations:

If you are only used to the methods of passenger steamers and regular routes, then you know little of travel. You are but carried about. Insistent clocks and schedules keep that way, and the upholstered but rigid routine is a soporific. You never see the hither side of the hedge. The granite countenance of fortune, her eyes filmed like frozen pools, which keeps alert and bright the voyager who is unprotected from her unscheduled and unmoral acts except by his own ready buckler, is watched for you by others” (11).

Not only is release from captivity something that does not get easily accomplished, but in this passage traveling, too, is an activity rather than a passivity that is afforded by the “methods of passenger steamers”. It is interesting to note that the soporific effect of the rigid routine contrasts the nervousness and disquiet that were common pathological manifestations of interactions with technologies of acceleration.

What emerges in Tomlinson’s text is the counterpart to that, namely the numbing and inert effects of technologically mediated regularity. Tomlinson is clearly weary of schedules, and the passenger steamer’s “rigid routine” would be no different from the indefatigable arrival of the train
that takes him to work. What the early portions of the narrative bring to light is precisely the desire to exit the spatiotemporal scope established by technologically engineered time as to enter a more temporally lax dimension facilitated by traveling. The “hither side of the hedge” is the spatiotemporal scope where fortune can be encountered, where the voyager is not protected from unpredictability by a schedule. Unlike the soporific observation of schedules, the prospect of the encounter with fortune keeps the voyager “alert and bright”, aware and open to the unexpected – conscious of the unconscious. Fortune, or fate, however, cannot be grasped as mere contingencies. Instead, they are instances that bespeak of an inflection of time that is not entirely controlled by human agency and that bring the traveler-narrator closer to a non-secular spatiotemporal experience. In a letter to engineer and writer Alberto Rangel, author of *Inferno Verde* (1908), written from Manaus on March 1905 Euclides da Cunha states his orientation to the unknown by describing himself as having the destiny of a *bandeirante* – a Brazilian colonial explorer:

Felizmente resistiram galhardamente os meus navios. É que dentro deles está a ‘fortuna de César’. Realmente. Creio tanto no meu destino de *bandeirante*, que levo esta carta de prego para o desconhecido com o coração ligeiro. Tenho a crença largamente metafísica de que a nossa vida é sempre garantida por um ideal, uma aspiração superior a realizar-se. E eu tenho tanto que escrever ainda. (278)

Describing his surprise at the hazards that impinge on fluvial navigation and the fleet of his expedition, consisting of two motorboats, six canoes, and a barge, da Cunha states his conviction about his fate, as though it were in his “navios”. It is peculiar that he encompasses the different vessels of his fleet under the rubric of ‘ships’. His faith in his destiny is so strong that he brings a closed letter with himself as though it were the expression of how an Ideal guarantees life’s sense of purpose. The act of carrying the letter with himself to the unknown turns it into a promissory
note, or a written bet that his belief will not be struck by a catastrophic event. Not only will da Cunha be delivered into the unknown, the source of the excess of writing he “still has to do,” which he constantly invokes in his letters, but so will the letter arrive to Rangel as a token of the expedition.

On the one hand the technology of passenger steamers allowed mass mobility, access to otherwise remote places, and the creation of novel spheres and modes of experience. On the other, the popularization of travel and leisure in steamships in the early twentieth century entailed the consolidation of codes of conduct, discipline and logistical regulation of passengers in ships. Writing about Rubén Darío’s travel writings in Viajes de un Cosmopolita Extremo, Graciela Montaldo reminds us that travel guides in the nineteenth century, such as those of Karl Baedeker and John Murray III, were the “perfect instrument” to “know the world” (20). They provided information on what travelers could expect, etiquette, customs, and on how to best organize and spend their time (21). In this sense, travel guides were texts that went hand in hand with schedules and timetables. If schedules codified the temporal scope of the modern traveler by marking discrete instances and portioning durations, travel guides codified and established criteria of experience between the known and the unknown. As Montaldo notes, while travel guides such as Baedeker’s attempted to make travelers as independent as possible from guides, middlemen and other players in the modern socio-technical domain of travel, “Las guías anticipan y regulan qué ver/hacer y cómo reaccionar. En cierto modo, tratan de minimizar o contener el factor sorpresa y volver familiar todo aquello que todavía no se conoce; intentan eliminar el lado peligroso de toda experiencia nueva” (21).

The ambivalence of technological modernization is also inscribed at the level of the travel guide as text, insofar as it enables the traveler to bypass certain dependencies while also submitting
him to the information and the sense of orientation offered therein. The travel guide, too, simultaneously functions as a potential catalyst for the expansion of space and subjectivity, and as a codified entrapment into an already synthesized or assimilated aspect of experience. The exploration narrative is, to a great extent, the counterpart of the travel guides of the nineteenth and early twentieth century insofar as one of its main tasks is to produce the reality that is encountered by revealing that it is other than presumed at the level of appearances. If travel guides manipulate expectation through the organizational of logistical, empirical and spatial information, the exploration narrative attempts to dismantle the constituents of the traversed space as well as bring to the surface an unexpected reality.

Referring to British explorer Warburton Pike’s *The Barren Ground of Northern Canada* (1892), Tomlinson writes that the “[f]inest passage in any book of Arctic travel” is where the author “[q]outes what the Indian had said to the missionary who had been speaking of heaven. The Indian asked, ‘And is it like the land of the Musk-ox in summer, when the mist is on the lakes, and the loon cries very often?’” (51). What strikes Tomlinson about the Indian’s question is his establishment of an equivocation between his lake and the missionary’s heaven, because neither of these can be accessed with artificial measurements or the planning of an itinerary. They are manifested through the encounter or passage through geographically located spaces, but are ‘territories’ that cannot be mapped. The metaphysical quality of these non-locatable and wondrous spaces nevertheless revealed by the traversal of actual landscapes intensifies the enchanting and allegorical aspects of the exploration narrative. These non-locatable spaces also challenge the exploration narrative’s capacity to represent. What is at stake here is not just the narrative’s orientation to fortune and the unplanned, but also the difficulty of putting these events in writing:
I myself learned that the treasures found in travel, the chance rewards of travel which make it worth while, cannot be accounted beforehand, and seldom are matters a listener would care to hear about afterwards; for they have no substance. They are no matter. They are untranslatable from their time and place; […] These occasions are not on your itinerary. They are like the Indian’s lakes in summer. They have no names. They cannot be found on the best maps. Not you or any other will ever discover them again. Nor do they fill the hunger which sent you travelling; they are not provender for notebooks. They do not come in accord with your mood, but they come unaware to compel […]” (51-53)

The concomitant literary needs to describe the traversed space and convey the extraordinary makes the exploration narrative a hybrid of enchanting and realist expressive modes. The struggle between these two modes of expression is what enlivens the exploration narrative, but also what constantly places its testimonial and referential capacities into question. As Tomlinson attempts to correct conceptions of travel, he also brings up the evanescent quality of these experiences, which do not provide content for notebooks neither satisfy the traveler’s original desire. The exploration narrative would not work as a genre if it did not communicate events of an unknown order and if it did not show that its subject-narrator’s desires might not find the kind of actualization expected at first.

In another instance that questions travel writing’s capacity to represent phenomena, Tomlinson turns toward the phantasmagoric. On the night before his departure in Swansea Tomlinson takes a walk at the harbor. The otherwise mundane space of the harbor is described as phenomenally unstable and somewhat haunted. “[S]pectral ships were moored down the marges, and round the wide waters was the loom of uncertain monsters and buildings” (9). In
defamiliarizing the harbor, evincing the spectrality of the ships and the uncertainty of buildings as otherwise solid constructs, Tomlinson opens the text not just to the factual and temporally homogenous aspects of reality, but also to phenomenally ephemeral and unrepeatable events whose very nature puts them at risk of never being written down. These spectral ships (an adjective Melville uses to describe the appearance of the ship Albatross in *Moby Dick*) invoke a spatiotemporal order where technology ceases to be determined by the logistical regimens of trade, daily labor, and efficiency that animate modern urban spaces.

Describing the configuration of images and representations of modern machinery in Brazilian culture at the turn of the twentieth century, Foot Hardman conceives of a pole he terms “euphoric-diurnal-enlightened,” “[a] place of full and unrestrained adherence to values proper to technical, industrial, civilization” (my translation 171). At the other end of the conceptual and representational pole, which I conceived in a libidinal register as a thanatropic impulse, Foot Hardman suggests the “melancholic-nocturnal-romantic” triad, a “[p]lace of rejection […] of the world fabricated in the furnaces of the industrial revolution, therefore figuring images emblematic of satanic machines and monstrous creatures” (171). More than adhering to either of these poles, the text shows how they are reactions to affordances or constraints. A delay in the arrival of coal to the Capella leads Tomlinson back to an experience of bondage. Needless to say, seafaring and navy life, merchant or military, are domains of labor and commitment, where duties and physical limits are undeniably demanding. Oceanic expanse goes hand in hand with bondages of its own.

