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UNIVERSITY OF CALIFORNIA
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Ideologies of Extraction in Premodern Literary Environments

A Dissertation submitted in partial satisfaction
of the requirements for the degree of

Doctor of Philosophy

in

English

by

Chelsea Elizabeth Keane

June 2024

Dissertation Committee:

Dr. Andrea Denny-Brown, Chairperson

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2024

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ABSTRACT OF THE DISSERTATION

Ideologies of Extraction in Premodern Literary Environments

by

Chelsea Elizabeth Keane

Doctor of Philosophy, Graduate Program in English
University of California, Riverside, June 2024
Dr. Andrea Denny-Brown, Chairperson

“Ideologies of Extraction in Premodern Literary Environments” examines how the notion of extractivism iterates itself in depictions of literary environments from the early fourteenth century through the early seventeenth century. Extractivism as I discuss it is an ideology in which people or texts adopt mindsets wherein ecological entities serve a means-end function. By looking at a variety of canonical texts composed through the European medieval and early modern periods, this dissertation examines the breadth and evolution of this culturally contingent and socially hegemonic mindset. Such extractive ideologies manifest in moments that otherwise demonstrate acute ecological awareness or innovative depictions of environmental phenomena, often to uphold the texts’ religious or colonial framework. Though the type of extractivism I discuss is intangible, it remains materially significant. My dissertation resists immediately turning to allegorical interpretations of literary environments, instead approaching them as complex, material entities. Each chapter engages a different set of interdisciplinary theories and frameworks which depend on that chapter’s specific environments of interest.

Beginning with the abyssal depths of medieval waterbodies, my first chapter considers the waterways and swamps of Dante Alighieri's *Inferno* in terms of Steve Mentz's notion of seep ecology. The subsequent chapter examines literary deep seas in Julian of Norwich's *Shewings* and the Middle English poem *Patience*, building off the work of scholars in blue humanities and depth studies, like Melody Jue, Philip Steinberg, and Kimberly Peters. Moving upward, the third chapter discusses the implications of air and atmospheric travel in the sixteenth-century epic poem *Orlando Furioso* by Ludovico Ariosto, building off Robert A. Heinlein's definitions of extrapolative and speculative science fiction. The final chapter considers extraction alongside Simon C. Estok's notion of ecophobia, via the juxtaposition of José de Acosta's *Natural and Moral History of the Indies* and William Shakespeare's *The Tempest*. Collectively, these chapters demonstrate how extractive ideologies become materially significant in the colonial enterprise and academic criticism. This project thus considers the evolution of this rhetoric and extractive mindset to provide a meaningful literary analysis that interweaves conceptions of the environment and its (mis)uses with the political, religious, and colonial motivations of premodern Europe.

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Introduction

One of the most popular Middle English lyrics consists of a seemingly simple quatrain:

Erþe toc of erþe erþe wyþ woh,
Erþe oþer erþe to þe erþe droh,
Erþe leyde erþe in erþene þroh,
þo heuede erþe of erþe erþe ynoh.
(MS Harley 2253, f. 57v)

This c. 1307 “erthe toc of erthe” lyric, contained in MS Harley 2253, repeats its keyword twelve times in its short four lines. Each line presents a dynamic relationship between two kinds of *erthe*: whether that be man, creature, corpse, or environment. The purposeful ambiguity of the lyric becomes a fascinating repository of meaning when twenty-first century environmental humanists use it to think about how early fourteenth century English society may have thought about the relationship between themselves and the environment. The lyric suggests a cyclical and symbiotic relationship between all the potential *erthes*. Each line revisits anew another *erthe*-y relationship, suggesting not only a single human’s embedded relationship with the *erthe* from which they came and to which they will go, but a more cosmic or infinite interconnectedness,¹ as each *erthe*

¹Twenty-first century readers might think of the legacy of Antoine Lavoisier’s 1789 discovery of the Law of the Conservation of Mass, in which he discovered that matter can neither be created or destroyed. Or, perhaps, of the astrobiological projections which hypothesize that the vast majority of the universe’s matter—including that which makes up every human as well as the Earth itself—was created during the Big Bang, and the rest was created from nuclear fusion that took place deep within “first generation stars” created out of the Big Bang’s hydrogen, helium, and lithium (Lindsey Hays, “Are We Really Made of Star Stuff?” *NASA: Astrobiology Learning*. Updated April 30, 2024, <<https://astrobiology.nasa.gov/education/alp/are-we-really-made-of-star-stuff/>>). Or, perhaps, they might think of simpler nodes of ecological connectivity, like the food chain or decomposition cycle learned in many elementary schools.

mutates and re-manifests both across a single line and between lines, looping back into cyclical relationships between *erthes* again and again.