The synthetic process of liberation is complemented by the thanatropic facets of the voyage:

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27 In another instance of the narrative, Tomlinson writes, “The light of the full moon was the shining ghost of noon. The steamer was distinct but immaterial, saliently accentuated, as a phantom” (44).
I was committed. There was no withdrawal now but desertion. And desertion, at times, I seriously considered, because for a week more the cargo dribbled down to us, while I endured as a moucher about those winter docks with their coal tips, and the muddy streets with their sailor’s slop marts, marine stores, and pawnshops having a cankered display of chronometers, telescopes, and other flotsam of marine failure and wreckage. (12)

Here, navigation and seafaring, alongside the technological instruments that enable it, incite repulsion and fear. Instead of the promise of emancipation and civilizational progress, Tomlinson sees “flotsam of marine failure and wreckage”. Apparatuses such as the telescope and chronometer are not only pawned, which is to say that their value is suspended, but are survivors of wreck as a real possibility of navigation. The dissonance between the utility and obsolescence of these instruments is a direct confrontation with the exhaustions and catastrophes of technological modernization and oceanic trade. The desire to go onboard ships in search of freedom is accompanied by the possibility of doom and encounter with thanatropic limits. These limits demarcate the scope of technological, human and socio-technical capacitance, and in so doing reveal the divine and uncontrollable sources of fate against which the disenchanting, secularizing, and progressive thesis sets itself. By insisting on the entanglement between Promethean and thanatropic tendencies of technological modernization I contend that while neither of them has an exclusive purchase on the cultural-historical determination of technological achievement and

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28 Melville’s *Moby Dick* (1851), and Poe’s *The Narrative or Arthur Gordon Pym of Nantucket* (1838) are illustrative of how the expansion of human action and movement enabled by maritime technology and navigation are both oriented to the encounter with fate, and express the idea that fate cannot be surpassed.
its narrative, the enchanting and resacralizing qualities of Tomlinson’s exploration narrative compel us to question the disenchantment thesis.

iii. Technical Enchantment and the Transformation of the Steamship Capella

Soon after the departure from Swansea, Tomlinson is confronted with the perils of the weather in the Atlantic ocean. As a writer without any training in merchant nautical life and labor, Tomlinson narrates the performance of the Capella, the phenomenal manifestations of the ocean, the logistics and sociability of the crew, and the experience of revelation of oceanic truth. “I will never believe again the sea was ever loved by anyone whose life was married to it. It is the creation of Omnipotence, which is not of human kind and understandable, and so the springs of its behavior are hidden” (20). While the encounter with the dangers of the sea confronts the author with the naivety of his previous beliefs, the exploration narrative does not abandon its enchanting realism. That is, at the same time Tomlinson is coming to grips with the foreign aspects of sea travel, he relinquishes previous conceptions to flesh out a language that explicitly draws on nature as created to represent the newly discovered reality. Akin to da Cunha’s conception of Amazonian nature as Miltonian, Tomlinson acknowledges that the ocean is an unfathomable creation, a space that can be navigated but not epistemologically or representationally mastered. Realist wonder inheres in the exploration narrative’s paradoxical expression of the unbelievable and inconceivable as the very reality being observed and experienced. These conceptions, as well as the explicit view of the ocean as a creation of omnipotence, express metaphysical and theistic currents of thought and cultural expression that are often undermined in metanarratives after Nietzsche’s
proclamation of “the death of God”. It is not that reality and nature are disenchanted, it is that to be realistic one must actually acknowledge the outstanding qualities of the natural world.

The confrontation with hazardous weather soon after the departure from Swansea incites a series of subjective reckonings, which are accompanied by a personifying description of the steamship Capella. The enchantment of the technical domain that reverberates through the writings of da Cunha finds crucial points of contrast in The Sea and the Jungle. In the first chapter, I referred to “technical enchantment” as technology’s capacity to reenchant the observer or subject precisely by revealing a reality otherwise unseen or obstructed by appearances. That is, rather than demystification – be it as a form of nihilism, skepticism or secular scientism – as the consequence of exposure to a technologically mediated experience or vision, da Cunha’s writings express the intensification of wonder as an experience of creation that exceeds the scientific description of the world.

Speaking of the “mystical exaltation” that characterizes the discourse of Brazilian engineers da Cunha and André Rebouças, Murari argues that as ideologues they promoted a kind of “spiritualization of technology” that “combined the national tradition with technical progress of an international expression” (my translation 335). Murari continues:

Seu discurso era, portanto, permeado de “símbolos, palavras-chave e metáforas carregadas de emoção”, inserindo a tecnologia no campo da cultura ao vislumbrá-la como um simulacro ou aperfeiçoamento do mundo natural, sendo a engenharia comparável a um processo criativo e subjetivo – divino, como na expressão de Rebouças. (335)

While Murari looks at the spiritualization of technology through a somewhat critical perspective, I read this mode of engagement with technology, also present in Tomlinson’s narrative, more
receptively. It is by virtue of its spiritualizing and enchanting effects that this mode of engagement with technology paves avenues to question the demystifying and secular thesis of modernization, whereby technological and scientific development deracinates the subject and culture from the divine, mythological, and mystical realms as belonging to less developed stages of human history.

Tomlinson also engages with the technical domain throughout the narrative, but moving diametrically to da Cunha. The Englishman’s impetus for release from constraints and escape from modern, urban, working life puts him in a peculiar relationship with technological modernization. The ship’s technical and navigational capacities physically allow the traveler to depart from one place to another. But to praise the Capella solely as a *machine* would be, for Tomlinson, to reify the very aspects of culture of urban mobility and labor from which he wanted to flee:

> It was on this day the “Capella” ceased to be marine engine to me. She was not the “Capella” of the Swansea docks, the sea wagon squatting low in the water, with bows like a box, and a width of beam which made her seem a wharf fixture. To-day in the Atlantic her bluff bows rose to meet the approaching bulk of each wave with such steady honesty, getting up heavily to meet its quick wiles, it is true, but often with such success that we found ourselves perched at a height above the gloom of the hollow seas, getting more light and seeing more world; though sometimes the hill-top was missed; she was not quick enough, and broke the inflowing ridge with her face. (27-28)

In his description of how the Capella was no longer a marine engine, the author can only partially deviate from a textual engagement with the ship’s technical capacities. He still uses a language that evidences the Capella’s constitution as a steamship, which raises the question of whether ceasing to be “marine engine” entails a ‘complete’ ontological shift from marine engine to something *other,*
or whether the Capella’s identity as machine is preserved but acquires a different dimension. The characterization of its performance as “honest” reveals its vulnerability in face of danger, and provides a conception of technology that does not require mastery over nature to be one of its essential qualities. The ship is therefore both a means of expansion (“seeing more world”) and acceptance of limits (“she was not quick enough”) (27-28).

The Capella’s transformation continues:

She behaved so like a brave patient thing that now her portrait, which I treasure, is to me that of one who has befriended me, a staunch and homely body who never tired in faithful well-doing. She became our little sanctuary, especially near dayfall, with those somber mounts close round us bringing twilight before its time. (28)

In befriending the Capella and describing her body as “homely,” Tomlinson familiarizes and domesticates the steamship. The steamship loses its alterity as machine and is represented as an inhabitable and comfortable space. Such transformations are also representations of how Tomlinson himself assimilates the fact that ships are multifunctional objects: they are means of transportation, homes, strategic spaces, storage, and sacred vessels. The ship’s aggregation of different spaces and functions into one machine embodies the desire to unify and consolidate efficiency in a single device. Interestingly, this consolidation would threaten to turn the Capella into a kind of ‘all-in-one’ trap, in comparison to which the city’s spatial distribution could reappear as liberating. The non-secular significance of different vessels does not fade through technology’s unification of function and efficiency in artifice; rather, it invites the retrieval of the machine’s divine function, as if each vessel were a potential ark.
The machine acquires properties that transcend mechanical operations and utility. It becomes a vessel of liberation, discovery, and protection in *The Sea and the Jungle*, which in turn lead to the experience of the unbound, and confidence in spite of the unknown:

The poop is a place needing exact navigation at night. Long boxes enclosing the rudder chains are on either side of it. [...] I am really proud of the privilege which has been given me to roam now this rolling shadow at night, this little dark cloud blowing between the stars and the deep, the unseen abyss below us with its profound reverberations, and the height above with its calm faith in our swaying shadow. I place my feet where nothing shows, sure that my angel will bear me up.

(60-61)

The traveler-narrator’s certainty is in many ways an act of faith that he can trust his stance and that the confidence gained through the experience of navigation is not merely due to belief in the functioning of the steamship. While technological modernization promises improvements in security, accuracy, control, and communication, any act of navigation is undergirded by a leap of faith on the functioning of technology and its resilience should hazardous conditions be met. The subject’s position above the dark depths of the ocean and the sky also express the steamship’s disposition as a means of exploration of the unknown, which found cultural intensification in Romanticist currents.

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29 The narrative of faith in the success of the probations of a journey and its redemptive aspects is also clearly manifest in Saint Brendan’s legendary sailing with fellow monks, narrated in medieval versions of *Navigatio Sancti Brendani Abbatis* (*Voyage of Saint Brendan the Abbot*). Saint Brendan, who lived between the fifth and sixth century in Ireland, went on a voyage toward the Island of the Blessed with sixteen monks. Some versions of the account say fourteen, with three other monks joining in. Throughout the narrative, Brendan and the monks face several challenges and hazards, including storms and starvation, but ultimately persevere through faith.
In “En el signo de Jonás, descensos y ascensos en abismos del entendimiento,” the first of two essays in América, una Trama Integral, Fernando Zalamea traces a genealogy of depths and heights in North American painting and literature and provides a conceptual cartography of American Romanticism in the nineteenth century:

No sólo el romántico descubre el hondo, el quiebre, el límite vertical donde chocan, se incrustan y divergen finitud e infinitud, sino que inmediatamente se sumerge también en el abismo e, indefatigable, desciende y asciende por sus paredes a pico, lanzando permanentemente su sonda para tratar de captar atisbos del oculto universo circundante. La lectura ‘abismal’ del mundo sirve para elaborar una topografía más fina y ajustada a la real complejidad de las cosas, una topografía repleta de alturas, valles y despeñaderos, que llega a amplificarse aún más a lo largo de muchas cumbres creativas en el siglo xx. (22)

This articulation of the Romantic subject attempts to include in the finitude of the self what cannot possibly fit in, the infinite. The infinite is primarily a theological concept, and secondarily a philosophical and non-theistic one. The search for and exposure to high altitudes, depths, wide landscapes and panoramic vistas are not incidental to the necessity to exhaustively survey the surface of the globe. They constitute attitudes and discourses of spatial and geophysical presence, and mobility that undergird many aspects of the cultural history of modern subjectivity. It is by placing himself atop “the unseen abyss below us with its profound reverberations, and the height above with its calm faith in our swaying shadow” that the subject can simultaneously be reduced to a ‘mere perspective’ while unbinding himself. The persistence of faith in exploration narratives such as Tomlinson’s puts the disenchanted thesis of modernity into question. The non-secular underpinnings of journeys and exploration narratives expose the ways in which the engagement
with technology does not necessarily lead to demystification, neither to the revelation of a materialist reality. While the steamship is an engineered artifice, the experience it enables is of an order that exceeds the secular technical domain.