This quatrain is one lyric amid a larger *earth upon earth* tradition, which adapts Genesis 3:19: “Remember, man, that you are dust and that you shall return to dust.” This association aligns the lyric with a larger group of instructional writing, including “the earlier group of poems relating to *The Soul and the Body*, and with the more or less contemporary *Dance of Death*”²: the former with its roots in the late 10th century Vercelli Book and Exeter Book, and the latter in the late 13th century *Danse Macabre*, though both traditions stretched throughout the European Middle Ages. The *earth upon earth* tradition—of which “erthe toc of erthe” is the earliest example—marks a distinctly English entry into this group of literature that reckons with the nature of material, spiritual, and divine existence.³ Far from being straightforward, the lyric loads meaning into its keyword “erthe,” whose contextually dependent significations have compelled the Middle English Compendium to include thirteen main definitional entries, most of which are further delineated into anywhere between two and nine additional definitions.⁴

²Hilda M.R. Murray, *The Middle English Poem Erthe Upon Erthe: Printed in Twenty-Four Manuscripts*. (London: Oxford University Press, Early English Text Society, 1911), ix.

³Ingrid Nelson points out that MS Harley 2253 is grouped not with the rest of the “Harley lyrics,” but with a trilingual assortment of texts about mortality (“Form’s Practice: Lyrics, Grammars, and the Medieval Idea of the Literary,” in *The Medieval Literary: Beyond Form*, ed. Robert J. Meyer-Lee and Catherine Sanok [Suffolk, UK: Boydell & Brewer, 2018] 40), emphasizing this association.

⁴See: “erthe,” *Middle English Compendium*, <<https://quod.lib.umich.edu/m/middle-english-dictionary/dictionary/MED14387>>

While MS Harley 2253's "erthe toc of erthe" lyric might be a short quatrain, Ingrid Nelson draws attention to how this "near-mystical compression" actually results in a series of puns that "lend it the quality of a riddle whose meaning cannot quite be resolved."⁵ In any given moment, "erthe" can variably refer to mankind, dirt or topsoil, the "dust" of Genesis 3:19, the physical globe, or any variety of conceptualizations of the physical land we inhabit, including the earth as arable, the earth as surface, the earth as grave, the earth as element, the earth as opposed to the sea, the earth as mortal dwelling place, or the earth as a metonym for worldly things. In this multiplicity, D. Vance Smith identifies "something like a nonsense word," with so many meanings that it "is virtually impossible to disentangle."⁶ Smith further notes that this multivocality invites the reader to understand their relationship with the environment as both one of metamorphosis and one, notably, of *non*-metamorphosis, as man-as-earth and grave-as-earth are both still, in essence, *erthe*; as such, he suggests that "the difference between them is one we make ourselves."⁷

I begin this introduction with this lyric to highlight the distinction between ecologically necessary, natural, or inevitable forms of "taking," and harmful, extractive modes of "taking." Though I argue that this version of the lyric depicts the former, it is

⁵Ingrid Nelson, "Form's Practice: Lyrics, Grammars, and the Medieval Idea of the Literary," in *The Medieval Literary: Beyond Form*, ed. Robert J. Meyer-Lee and Catherine Sanok (Suffolk, UK: Boydell & Brewer, 2018), 39.

⁶D. Vance Smith, *Arts of Dying: Literature and Finitude in Medieval England* (Chicago: University of Chicago Press, 2020), 66.

⁷Smith, *Arts of Dying*, 66.

certainly not free from what Gillian Rudd calls the “latent insecurity” and “anxiety created in humans when considering our relation to the natural world.”⁸ Such unease is evident from the lyric’s inclusion in the larger *memento mori* trope, as I mentioned briefly above. However, this does not necessarily create a negative valence to the idea that “erthe toc of erthe.” Indeed, to “take” of earth is an essential principle that underwrites all biological existence as we know it.⁹ Without taking of earth, organic life cannot exist: and earth will certainly take of organic life, should it die. Extraction, as I use the term, does not denote a simple action of taking something from one place to another or removing something (tangible or intangible) from an environment. Extraction is not a biological process, an inevitability, or a necessity. Extraction, as I understand it, is an action or point of view bound up within larger social systems, often used to establish exploitative and unsustainable relationships with environmental entities, or to establish or reinscribe hegemonic social structures invested in reproducing religious, political, or racial hierarchies between groups of people (or some combination of the two).

The four-line “erthe toc of erthe” lyric is one early entry in a larger lineage of *earth upon earth* lyrics that proliferated in England through the nineteenth century.

Looking at subsequent examples within this family of lyrics can further highlight the

⁸Gillian Rudd, “Thinking Through Earth in Langland’s *Piers Plowman* and the Harley lyric ‘Erthe toc of erthe’,” *Ecotheology: Journal of Religion, Nature & the Environment* 8, no. 2 (2003): 138.