Virilio writes, “Man is the passenger of woman, not only at the time of his birth, but also during their sexual relations, hence the taboo against incest as a vicious circle, or rather, voyage” (39). Virilio’s opening statement in the “Metempsychosis of the Passenger” (Negative Horizons) condenses a plethora of meanings pertaining to the anthropic relation to mobility and gender. The female body is the biological instantiation of sheltered, protected, development, which finds a strong cultural correlation with the role of ships as the technological carriers of travelers who undergo growth and transformation. Tomlinson acknowledges the importance of the female body in bringing the ship as technological advent back to an anthropomorphic register, whereby the English language use of the pronoun ‘she’ to refer to ships is taken to its utmost expressive capacities:

Her task against those head seas and the squalls was so hard and continuous that the murmur of her heart, which I fancied grew louder almost to a moaning when her body sank to the rails, the panic of her cries when the screw raced, when she lost her hold, her noble and rhythmic labourings, the sense of her concentrated and unremitting power given by the smoke driving in violence from her swaying funnel, the cordage quivering in tense curves, the seas that burst in face as clouds […]. (28-29)

The heart displaces the engine, and the Capella’s efforts are heard as human sounds in an instance that insinuates sexual intercourse and labor, bringing together two stages or modes of release: a libidinal one prior to conception, and conception as a result of a voyage. The resonance between
the Capella and the female body raises pertinent issues in regards to the Promethean impetus of release from constraints. The conflation between labor and intercourse in the passage places Tomlinson as a subject who enjoys the freedom of mobility afforded by the steamship while also running the risk of entrapment in the marine engine’s body, or womb, to follow Virilio. On the other hand, the vessel as sanctuary and womb can be read as an expression of the unending quality of human experience as an ongoing voyage. One is less trapped in the vessel than always already in it as a necessary means for the expansion of the domain of enchanted experience. While this point agrees with Singleton’s idea that the process of freedom is cumulative and perpetual, I insist on the necessity to maintain the synoptic and singular instances of the subject’s deliverance from constraints. The transformation of machinic functions into bodily convulsions and affects does not, therefore, guarantee the emancipation of the subject from the constraining effects of technology. Instead, Tomlinson’s retrieval of the femininity that underpins vessels and ships collapses the modern demystification narrative back into its more primordial antecedents. It strengthens, rather than disentangles, the metonymic, mythical, and enchanting associations between the female body, vessels, and the experience of birth into a renewed sense of self.
Chapter 4

Engineering Eschaton:
Cinema and Photography at the Margins of History

Undoubtedly bewildered by what he saw and heard, Tomlinson writes about his own and others’ apprehensive, and at times pessimistic, views about the Madeira-Mamoré railroad project. In contrast to the enchanting and liberating crossing of the Atlantic toward the Amazon forest, the author describes Porto Velho as an emerging frontier town that carries the burden of uncertainty of its own efforts. Tomlinson occupies multiple positions: a writer, journalist, observer and at some point bookkeeper who narrated his travel experiences and the construction of a railroad that was witnessed by many, but survived as a memory to a few. “Even one who travels for fun should keep to the truth in the matter of a ship’s draught,” he states when introducing the purpose of the Capella’s unlikely voyage (123-124). As a journalist who has the chance to travel to Porto Velho, Tomlinson dedicates large portions of the narrative to registering the voices of workers and figures that populated Porto Velho, Santo Antônio, and the environs of the construction of the Madeira-Mamoré railroad.

*The Sea and the Jungle* is an autobiographical and testimonial travel narrative that is aware of its place in the history of the railroad project. Tomlinson provides readers with a historical snapshot of the origins of the railroad and the unsuccessful attempts at construction in the 1870s. Reiterating Colonel Church’s reputation as a “[v]isionary, so therefore most energetic and compelling” man –which he likely derived from Neville Craig’s *Recollections of an Ill-Fated Expedition to the Headwaters of the Madeira River in Brazil* (1907), Tomlinson is not shy about his
lack of faith in the enterprise, a product of “[p]ractical business folk, who seldom know much, and are at the mercy of every eloquent dreamer” (125). The Madeira-Mamoré also figures in the narrative as an untraceable and spontaneous whim of the financial markets, “An unknown somebody in Wall Street or Park Lane has an idea, and this is what it does,” the narrator is told by an unnamed Englishman employed in the project (172). Tomlinson’s narrative displays an acutely critical portrait of the railroad as a project that is as ephemeral and futile as it is worthy of execution:

Still, this railway will get done. [...] This line will get its freights of precious rubber moving down to replenish the motor tyres of civilisation, and the chap who had the bright idea, but never saw this place, and couldn’t live here a week, or shovel dirt, or lay a track, and wouldn’t know raw rubber if he saw it, he’ll score again. Progress, progress! The wilderness blossoms as the rose. It’s wonderful, isn’t it?

The tracing of the Madeira-Mamoré railroad’s financial sources to New York and London emphasizes the abstract and ‘deterritorializing’ qualities – to borrow Deleuze and Guattari’s term – of the railroad project as a means of harnessing capital. In Tomlinson’s account of the genesis of the project, the railroad emerges as a structure that defies technological modernization and infrastructure as apparatuses of nation-building, the delineation of national and geographic borders, or territorialization at large. While territorial disputes between Brazil and Bolivia were embedded in legal negotiations and contracts, the railroad project operated within a much broader horizon. In the passage above, Tomlinson envisions the railroad as an engine of civilization and progress. But to take progress as the overarching narrative that would ultimately define the function of technologies of mobility, industrialization, and capital would be one-sided. Tomlinson
himself is weary of the entanglement of technological modernization and economic profitability when he says “The wilderness blossoms as the rose”.

It is not surprising, then, that readers and historians of documents left by witnesses of the Madeira-Mamoré railroad would reconstruct its history within a predominantly tragic historical and narrative framework, as evidenced in chapters of Foot Hardman’s book such as “Quimeras de Ferro: História repetida como tragédia”. If Foot Hardman’s critical framework highlights the tragic aspects of expeditions and projects of technological modernization, the most important narrator and participant of the first stage of the construction pronounces the ambivalent character of the venture. Quoting Henry David Thoreau, Craig writes on the Collins Expedition of 1878-1879 in *Recollections of an Ill-Fated Expedition*:

> Thoreau has said, “If our failures are made tragic by courage, they are not different from success.” That both tragedy and courage enter largely into the following narrative will not be questioned by those who read of the wreck of the *Metropolis*, of the two diminutive river tugs sent on a voyage of 3200 miles, by the direct sea route, from Philadelphia to Pará and of the 221 men who lost their lives, on land and at sea, in a vain endeavor to open the heart of the South American continent to the commerce of the world. (6)

It is the wreckages and ‘vain endeavors’ that lead contemporary literary and cultural historians of the Madeira-Mamoré railroad such as Foot Hardman to advance the question of why repeat history in a second attempt given the expenditure of resources and loss of human life to accidents and illness in the 1878-1879 Collins Expedition.

A salient shortcoming of the critical history of the railroad project becomes evident, namely that the predominance of the elements of tragedy and failure end up perpetuating the ideology
Foot Hardman sees at work in the orchestration and execution of the project. It is precisely his emphasis on the tragic aspects of failure that heighten the expectation of success of modern technological projects as agents of progress. Moreover, Foot Hardman’s critique does not offer an alternative to the ideal of technology as an instrument of domination. Manoel Rodrigues Ferreira, another early historian of the Madeira-Mamoré railroad and author of *A Ferrovia do Diabo: história de uma estrada de ferro na Amazônia*, also warns against a predominantly negative reconstruction of the event: “Este livro, não é um livro de pessimismo” (12). In this sense, the Madeira-Mamoré railroad was not just an infrastructure that would allow communication between remote and inaccessible areas, or the transport of rubber, but the very inverse and other of what the thesis of progressive technological modernization postulates, as Tomlinson incisively perceived. Notwithstanding my divergence from Foot-Hardman’s critical method and conception of the early-twentieth-century stage of the construction as a tragic repetition, the idea of repetition is very pertinent to what I am advancing here as a positive cultural history of technological investments such as the Madeira-Mamoré railroad, preceded by arduous portages.

Foot Hardman does not find in the historical sources of the Madeira-Mamoré construction an answer that justifies the necessity of a railroad in the Brazilian Empire and in the Republic. Foot-Hardman rightly observes that public and private projects in the nineteenth century mobilized a “[r]omantic imagination and enterprising spirit,” which provided the impetus for risky and visionary ventures (141). However, he also sees Herzog’s Fitzcarraldo, for instance, as an “[i]dealizer of failed great projects” (132). Fitzcarraldo’s dream of an opera house would, in his eyes, meet the fate of the character’s fictional railroad, which in the film is shown in a state of abandon and guarded by a most strange watcher played by Brazilian actor Grande Otelo. The actualization of the opera house would embody the ideological surplus, the achievement of leisure
that comes from wealth, and therefore the success of an enterprise. In fact, Herzog’s cinematic reenactment allows the opera house to be read as a mere lever for the central event of the portage of the steamship over the mountain. Carlos Fermín Fitzcarrald found a faster route from the Ucayali to Madre de Dios Rivers between the Serjali and Caspajali Rivers, where the isthmus named after him is located. He thus disassembled his steamship in parts and carried them over the isthmus separating the Serjali and Caspajali, from where the Madre de Dios could be more easily reached. His aporetic challenge was distance as a product of the convoluted fluvial geography of the Amazon. Fitzcarrald’s late-nineteenth-century feat appeared to be so outstanding that its very condition of possibility had to be repeated within the controlled parameters of cinema as an empirical, technical, and aesthetic method of reproducibility. Prior to its cinematic rendition, Colonel Ernesto La Combe led an expedition to attest to the ease of communication of the isthmus in 1903. The account and visual documentation were published as *El Istmo de Fiscarrald, Informes de los Señores La Combe, von Hassel y Pesce* (1904). It is as though its mythological standing needed to be contested pragmatically by another ambitious explorer to truly enter the historical narrative. Da Cunha himself proudly communicated the acquisition of a photograph of “Fritz Carral” in a late 1905 letter to Baron Rio Branco (292).

Herzog’s cinematic reenactment presents Fitzcarrald’s feat at once realistically and as all the more enchanting for being a product of a hazardous venture. In the race for an ever more synoptic and assimilated view of the confines of the earth, technology is not only the end goal or the object of fulfilment, but the empirical and social mechanism of verifiability and repeatability of the very journeys that allow expansion. The more expansion we promote by socio-technical means, the more we enhance the sense of remoteness and exposure to danger, which do not disenchant but amplify the sense of mystery and the enchantment of technology itself. At the same
time, the relative stability afforded by technical practices enables users in diverse fields of society and culture to repeat, reproduce, test, and confirm events that were materially mediated by technology. This may sound somewhat abstract, but think of the several explorers who have climbed Everest or navigated the Amazon River. Or think of Elon Musk’s experiments with rocket launches at SpaceX. Explorers are driven to repeat previous journeys, both studying the practical conditions of possibility, and expanding the limits that technological apparatuses impose on them in the face of aporetic landscapes. In this sense, the repetition of the construction of the Madeira-Mamoré Railroad by Percival Farquhar has a performative dimension that is not exclusively “tragic,” as Foot Hardman proposes, but also exploratory. Foot Hardman’s reading of the visionary and pragmatic ethos of investors and engineers of the nineteenth and twentieth century overlooks the fact that this ethos is not limited by success as the end of a project. Explorers and investors in technological innovation are well aware that the project may be an utter failure, which does not prevent a large dose of romanticism from being expressed in the imaginary of their technological dreams. While experiments and projects may end tragically, I propose that a historical framework based on a tragic reading falls short of explaining what is going on at the probing frontiers of technological modernization.

My reading of travel accounts, film, photography, and poetry in this chapter is retrospective in that it takes off from an elaboration of the relationship between the history of exploration and the making of history in Herzog’s Fitzcarraldo to delve into pivotal episodes of Fitzcarrald’s navigation and exploration in the Peruvian Amazon. The first section explores the logic of reenactment that permeates the evolution of the cultural history of exploration and mobility in Amazonian landscapes. Herzog’s cinematic adaptation, which I refer to as a cinematic reenactment, reveals how technology allows the production of obstacles, and the testing of the
limits encountered in previous expeditions and infrastructures. Portages emerge as iconic feats because in effectively bringing vessels over land they show a means of transportation outside its medium. In so doing, they perform and demonstrate the expansion of technological limits to a domain beyond that of the river to the land. The affordances of a technological means revealed by another medium (land, rather than water) allows us to read the narrative accounts of the construction of the Madeira-Mamoré railroad not as telling a story of tragic failure, but of discovery, experimentation, and production of technology’s own ‘barbarism’. Because this exteriority is derived from technology’s own functioning, it cannot be placed in a simple dichotomy with nature as the realm of barbarism. In fact, nature ends up becoming the medium of revelation of technological limitations, rather than only the object of its mastery.

In section two I examine Dana B. Merrill’s photographic coverage of the environs, personnel, and construction of the Madeira-Mamoré railroad. As Foot Hardman insightfully notices, Merrill was aware that, “[n]uma terra tão estranha, de efeitos da imagem seriam tão mais pertubadores quanto maior fosse a exatidão de seu enquadramento, a limpidez cristalina e enxuta das figuras” (Trem Fantasma 212). The more precise the framing and clearer the figures, the more power photography has to communicate and express the reality of the Amazon as extraordinary. As we saw in the first chapter, this is also da Cunha’s conception of Rangel’s prose: it is the calculative mind of his fellow engineer that produces the aesthetic shock of an encounter with a reality that is stranger than fiction. In other words, it is the fact that reality is unbelievable that requires the medium of representation to approximate itself to the expressive conditions of the landscape. “Os fantasmas nascem apenas dessa fonte singular e legitima de representação: a literalidade” (Trem Fantasma 212). Literality may very well be one of the sources of aesthetic power of Merrill’s photography, but while Foot Hardman reads his body of work as a record and archive
of the tragic spectacle of modern technology and its ruins (hence his idea of Merrill’s photographs as “negatives of history”), I see them as positive remainders that show the ongoing history of technology’s production of its own outside. This outside is not nature or barbarism as dichotomous opposites to technology and civilization, but a space where their simultaneous presence and continuity prevents easy distinctions. The space portrayed in Merrill’s image is not one available for the nation-state’s capture or symbolic assimilation. North American financial and technical leadership under the authorization of the Brazilian government made national appropriation difficult, as the state could not officially lay claims to having built the railroad. Besides, there are few records of the circulation of Merrill’s photographs. His images appear in Frank W. Kravigny’s *The Jungle Route* (1940). Beyond Kravigny’s book, which was published after a group of workers of the Madeira-Mamoré Railroad Co. met at the 1939 New York World Fair, it is hard to ascertain the destiny of Merrill’s photographs.

My reading of Merrill’s photography develops two arguments that support the idea that technology did not simply remove obstacles in the Madeira-Mamoré environs, but extended its own frontiers through the testing of its limits. Section two argues that while Merrill’s photographs intervene as a technique among those of exploration and engineering, they also go beyond the domain of utility and practice by awakening an aesthetic sensibility where objects appear as picturesque. Merrill’s mobilization of a picturesque sensibility offers a unique perspective on the cultural history of mobility at the Madeira and Mamoré Rivers because it shows the railroad construction not as a vector of modernization and development, but as an infrastructure struggling with the environment. Instead of mere forensic evidence of an extinct Madeira-Mamoré Railroad and its deceased builders, Merrill’s photographs display technology’s eschatological effects. Eschatiá, the farthest place and border, and éschaton, are related etymologically, spatially, and
temporally. Éschaton means “extreme, uttermost, farthest,” and with regard to time and order, “last, hindmost” (correspondence with Mark Caponigro). Merrill’s photography registers the movement of the construction of farthest places and of extremes by technologies of mobility and infrastructures. The railroad, conceived as a solution to overcome the obstacles of the rapids and falls of these two rivers, historically functioned as a prophetic carrier of the journeys of coal and steam-based technologies to the lands of no return.

i. Iconic Portages and the Opera of Fluvial Shipwrecks

The technological function of empirical and pragmatic probation is illustrated in Herzog’s cinematic reenactment of Carlos Fermín Fitzcarrald iconic portage over the isthmus that carries his name. The “Istmo de Fitzcarrald” is located between the right margin of the Serjali River and the left of the Caspajali, now within the borders of the Manú National Park in Peru. Fitzcarrald, alongside Colonel Rondon and Roosevelt’s crew, is among the famous ‘land sailors’ that hauled vessels over mountains. In Herzog on Herzog (2002), the director reveals that a friend who had helped fund Aguirre: the Wrath of God (1972) suggested he shoot another film in the Amazon. “He told me the true story of Jose Fermin Fitzcarrald, a fabulously wealthy real-life rubber baron at the turn of the century” (171). Not only is Fitzcarrald’s name cited and spelled incorrectly here, but Herzog also dismisses the “real Fitzcarrald” as “not very interesting” (171). “Suddenly I had my

30 J. Delebecque comments on Fitzcarrald’s exploration of the region, “Cette contrée, fort riche en caoutchouc, a été explorée surtout par l’entrepenant Fiscarrald qui avait projeté d’établir un passage entre les bassins de l’Ucayali et du Madre de Dios par les rios Mishagua et Manú, mais qui périt malheureusemment dans un naufrage. En aval du confluent du Sepahua, l’Urubamba, dont la direction générale avait été jusqu’ici sud-est-nord-ouest, s’infléchit vers l’ouest en une courbe très prononcée et va mêler ses eaux à celles du Tambo” (261).
story, not a story about rubber, but one of grand opera in the jungle with these elements of Sisyphus” (171). The reenactment of the audacious portage in the film becomes an occasion for the expansion of the frame of representation of the Amazon in cinema, which, in showing the land sailing, also attests to its feasibility and reproducibility.

This empirical attestation results in a thoroughly mystifying feat. It actually enacts a leap of faith in an otherwise unbelievable solution to the problem of steamship navigability on Amazonian rivers. It does not just prove it is possible, it affirms the portage as a source of astonishment. In Herzog’s Fitzcarraldo, the intangibility of a project is symbolically embodied in the opera house at the heart of the jungle as an enterprise that remains a dream, given that what the cinematically adapted rubber explorer achieves instead is an aporetic feat. Watching the film, one cannot help but wonder, would there ever be enough rubber barons and courtiers to attend these spectacles? In Herzog’s historical reenactment, the steamship is pulled in one piece by a system of cables. Herzog’s fictional “grand opera” twist of Fitzcarraldo playing Enrico Caruso on the gramophone on board the ship also has historical precedents that have remained marginal both to scholars of the nineteenth-century Amazon and to film critics. One of these precedents surrounds the German Captain Albert Perl, who met Carlos Fermín Fitzcarrald and participated in portages in the Madeira River, thus seeing the environment of the construction of the Madeira-Mamoré railroad.

The photograph below (fig. 12), from German Capitan Albert Perl’s Durch die Urwälder Südamerikas (1904), shows a portage of a vessel over land. This specific land sailing is meant to bypass the Caldeirão do Inferno fall on the Madeira River, which Gibbon, Matthews, and Keller all traversed. The image also appears in the 1904 Amazon Steam Navigation Company’s The Great River: Notes on the Amazon and Its Tributaries and the Steamer Services, with the caption “Bound
for Bolivia. A scene about half a day’s journey from Sao Antonio, where the first impassable rapids occur, and both batelões and cargo have to be hauled for a long distance overland” (57). Perl’s own description of the portage at the Madeira River is rather succinct. He writes that where there are no channels to navigate, the boats need to be moved up and down over a hill (110). The German captain traveled in the “Tapajós” steamer of the Amazon Steam Navigation Company, which explains his photograph being used by in the Company’s 1904 publication (113). The occurrence of the image in two publications dated the same year shows how textual and visual materials about the navigational practices of the Amazon begin to circulate and be consumed within a brief timeframe. Further, it shows a demand for materials to aid the visualization of complex landscapes, and the need to know the sites and peculiarities of emerging itineraries in the repertoire of travel in the Amazon. Images are needed as evidence of the accessibility of a site, as a way of instructing and attracting future travelers. Photographic techniques enable the visual rendering of Amazonian landscapes into images that speak to the sensibilities of metropolitan audiences that, in the early twentieth century, are increasingly consuming photographic and early cinematic products.