⁹See: “tāken,” Middle English Compendium, <<https://quod.lib.umich.edu/m/middle-english-dictionary/dictionary/MED44420>>. While it is an adaptable verb with many applications that vary contextually, some relevant definitions include: “To pick up and put or place,” to “take (sth. and do sth. to it or perform some operation with it),” “To take possession of something,” “To have a share, participate, partake,” “to remove (sb. or sth.) physically (from sb. or sth., from a place), take away, carry off,” etc.

difference between the act of taking and an ideology of extraction. The Early English Text Society has collected various *earth upon earth* texts from twenty-four manuscripts ranging from the early fourteenth to the seventeenth centuries. Many of the subsequent versions expand upon the lyric, adding additional verses and significantly modifying and refining meaning by inserting guiding prepositions. Nelson writes that these subsequent versions “dilat[e] the syntax of the original with prepositions that clarify the relationships implicit in the equivocal quatrain,” via “relational propositions.”¹⁰ She analyzes several iterations of the *earth upon earth* tradition, discussing how these variations “dilate” into other prevalent cultural tropes and commonplaces such as the “clothing of the naked” commonplace and the *ubi sunt* commonplace,¹¹ thus as time goes on, losing the “equivocation” of the original quatrain in favor of “didactic clarity.”¹²

As this poetic change occurs, we can perhaps begin to witness an ideology of extraction become more evident. The version extant in William Billyng’s manuscript, dating from roughly 1400-1430, is six stanzas, but it begins:

Erth owte of erth is wondyrly wrought,
Ffor erth hath geten of erth a nobul thyng of noght,
Erthe uppon erthe hath set alle hys thocht
How erthe uppon erthe may be hygh broght.¹³

¹⁰Nelson, “Form’s Practice,” 41.

¹¹Ibid., 43.

¹²Ibid., 47.

¹³Murray, *The Middle English Poem Erthe Upon Erthe*, 5.

Gillian Rudd remarks upon how the original quatrain's emphasis on "woh," calls to mind the "evil of seizing earthly goods while alive, reminding us that they will benefit us little once we are in the grave,"¹⁴—though what these seized goods are remains ambiguous. This later version postpones the turn to "woh," instead expanding upon how one type of earth might be "wroght" by another. Man is not simply "wroght" from dust in the Christian worldview, nor is "hygh broght" to earth again in death. The "thought" of earth that man-as-"earth" sets himself upon is clarified in the third stanza: "Erth wynnyth uppon erth both castellys and towris / Than sayth erth unto erth: 'This is alle owres'."¹⁵ Man's relationship with earth becomes one of dominion. Here, earth does not take of earth for survival's sake, but for larger cultural, political, and imperial concerns, as they seek to surveil, conquer, and own an earth that is "alle owres," existing solely for human benefit. The third stanza's elaboration gives new significance to the opening stanza: in this view, the earth "wondyrly wroght" from earth signifies not only man from dust, but perhaps also material extracted for the sake of humankind's drive toward dominion, and for "erth" upon which to them built the "castellys and towris" that signify conquest of the land these materials hail from: "nobul" things which are gotten from "noght."

The opening two lines of the fifteenth century MS Harley 4486 version complement this line of thought, as they amend the previous version into: "Erthe owte of erthe is wonderly wrowghte, / Erthe of the erthe hathe gete an abbey of nawte."¹⁶ The line

¹⁴Rudd, "Thinking Through Earth," 146.

¹⁵Murray, *The Middle English Poem Erthe Upon Erthe*, 5.

¹⁶Ibid., 13.

“nobul thyng of noght” is amended into “an abbey of nawte,” further dilating the previously ambiguous meaning of “wroght” into a far less ambiguous vision of environmental extraction, in which humankind positions the environment as an extractable resource to facilitate the production of its physical and spiritual structures. Per the Middle English Compendium, “abbey” can refer to both a community of religious figures and the physical building this community convenes in, further entwining material extraction with larger socio-religious structures.¹⁷ The late fourteenth or early fifteenth century MS Balliol 354 also changes the first two lines, but in this case, it amends them to: “Erth owt of erth is worldly wrowght, / Erth hath goten oppon erth a dygnite of nowght.”¹⁸ This version’s emphasis on “worldly wrowght” has new connotations of physical extraction, which humanity uses in turn to create new “erth” to bring “dygnite” to humankind. Per the Middle English Compendium, the adjective “worldlī” indicates not only something related to the plane of human existence, but of material that has “qualities of the physical world [...] also, occurring or existing as a phenomenon or an object in the physical world.”¹⁹ In other words, something that is physically or corporeally “wrought” from the earth.