Perl’s photograph is not the only image from another exploration narrative that is used in the Amazon Steam Navigation Company’s travel guide. A plate showing an igarité ascending a rapid on the Tapajós River in Herbert H. Smith’s Brazil, the Amazons and the Coast (1879) is also used in the publication, evidencing the patchwork quality of the Company’s publication. Smith himself acknowledges in the preface to his account, “Besides the illustrations by Mr. Champney, a number made by Mr. Wiegandt, of Rio de Janeiro; a few were worked from photographs, by various artists; three were borrowed from Keller” (ix).
Fig. 12. “Boot-Transport über Land,” from Albert Perl’s *Durch Die Urwälder Südamerikas*, 1904. Print. p. 109

Besides traveling aboard the Amazon Steam Navigation Company’s steamer, Perl narrates his experiences with steamship owners, and his travels on board other crucial steamers in the late nineteenth century Amazon, namely those of Bolivian industrialist, physician, and some would say “geopolitical genius,” Antonio Vaca-Diez. Perl met Carlos Fermín Fitzcarrald\(^\text{32}\) at a stop on the

\(^{32}\) Ernesto Reyna’s *Fitzcarrald: El Rey del Caucho* (1942) is a biographical narrative of Carlos Fermín Fitzcarrald, which, clearly integrates fictional stylistic elements. It is precisely the unreliability of Reyna’s biographical sketch that allows us to see how Fitzcarrald’s portage became such a compelling and intriguing event. If Herzog’s film shows Fitzcarraldo as an opera-lover and entrepreneur who exploits the rubber economy to realize his ambition, Reyna’s narrative corrects the predominant image of Fitzcarrald as a rubber baron, “Como Carlos F. Fitzcarrald tenía un espíritu deportivo y era más explorador que cauchero, sin importarle el dinero que podía gastar, pretendió seguir navegando con la gloriosa ‘Contamana’ por el río Madera, hasta llegar al Amazonas y volver a Iquitos por ruta inversa a la que había salido, dando así la vuelta completa a la red fluvial del Amazonas” (60).
Caspajali River, before Fitzcarrald was introduced to Vaca-Diez and became his partner. There are few chronological references in Perl’s *Durch die Urwälder Südamerikas*, but he narrates important events that took place in July 1897.

Not long before these events, in Iquitos, Perl hears of the arrival of his Bolivian friend from Europe with hundreds of immigrants seeking opportunities in the rubber economy (148). It was decided that Captain Perl, Vaca-Diez, and other members of a fleet consisting of the three steamers, “Cintra,” “Laura,” and “Adolfito,” would depart from Iquitos toward the Orton River, by way of the Ucayali, Urubamba, Madre de Dios, and Beni Rivers (149). At this point, Perl also states that he is no longer a passenger, but has assumed the position of commander in the expedition (149). On May 1 1897, the Adolfito was ready for departure. The Adolfito had been built in England especially for fluvial navigation on this region of the Amazon. Perl describes an ample cabin in the steamer with a large music box, so there was no lack of concerts to be heard during the voyage (151). After waiting for thirty days at the Urubamba for necessary repairs due to mechanical difficulties, Fitzcarrald and his party arrive on canoes on July 8 and the infamous rubber baron is finally introduced to Vaca-Diez (155). Perl describes the festive atmosphere upon the arrival of the party, as they were then able to resume the expedition with Fitzcarrald now aboard the Adolfito. They listened to Vaca-Diez’s favorite, “Die Gigerlkönigin,” a song composed by Paul Lincke, a major composer of operettas in Berlin in the late nineteenth and first decades of the twentieth century (156). Lincke composed the melody of the song, which was inspired by and dedicated to the popular Austrian singer Paula Menotti. The lyrics are befitting to the frivolous wealth and consumption of luxury that characterizes rubber barons in the Amazon, as the lyrical voice speaks about herself dressing in the latest fashion, moving between salons, inventing fashion, and generally being chic (Dansedatabase).
Vaca-Diez is portrayed as a jubilant man, but also as an educated and well-read one. Perl says the last book he read from the library he had on the steamer was a work by the French astronomer and popular scientist Camille Flammarion in Spanish translation, *Las Tierras del Cielo* (157). Describing a scene where Vaca-Diez asks for the book, Perl also says his friend playfully asked that they “play a mass,” and Perl responded by ringing what he ironically referred to as “monastery bells” of the steamer (157). This scene is important because the narrator himself interprets its elements as omens of the impeding shipwreck of the steamer. The setting also bears an uncanny resonance with a scene in *Fitzcarraldo* where Klaus Kinski rings the bells on a church tower in Iquitos. This scene had been previously shot in the discontinued version of the film that featured Mick Jagger as Fitzcarraldo’s partner. Perl describes the steamer approaching a very dangerous rapid on the Urubamba on July 9 1897, at around three thirty in the afternoon, which proved to be a fatal fluvial obstacle. The narrator and commander “could hardly believe his eyes” as he saw the steamship taking a wrong turn, and announced the loss of control to the helmsman (My translation 157). “Everything happened in the blink of an eye” (My translation 157). Perl gave orders for a maneuver that was unsuccessful.

Perl writes that as the steamship was shattered between the rocks and gave in to the tempest of the rapids, “both Vaca-Diez and Fitzcarrald were swinging through the windows into the roaring waters” (My translation 158). The rudders fell over the deck and Perl awaited the bursting of the boilers on top the steamer. While the violent wreck took place, Perl writes, the music box played “Martha, Martha, you disappeared,” from the opera *Martha, or the Market at Richmond*, by Friedrich von Flotow, until the very last moment (158). Miles and miles away from the Amazonas Theater in Manaus, inaugurated on December 31 1896, the sounds of a shipwreck on the Urubamba River reverberated through the surrounding forests, and they included opera. Perl only
mentions the line, “Martha, Martha, du entschwandest” (Martha, Martha, you disappear), from Flotow’s opera. Less than a hundred years later, Herzog would claim the idea of attributing “[t]he love of music to Fitzcarraldo” by shooting a scene where the Molly Aida is caught in the rapids of a river and the voice of Enrico Caruso is heard in an opera playing on a gramophone in the steamer (Cronin 171).

As he tells Paul Cronin in Herzog on Herzog, “Fitzcarraldo’s love of music was my idea, though of course the rubber barons of the past century did build an opera house – the Teatro Amazonas – in Manaus. The real historical elements of the story were for me merely a point of departure” (171). In downplaying the history of the rubber economy in the Amazon, Herzog misses the history of fluvial navigation and exploration in the Amazon. The emphasis on the rubber economy as characteristic of the nineteenth and early twentieth century Amazon obscures a broader understanding of phenomena taking place at the time, and reduces the multiplicity of threads that weave the complex historical fabric of Amazonian environments. While Fitzcarrald’s portage was executed by dismantling a steamer in parts, a feat that Herzog’s production supposedly surpassed by carrying an entire steamer, aporetic portages were far from uncommon, “But for what we did there was no precedent in technical history, and no book of instructions we could refer to. And you know, probably no one will ever need to do again what we did. I am a Conquistador of the Useless” (179). Lester Caltvedt, who to my knowledge is the only other scholar to have noted the resonances between Captain Albert Perl’s narrative and Herzog’s Fitzcarraldo, suggests that:

Fitzcarrald’s maneuver was probably more difficult than Herzog’s, despite the smaller size of the original boat (32 tons vs. 320), the partial dismantling of the original boat, and the angle of the slope (2% vs. 40%). While Herzog and crew covered a short distance with the help of a caterpillar, Fitzcarrald cleared a swathe
twelve kilometers long and four meters wide in places, enough to allow the planting
of crops to supply food during the project, with 1000 Indians, but no engine power.

(80)

The explorers who executed the portages analyzed in chapter two were aware of the necessity of
land sailings to tackle aporetic passages, and referred to the duration and methods that were locally
developed by different experts. Without diminishing the singularity of Herzog’s cinematic
reenactment of portages, not to acknowledge that to bypass natural obstacles is one of the most
consistent elements of the history of exploration in the Amazon would be a serious
misrepresentation.

Beyond the cinematic reenactment of Fitzcarrald’s bold portage, Herzog also repeats the
very history he dismisses under the conviction that bringing opera to the jungle was “his idea”. As
is well known, the Molly Aida does not wreck in the film. “When the boat is crashing through the
rapids it jerks the gramophone so that suddenly we hear opera music playing, and all the realistic
noises fade away to reveal Caruso singing” (176). While we do not know which performance of
Martha played on board the Adolfito as it wrecked on the Urubamba, Fitzcarraldo is a production
that, whether the director likes it or not, reenacts a scene that did take place. Herzog consistently
emphasizes the original element of his production, “As it is, the whole thing has been transformed
into an operatic event of fever dreams and pure imagination, a highly stylized and grandiose scene
of jungle fantasies” (176). Such intense expressions of the vision of opera taking place in the
Amazon are frequent in his Conquest of the Useless: Reflections on the Making of Fitzcarraldo (2009)
and in interviews. What is reenacted in Fitzcarraldo as an empirical probation of exploration is not
the tragic failure of the dream of an opera house as a project, but the difficulties in the transitions
of exploration and engineering as human activities and forces that coincide and compete at frontiers.

ii. Dana B. Merrill: Photography at the Ends of the Madeira-Mamoré Railroad

Herzog was not the only one to probe the pragmatic conditions of possibility of exploration and engineering. Before his cinematic reenactment, American photographer Dana B. Merrill thoroughly studied the social, technical, and visual elements of the sites of construction of the Madeira-Mamoré railroad. The official Brazil Railway Company photographer shows a nuanced and concrete perception of the intertwinement of natural and technological obstacles – not to mention scenes of Quarantine Island, the hospital, indigenous people, and the sick. All in all, however, scenes of the construction are the main objects of his photographic work. Merrill’s photographs display frontiers as sites whose historical significance stems from the products of competing and entangled forces of exploration and engineering. Because the railroad emerges in a space that was within the purview of explorers and travelers motivated by the very probation of technique and physical endurance, its efficiency is bound to be evaluated in relation to the aporetic traversals of explorers. The Madeira-Mamoré project is conceived to overcome the natural obstacles imposed by nature upon explorers, while the actions of explorers are mostly answers to the question of how technological limits can be challenged. While the exploration genre of travel and writing wanes with the construction of the railroad, the landscape of the Madeira-Mamoré gains a new kind of aporia, namely the one which in Xenophon’s Anabasis appears as a result of a construction, “Or perhaps he is digging a trench or building a wall somewhere to cut us off and make our road impassable” (135). If the sense of aporias as difficulty of passage is salient in the
exploration narratives preceding the Madeira-Mamoré railroad, its construction generates aporias as effects or products of technologically mediated manipulation of the land. Further, the sense of aporias as built obstructions also demonstrates that the intended function of a technology (in this case transportation) is not always its sole effect.

Fig. 13. “Views of the Estrada de Ferro Madeira e Mamoré Amazonas & Matto Grosso, Brazil S.A.
The Miriam and Ira D. Wallach Division of Art, Prints and Photographs: Photography Collection, The New York Public Library.

In the exploration narratives of Gibbon and Keller, or even Matthews’ –who participated in the 1870s attempt– the landscape appears as a field of exploration, detection of obstacles, and
theoretical assessments of the navigability of the rivers by steamers, or, in Keller’s case, the feasibility of a railroad. The rhetorical and visual formation of these elements of the landscape as natural obstacles depended on the images’ capacity to communicate the difficulty of traversing the landscape. The techniques and styles of these non-photographic images were limited in their capacity to translate the details of the landscapes, which gave an idea of their contours, features, and textures. In contrast to the non-photographic images in chapter two, Merrill’s photographic representation of the rapids and falls add a great deal of detail to what before appeared in an almost indexical form in the images produced by the earlier explorers. By indexical I mean to say that the drawings and engravings pointed to an outside of the image. While the wood engravings undeniably have a pictorial and aesthetic function that does not necessarily depend on the outside of the image, the viewer was invited to look at the image as a window into a real landscape and scene that took place beyond. The photographic portrayal of the landscape invites the viewer to see the image itself as containing the landscape.

The photographic depiction of the falls and rapids evidences a sustained need to display the aporetic landscapes of Porto Velho and Santo Antônio. It is as though Merrill needed to bring the viewer’s attention back to the aporetic nucleus of the landscape, the one that justified the project. The photographic representation of the falls and rapids intervenes in the temporal configuration of the landscape. It at once shows the unchanging character of the rapids and falls, and how the railroad project is an attempt to challenge this natural fact. The left side photograph of the “Theotonia” falls in fig. 13, which Keller had also depicted in a wood engraving, shows the rapids as a challenge to passage, while the photograph on the right shows barracks and workers at the rocky margins of the river. Side by side, the two photographs dramatize the different aporetic planes of the landscape. The rapids impose a limit to the functional range of steamers, while the
barracks and workers demarcate the field of spatial expansion and passage. The portrayal of the coexistence of these elements in the landscapes presents the Porto Velho frontier as a space formed by the competing forces of engineering and exploration, the former attempting to overcome natural obstacles while proliferating technical ones, the latter attempting to overcome technical obstacles while seeking the discovery of more aporias. Merrill also makes a point of showing the portage of the batelão (a larger igarité vessel depicted in images in the second chapter), over the rocks at the margin. Regardless of the arrival of steamers in the navigable parts of the Madeira, the manpowered vessel appears as contemporary and operative technology of mobility, even when it poses the burden of portage as a requirement. The technology of photography participates in the cultural-historical transformations of the Porto Velho frontier, now the capital of Rondônia, through its capacity to demarcate both a history of its representation (before and after the photographic image), and to visually capture the final stage of the construction.

Among the few surviving materials recording the experiences, memories, and views of the construction of the Madeira-Mamoré railroad are two albums containing Merrill’s photographs. *View of Reviews or Scenes as Seen by Engineers, Tropical Tourists, Global Trotters, Knights of Fortune and Tramps* has eighty-seven photographs of Porto Velho, Santo Antônio, and construction camps. The title indicates a perception of the Amazon as a destination that attracted a variety of figures, some with a purpose and professional vocation, others simply wanderers in the vast rivers and jungles. Given that both *Views of the Estrada* and *Views of Reviews* were albums and not published collections of the photographs, we can imagine Merrill was free to give such a title to the latter album. *Views of Reviews* emphasizes Merrill’s desire to guide the viewer of the landscape through the eyes of different figures that circulated in the environs of the Madeira-Mamoré railroad. *Views of the Estrada de Ferro Madeira e Mamoré Amazonas & Matto Grosso* has
over two hundred and fifty photographs and sixteen poems by different authors who worked in
the company. Views of the Estrada contains poems published in the local English language
newspaper The Porto Velho Weekly Times. The consolidated format of this album embodies the
attempt to maintain the memory of the railroad by aggregating the vernacular voices of the poems
and the images that show the landscape, daily lives, and construction of the Madeira-Mamoré
railroad. In a letter to the director of the New York Public Library from one of the first pages of
the scrapbook, Groesbeck Walsh, a former employee, writes, “I am uncertain in my own mind as
to whether there is a duplicate of this collection in existence but in any event it appears to me that
in time to come these pictures will be of no little historical interest. I am afraid something will
happen to the collection, as such things do happen in private homes through accident or fire”
(Letter documenting provenance in album). Not surprisingly, Walsh’s concern with the
destruction of the album in the letter echoes the vulnerability of the archive and memory of those
who worked and lost their lives in the construction of the Madeira-Mamoré railroad.

As Gary and Rose Neeleman explain in Tracks in the Amazon: the Day-to-Day Life of the
Workers on the Madeira-Mamoré Railroad, though many of Merrill’s photographs were published
in local newspapers and Kravigny’s book, “[m]any of them were lost when the Brazilian military
demolished large portions of the railroad and its files in 1971. We also learned that many of
Merrill’s photos were destroyed by fire; before the discovery of the Pyles collection, it was estimated
that only 189 photos had survived” (5-6). Merrill’s photographs thoroughly guide the reader
through the realm of the railroad construction. They show the transformations Porto Velho
underwent as far back as 1907, the buildings that were erected and their functions, doctors
(including prominent Brazilian physician Oswaldo Cruz), workers, indigenous people, and several
zones of construction occupied by machinery. While they are far from expressing the allure or
enchanting capacities of technology, the photographs show the alteration of a landscape where obstacles to mobility are simultaneously conquered and multiplied. They offer multifaceted views of the technological production of new difficulties of passage and technical challenges.

Prior to the first stage of construction in the 1870s, the landscapes of the Madeira-Mamoré Rivers were characterized by the rapids and waterfalls that forbade easy navigation and the transportation of rubber from the Bolivian Amazon. Physically demanding portages and risky maneuvers over water had to be executed. The early twentieth century execution of the project comes to expand and deepen the aporetic landscape of the Madeira and Mamoré Rivers. If explorers overcame the technical limitations and affordances of their instruments to gain more autonomy and move across difficult terrains, the period between 1907 and 1912 of the construction of a structure meant to bypass these difficulties poses new questions about how natural obstacles are detected and technical obstacles produced. The construction of the railroad shifts the locus of definition and perception of natural obstacles from the river to the land. The problem is no longer the continuous navigability of the waters but the land’s capacity to accommodate rails and a locomotive traversing the forest. The insertion of machinery, labor, materials, and structures for the construction produce not just a passage over land, but a landscape of technologically generated impasses. Natural obstacles are now mediated and translated through the practical dimension of labor and the unfolding of an engineering project. Notwithstanding the transformation of the landscape of the Madeira-Mamoré railroad into a site where obstacles are no longer perceived through the eyes of the explorer, but through the eyes of the engineer, topographer, worker, and photographer, the falls of the Madeira River continue to figure in Merrill’s photographs as ominous formations that challenge human and technologically mediated mobility.
A caption reading “Clearing Difficulties” appears under a single photograph that occupies an entire page, and the same caption appears under four photos on another page. Three of these images show large, fallen tree trunks over a partially cleared path. In fig. 14, Merrill uses the human and the animal to ingeniously compose the frame, given that the large tree trunk cannot be easily moved. The men on horses occupy the center of the image, which is neatly divided into two horizontal sections by the trunk. The men and the horses stand as measures of the scale of the landscape and the size of the trunk, showing the impasses of clearing a path for the rails. They are, for the same reason, the embodiment of the very mobility that the railroad is meant to provide.
The image not only reminds us of Gibbon’s previous suggestion that a mule road be built as an alternative route to navigation on the Madeira and Mamoré, but also shows that walking through the dense shrubs and debris of wood must have been burdensome. By capturing the incomplete path and the men on horses, Merrill explicitly shows the entanglement of exploration and engineering. While the two men are not explorers charting their way through a terrain to be studied, their presence demonstrates the persistence of exploration as a practice that challenges obstacles posed by technology. After all, the other of technology in this image is not nature itself, but the very space produced by social and technical efforts.

Unlike Foot Hardman, who suggests that Merrill depicts the “backstage of the machinic spectacle” as a “chronicler and narrator” of the construction, I read Merrill as a successful technician of the landscape of the Madeira-Mamoré Railroad (231). Merrill’s photography is not a documentary visual practice, a “negative of history,” that finds its meaning beyond engineering and exploration, as though these were its contents. Instead, his photography has to be seen as a technical and aesthetic practice that emerges from the cultural-historical movements of exploration and engineering at the Madeira and Mamoré Rivers. This requires us to look at his photography as a technical and aesthetic practice that operates within the spectrum of exploration and engineering, rather than as an external art. I brought up a similar problem when reading Kermit Roosevelt’s and George Kruck Cherrie’s photographs in chapter two, where I said it was necessary to see how photography is articulated in exploration. This outlook is more congruent
with the resistance the Amazon historically posed to professional and technical specialization in
the period examined here. Moreover, it is heuristically richer because it allows us to see how
Merrill’s photography – born out of the labors and tensions between exploration and engineering –
narrows the gap between them. It should be clear that the photographs I selected are representative
of a group of images where Merrill focuses the viewer’s attention on the emergence of new aporias,
often in comparison to natural ones, as elements that characterize and constitute the Madeira-
Mamoré landscape. The images that study the landscape of the construction and nature ask
whether the railroad is the objective or the means by which exploration expands its field of
possibility in challenging technological limitations. This is to say that the compositional elements
we see in fig. 14, such as the centralization of the men and horses and the establishment of two
horizontal sections, are themselves challenges to the landscape’s aporias. Merrill does not simply
study obstructions to passage as byproducts of the construction, but the conditions that allow for
a photographic arrangement of an aporetic landscape. Therefore, what the viewer of these images
sees is photography itself as a technique of organizing and composing the interaction between
nature, technology, man, and even animal.
Fig. 15. “Clearing Difficulties,” from “Views of the Estrada de Ferro Madeira e Mamoré Amazonas & Matto Grosso, Brazil S.A. The Miriam and Ira D. Wallach Division of Art, Prints and Photographs: Photography Collection, The New York Public Library.

While images showing “Clearing Difficulties” in Figs. 14 and 15 make that explicit, Merrill is consistently trying to leverage these aporias for the sake of photography’s expansion of its representational domain. The two other photographs showing “Clearing Difficulties” in fig. 15 show the left and right side of what may be the same tree trunk. The two photographs, with the subject and horses in different places, evidence Merrill’s concern with mobility and spontaneity. It was not a question of collecting images as a samples of the environment, but of exploring the possibilities the environment afforded for photography and sensible perception. The study of the
size of the trunk shows how large trees come to be proof of the effort involved in the construction of the railroad. At the same time, they become objects of curiosity with intrinsic aesthetic value. It is not hard to see the appeal of these photographs to North American viewers who saw images of monumental sequoias in California.

The photograph showing “Res. #16” in fig. 15 shows an already cleared space with thatched roof houses, a theme that concerned artists in the picturesque tradition, as Wolfgang Kemp explains in “Images of Decay: Photography in the Picturesque Tradition” (106-107). It is the picturesque tradition in painting, he tells us, that teaches us to “[p]erceive and appreciate signs of decay, age, even scenes of neglect and impoverishment from a distanced perspective” (102). Painters and later photographers found in decaying, worn, and neglected objects sources for the study of new materials and forms of expression, not to mention the exploration of the effects of time itself (104-106). Kemp attributes the success of the picturesque tradition’s encounter with photography to its disregard for the utilitarian values of the objects, and its refusal to offer “ready symmetries” or “[e]asily identifiable compositional schemes” (107). So far, I have been arguing that Merrill’s photography cannot be seen as a document outside the domains of exploration and engineering as practices that constitute the cultural history of mobility of the Madeira and Mamoré Rivers. His photography has to be seen as a technique that makes claims about the arrangement of the landscape. However, as soon as we turn our attention to the objects in these images, which have the appearance of neglect and impoverishment, we are forced to inquire after the aesthetic sensibilities that are awakened by his photographic practice.

The thorough depiction of cleared spaces, the railroad path, ditches, wood debris, and tree trunks can be understood as a study of the production of obstacles that do not necessarily have straightforward technical solutions. Merrill’s iconographic work exceeds the domain of utility by
showing that, to a great extent, the aesthetic power of the objects and environment of the railroad stems from an abundance that rivals that of Amazonian nature. If the images of tree trunks display natural obstacles turned into technical ones, images such as fig. 16 shows the products of the construction – the surplus of wood from cleared debris – as formative of a new kind of picturesque object. One approach to picturesque decay in photography is “[d]evoted to the decay of objects of civilization” (117). According to Kemp it was in the 1920s and 1930s that photographers dedicated themselves more intensively to this articulation of picturesque decay. “The most popular leitmotifs were scrap heaps, wrecked automobiles, and demolished buildings” (117). Giving Arnold Newman’s “Wall and Ladders” (1939) and Wynn Bullock’s “Old Typewriter” (1951) as examples, Kemp argues that these images “[g]ladly assume the alterations that the destructive action of human beings and of nature have impressed upon artfully finished cultural objects” (118).
Fig. 16 “Unfinished Wharf, and ‘Steam Ship Falk’” from “View of Reviews or Scenes as Seen by Engineers, Tropical Tourists, Global Trotters, Knights of Fortune and Tramps. Madeira Mamoré Ry. Brazil, South America.” Biblioteca Nacional, Rio de Janeiro.

Fig. 16 obviously shows no wrecked automobiles or demolished buildings, but it does show the piles of scrap wood and logs near the steamship. The “Unfinished Wharf” amounts to a precarious arrangement of logs and rails. Both the hazards of Amazonian nature and human action expose the steamship, the civilizational object in the photograph, to decay. At the same time, the improvised wharf is, in fact, a productive solution to the steamship as an aging problem. It is not the harbor that is unfinished, it is the steamship that is obsolete in this context. A less controversial reading of this image might suggest that Merrill confronts us with the wasteful nature of technological modernization and the grotesqueness of engineering’s transformation of physical reality. While I do not disagree with this reading, it is insufficient because it ignores the effects of nature and human action on the technologies of mobility and infrastructures recognized as the material strata of modernization. The aesthetic sensibility to the signs of decay and hazards that we see in fig. 16 and many other of Merrill’s photographs (e.g. landslides derailing the railroad, piles of wood debris surrounding machines, and even the workers’ ill physical state) also tell a story of the process of aging of technology. It is easy to see how Merrill’s photography chronicles the destruction of nature and the inhuman conditions of life and labor in the Madeira-Mamoré railroad, but considerably less so to see the vulnerability and derelict appearance of technologies as aesthetic, cultural, and even moral concerns.

Picturesque decay in his body of work is not so much conveyed through the presence of objects previously identified as picturesque (e.g. thatched roofs), but of objects that evidence the
railroad’s construction of the outside of technological modernization. Again, this outside is not nature or barbarism as altogether different realms, but is produced by the very history of steam engines and coal-based technologies. If anything were to be called ‘modernization’ in these images, it would not be the steamship or train as technologies of mobility, but the acceleration of the rate at which these technologies degenerate in the Amazon, and certainly in many other frontiers of the planet. Thus, it is necessary to add to the claim that Merrill’s photography is the only surviving memory of a tragic endeavor the idea that he captured the deliverance of supposedly modern technologies to their last ends. If we are to engage the documentary aspects of his photographic practice, the eschatological cultural-historical dimension cannot be ignored. Secondly, if Merrill’s aesthetics is capable of inciting the mourning for the loss of life and grievance for what appears as senseless expenditure, it equally—and even more so, I argue—creates a prophetic visual language announcing the ends of a technological era disguised as modern.

In *The Mirror of Herodotus: The Representation of the Other in the Writing of History*, François Hartog investigates Herodotus’ account and construction of the Scythians as others to the Greeks. The Scythians were nomadic and lived in a zone referred to by the Greeks as *eschatia*, a “zone beyond the cultivated area” (13). These lands were in areas of difficult access, they “[b]ordered a frontier and merged with it” (13). To the Greeks, they were the inhabitants of the “farthest part,” “edge”, or “border,” which in the Ionic dialect used by Homer and Herodotus is called *eschatiá* (correspondence with Mark Caponigro). Hartog explains that Herodotus complicates the account of the Scythians showing that their land had “[i]ts own margins,” that the Scythians are not united and “[a]re divided into a number of different peoples,” and that their land was also inhabited by people who were not Scythian at all (14). The characterization of the Scythians could be easily borrowed to describe the peoples inhabiting the lands along the Amazon
River and its tributaries and branches. To Latin American, Anglophone, and European travelers and writers, the Amazon has been undeniably constituted as a modern *eschatiá* of its own kind. Indigenous peoples and local inhabitants have been consistently perceived as the others, as veritably modern Scythians, to the Western subjects who traversed these environments. As this dissertation has shown, such traversals are far from simple. They involve culturally complex transactions with locals, technical cunning, physical endurance, a visionary and pragmatic ethos not easily extricated from megalomania and the death drive, and the capacity to translate the plane of action over geophysical terrains into culturally meaningful acts and narratives.

Hartog describes the Greeks’ passage over aporetic lands and margins that led to Scythia in Herodotus’ account: “To pass from one space to another involves crossing a river, a waterway, an inlet of the sea, or a desert: in a narrative, the action that dramatizes such a crossing is the building of a bridge” (57). Hartog has two bridges in mind in this passage. One Darius orders be built to join the two shores of the Hellenspont, and the other over the Ister river, which allows his army to reach Scythia (57-58). The importance of the crossing of the Ister river reminds us of how underestimated the history of mobility in fluvial systems is, especially in the southern hemisphere nation-states that emerged out of colonial structures. In his modern cinematic crusade for the making of Fitzcarraldo, Herzog has called attention to the narrative importance of the visualization of the passage over the hill in *Conquest of the Useless*: “But in the film geography has to be visible: two rivers that almost touch, with only a mountain ridge between them, over which the ship has to be hauled. Without this understanding the point of the story is lost” (126). Historical accounts stemming from the margins are aware that communication between regions and peoples are far from given. They are products not of a history of expansion from metropolis to the Scythian antipodes, but of the transformations of social and technological structures at the frontiers.
Crossing a river, thus, is a process that elicits a narrative resource necessary to connect spaces that are otherwise separated by aporias.

Among the “seven representative photos” that share the first pages of Merrill’s *View of the Estrada* album with poems is the one below, which displays a bridge between banks of a flooded area amidst the forest. These “seven representative photos” stand out from the rest because of the distinctively blue tone of the images. While the photo contains a number, its caption does not figure in the list of images in the album, which lists up to image six hundred twenty-three. What we see, instead, is a short rhyme right below the photograph, which offers some insight into the perception of the effect of the construction and engineering on the landscape. The photograph on the previous page in the album shows precarious wooden houses with thatched roofs along the cleared path “right in the middle of the jungle dense, thru many dreary miles”. If the perception of long distances is not alleviated by the implementation of a technology of mobility that would eventually allow relative gains in speed, the photograph displays a rudimentary, yet efficacious, alteration of the landscape.
Formally, these are very modest verses. These anonymous lines could be ascribed to R. S. Stout, B. A. de Bourbel, Dr. A. C. Fitch, or A. W. Chester, who authored the other poems in the album. The poem operates on the simple phonetic, morphological, and semantic resonances of ‘San Antone’ and ‘undone,’ ‘fill’ and ‘hill’. The bridge is left unrhymed, and its characterization as ‘little’ dissimulates the fact that it is the center of poetic gravity in these lines. The bridge’s poetic significance emerges both from its being the content of the poem, and from the poem’s form, which simulates the function of a bridge. The phonetic relations between San Antone and ‘undone,’ ‘fill’
and ‘hill,’ link entities that exist between two domains that now relate to each other because of the emergence of a porous zone, a place that may no longer be an aporia. At first, a “mighty fill” may appear as a mere quantifier—a synonym of ‘much’ or ‘a lot’. Yet, the expression invokes the power of earth as a malleable material that shapes and fills space. The bridge creates a means of passage, a porosity, between “plain” and “hill,” landscape formations that appear as opposite or incommensurable in the context of the railroad project. In the photograph, the difficulty of passage is posed by the flooded ground, upon which a foundation has to be built to sustain a bridge. The poem proposes the bridge as a metaphor for the solution of an aporia. In making level plain and hill, the poem makes the bridge appear as an inherently logical physical structure capable of marrying the incompletion of nature to the promises of technology to bypass natural obstacles.

Notwithstanding the mighty help of this little bridge, the burden of modern transportation and mobility was far too light for its rails. With the success of rubber plantations in Malaysia, Sri Lanka, and other tropical colonies, the number of passengers and amount of cargo decreased considerably, verging total inactivity. The Madeira-Mamoré railroad would not see an increase in activity until the Second World War, when Brazil furnished the Allies with supplies of rubber. Over three decades mark the period of negotiation and construction of the railroad from the 1870s until its completion in 1912. Throughout this era the Amazon emerged as a frontier of the history of technology in functioning as one of the many Scythian testing grounds for the expansion of the global mobility grid, and as a likely graveyard of structures, vessels, and trains that would never

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33 Luis Eduardo Nieto Caballero prophesizes the transformation of the Amazon into a civilization, “Todo en ella es grandeza. Después un pensamiento amargo visita al observador: ‘Todo esto será habitado, será próspero, dentro de quinientos años. La profecía de Humboldt se cumplirá indefectiblemente. La Amazonia, con todos los ríos tributarios del mayor camino que anda en el planeta, será el asiento de una gran civilización. No puede haber discusión a ese respecto. Pero cuándo?’…Lo sabroso de las profecías es la ausencia de fechas.” (27)
come to flourish into their projected capacities or continuously sustained operation. Fordlândia, the rubber processing industrial town conceived and built by Henry Ford in 1928, is another instance deserving further investigation.

Quoting one of the many unknown sources whose voices merge with his own, Tomlinson writes, “‘Blow you, Bill. I’m all right.’ I had the fortune to go when the route was still much as it was in the first chapter of the Genesis. ‘But after all,’ you question me, hopeful yet, ‘nothing can be done with 5000 tons of Welsh cargo in the jungle’” (124). If its contemporary observers say that “nothing can be done with 5000 tons of Welsh cargo,” it is not a question of why build the railroad, but of what—if not the railroad—was under construction in the milieus of the Madeira and Mamoré Rivers. It would be easy to read the words of the anonymous figure as a nostalgic longing for rugged routes and a landscape untainted by infrastructures and technology, which some of the explorers we saw in these four chapters traversed. The crux of the speech reported by Tomlinson, however, is the suggestion of the futility of coal in that environment. Tomlinson is struck by the indifference with which he and the Capella’s crew were received, “Had we arrived too late to help, and were we not wanted?” (161). Although the Capella carried coal that was supposedly needed in Porto Velho, the indifference Tomlinson perceives in regard to the arrival of the steamer is revealing. In the first place, the question of whether it was too late strikes a familiar chord in terms of how technical progress in Latin America has been historically conceived as a delayed process. This conception has been largely replaced by theories that emphasize the unevenness and singularity of modernization. Nevertheless, the question of whether it was too late can be flipped around to refer not to the delay of technological modernization in Latin America, but to bring to the fore the precocious obsolescence of the final stage of a technological era centered around coal, steam-based engines, and electricity. Many local and indigenous peoples may say they have no use for such
technologies, but I doubt they will ever relinquish their canoes. In the end, the ancient and rudimentary will always have been modern.
Conclusion

Narrated from the perspective of technologies in the Amazon, rather than the metropolis, the process of modernization is a thoroughly eschatological one. In an eschatological, enchanting, and non-secular framework, the process of bringing technologies to Amazonian territories is not only one where mastery is far from guaranteed, but also one where the very struggle between nature and technology opens the space for reactions that will reestablish the sense of uncontrollability of nature as creation. If not as creation, at least as a domain that is constantly humbling anthropic rational knowledge and preparedness in action. Industrial, steam, and coal-based technologies thus come to the Amazon not to prevail or disenchant, but to deliver the message of their very end, of their last stage. In biblical Greek, “the last things” is expressed in the plural form tà ἐσχατα. Da Cunha had a good intuition in saying that the Amazon was the last page of the Genesis to be written, except that it was not the last page of the Genesis, but of a technological era. Were we to trace the genesis of the decline of coal and steam-based technologies of nineteenth-century industrialization, it would be misleading to begin with Britain’s recent plans to cut the burning of coal by 2025, with the advocacy and implementation of renewable fuels, or twentieth- and twenty-first-century efforts to move toward ‘cleaner,’ ‘green’ technologies. We would also need to look back at instances such as the mid nineteenth- and early twentieth-century Amazon both because of the pivotal role its ecosystems play in global climate, and because this environment was the target of ambitious plans for the deployment of technologies developed within the ambit of industrial and metropolitan societies.

34 See “In a Stunning Turnaround, Britain Moves to End the Burning of Coal.” Yale E360. Published at the Yale School of Forestry and Environmental Studies. Web. 23 Sept. 2017.
One of the merits an eschatological cultural-historical framework attentive to the interaction between humans, environment, and technology is that it exposes implicit expectations that technology successfully function harbored by the tragic reading of modern history. There is no doubt that the loss of life and conditions of labor in the Madeira-Mamoré railroad were atrocious. However, while Foot Hardman looks at the cultural and ideological conditions that fed the actualization of a ghostly railroad to be mourned, I look at the explorers whose actions worked as justifications for the construction to show this episode to be prophetic of many more in the trajectory of technological expansion. If religious and theistic scholars, together with those that continuously denounce the impossibility of linear progress, may be more comfortable with the idea that things and worlds do come to an end, it was with the rise of ecocriticism, environmental studies, and the Anthropocene as a conjecture that a heightened eschatological sensibility was renewed. Prior to ecocritical and environmental scholarship’s inquiries on species extinction, finitude, and the definition of a new geological era, an eschatological historical perception was to be seen mostly in the experiences and reactions to the Second World War. Recently, scholars exploring these disciplines formulated the need to adopt theoretical, ethical, and moral outlooks that take seriously the claim that language and culture can no longer be studied solely as human or cultural products.

When atmospheric chemist and Nobel Prize winner Paul Crutzen coined the term “Anthropocene” in 2000, he and his co-authors “[i]nitially nominated the beginning of the industrial revolution at the end of the eighteenth century” (Hamilton, Bonneuil, and Gemenne, 1). The Anthropocene is broadly understood to name the geological era where anthropic action is a tellurian force among other natural forces, rather than belonging in a dimension whose evolution can only be told from the perspective of human history. Since Crutzen’s coinage, the definition,
periodization, field of applicability, and epistemic implications of the term have expanded at an astounding rate, something that I can only mention but not delve into in this occasion.

Theoretical inquiries into the Anthropocene have sparked many insights on the need to rethink our historical narratives. In “Human Destiny in the Anthropocene,” for instance, Clive Hamilton proposes that “In the Anthropocene, in addition to the past we seek to escape, now we have a future we want to avoid; we are squeezed from both ends, and any new emancipatory project must transcend the progressive categories of the past” (39). Throughout this dissertation, I proposed a cultural-historical framework in which the projection, arrival, and deployment of technologies of mobility in the Amazon are not understood as agents of an emancipatory project progressively delivering man to an environment free of aporias. Instead, my analysis of the dialectic relation between exploration and engineering shows that progress is neither discrete nor linear. Explorers are intrinsically inclined to traverse difficult terrains and aporetic landscapes to overcome the limitations of their techniques and technologies, to probe them, and further expand them. Engineering projects such as the Madeira-Mamoré railroad, intended to decrease the reliance on portage and bypass the impassable parts of the Madeira River, seek to overcome natural obstacles only to build more aporias, and discover the limitations of technology a posteriori.

I believe exploration is a technical and cultural practice with strong potential to be a historical source of transcendence of progressive categories of the past because it has acknowledged that rudimentary technologies are often more reliable than what we qualify as modern or advanced equipment. This is not to say we should all learn how to use canoes, though this is a valuable skill, but to call for an appreciation of practices, languages, and representations that provide access to a more perennial and primary dimension of the history of technology. In fact, unpredictable and hazardous weather phenomena such as Hurricanes Katrina, Sandy, and Maria (not to mention
many other natural and man-made disasters) have given rise to an abundance of visual representations where improvised and rudimentary uses of technology – already characteristic of developing nations – are seen as the only and last resort of those affected. That these images establish a field of representation where rudimentary objects are seen as last resort in catastrophic situations, becoming thus veritable ‘eschatological tools,’ evidences that cultural studies need to seriously engage how physical conditions and technical practices shape new meanings and cultural associations in a world exposed to the consciousness of climate change and the Anthropocene conjecture.

Within the discursive field of the Anthropocene, this eschatological outlook has affinities with what is called “eco-catastrophist” narratives, though I am more fond of its skepticism than its catastrophist inclinations. As Cristopher Bonneuil explains in “The Geological Turn: Narratives of the Anthropocene,” eco-catastrophist narratives and approaches focus on the resilience of systems to endure in the face of cyclical developments such as growth, collapse, and reorganization without “[l]osing its key features and functions” (27). This approach advances “[l]ow-tech – though high intelligence – solutions (such as permaculture, economic re-localisation, and local community-owned renewable energy) over high-tech solutions (such as transgenic crops, nanotechnology and geoengineering” (27). To a great extent, indigenous peoples and subsistence agriculture communities have been practicing low-tech and high-intelligence approaches to natural challenges for a long time. For that matter, communities that live off low-tech systems are increasingly vulnerable in the face of the expansion of monoculture and industrial agricultural practices to regions such as the Amazon.

Finally, we find in the discourse of the Anthropocene new versions of the reenchantment of physical reality. If the Anthropocene conjecture, ecocriticism, and environmental studies
motivate an epistemic reconfiguration in how humanists, social scientists, and natural scientists learn from each other, the use of scientific facts and insights has not necessarily resulted in “scientificizing” – to put it awkwardly – knowledge. This is evident in Euclides da Cunha’s Os sertões and writings on the Amazon, where man is seen as a tellurian product of geological, climatic, and biological forces, and is true once again. The ecocritical and ‘Anthropocenic’ re-naturalization35 of the human as a force brought about an intensified perception of the interconnectedness of living and non-living creatures, which had been previously attributed to indigenous, animistic, and religious thinking. The enchanting effect of the discourse of interconnectedness stems from the liberation of the human from the exclusive purview of social and technological pressures. Alienation is here overcome by expanding the horizon of human action to the whole of nature and by reinserting the human into a multi-species community where he is one among many inhabitants. If disenchantment and alienation could not be overcome socially and politically among humans, advocates of the Anthropocene and ecocriticism say, there is hope for humans among other species and non-living creatures.

35 Interestingly, the naturalization of the human in the Anthropocene conjecture and adjacent secular discourses resonates with Romantic, currents of thought where the highest intellectual and spiritual achievements are the contemplation of the natural world as a source of human emancipation, which can be traced to Alexander von Humboldt, Caspar David Friedrich, Wordsworth, Thomas Cole, and many others.
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