The slight alterations in the *earth upon earth* tradition thus represent a burgeoning extractive ideology that begins to iterate itself across the centuries. From the original

¹⁷ See: “abbey,” *Middle English Compendium*, <<https://quod.lib.umich.edu/m/middle-english-dictionary/dictionary/MED44>>

¹⁸ Murray, *The Middle English poem Erthe Upon Erthe*, 27.

¹⁹ See: “worldlī,” *Middle English Compendium*, <https://quod.lib.umich.edu/m/middle-english-dictionary/dictionary/MED53434/track?counter=1&search_id=65989546>

quatrain's emphasis on the ambiguous drive to take of earth, later versions of the lyric expand upon extractive qualities of mankind's relationship with the environment, specifically in the Christian context in which beings are hierarchized upon the *scala naturae* and humankind is granted divine dominion over the entities below them.²⁰ The *earth upon earth* tradition is also a good place to begin to consider ideologies of extraction because it exhibits how seemingly small rhetorical changes can indicate larger social phenomena or viewpoints. Humanity does not only work "worldly" goods from the earth for its structures, but these physical entities are microcosms of their larger socio-cultural structures, and within this metonymy, a process of extraction seemingly also creates "dygnite" of nothing. An ideology of extraction is developed wherein, under the larger socio-cultural frameworks that govern their society, humankind is given liberty to take from the world around them in order to perpetuate these larger cultural aims. The intention of the extractive mindset is to take from environments for dominant political, religious, or other cultural paradigms: this intention is what distinguishes extractive ideologies from other forms of ecologically necessary "taking."

With this developing ideology in mind, this dissertation is concerned with the various ways that medieval and early modern texts formulate ideologies of extraction in

²⁰While the concept of this "Great Chain of Being" is popular throughout medieval Europe, Arthur O. Lovejoy finds its origins in the writing of Aristotle, who imagined "all animals in a single graded *scala naturae* according to their degree of perfection" (*The Great Chain of Being: A Study of the History of an Idea* [New Brunswick: Transaction Publishers, 2009], 58). Kellie Robertson expands on the medieval, Christian version of the Great Chain, "beginning with God and moving down the ladder" (*Nature Speaks: Medieval Literature and Aristotelian Philosophy* [Philadelphia: University of Pennsylvania Press, 2017], 60). Robertson's explanation attends to a further logic of the Great Chain, in which "a stable moral order" is associated with "a static hierarchy" (57).

their premodern literary environments, and to what ends. My chapters mainly examine canonical European literature ranging from the early thirteenth to the early seventeenth century,²¹ though they all draw upon multidisciplinary sources from the last millennium. This breadth of intertexts helps to illuminate the connective tissue of these ideologies across time and place. To that effect, my primary sources range from Italian to Spanish to British texts, yet these national divides are not at all distinct: both the Italy of Ludovico Ariosto and the England of William Shakespeare, for instance, were heavily influenced by the burgeoning colonial endeavors of the Spanish, while Spanish travel writers like José de Acosta were deeply influenced by the same Ancient Greek and Roman philosophers hailed by Dante over two centuries earlier. While some of my chapters explicitly address the interplay of ideas between western European countries across centuries, all are influenced by larger ecologies of intellectual and cultural exchange across place and time.

My dissertation especially attends to burgeoning extractive paradigms across this geographical and temporal range. My first three chapters slowly move upward in space and time: from subterranean watersheds in Dante's 1321 *Inferno*, to fourteenth-century deep-sea environments in the anonymous *Pearl*-poet's *Patience* and Julian of Norwich's *Shewings*, to early sixteenth century airspace in the 1532 edition of *Orlando Furioso*. My first two chapters discuss ideologies of extraction in specific medieval contexts, as texts begin to naturalize an approach to the environment that formulates them as perennially

²¹ While many would differentiate centuries in this block of time as either "medieval" or "early modern," I often refer to them collectively as "premodern." In individual chapters, I specify by specific century wherever possible.

“of use” to human cultural formations. I identify several non-tangible ways these texts depict extraction through their narratives. My third chapter continues to examine the way that environments become appropriated into recognizable human frameworks and extracted from to suit human cultural endeavors, but begins to discuss how new forms of global coloniality affect this extant project. After traveling from Dante’s underground waters into medieval English seas and finally Ariosto’s airspace, my fourth chapter more robustly examines how extractive ideology iterates itself in the colonial era, first in travel literature and then in the related spectacle of the English theater.

Where possible, my chapters attempt to seriously reckon with the materiality of various environments and the physical, lived consequences of burgeoning scientific discourse. Many texts I examine are popularly interpreted as allegory. While the allegorical dimensions of premodern European texts are often vital aspects of their overall narrative and, indeed, are meaningful characteristics of the texts within their respective contextual milieus, my chapters postpone or avoid immediately turning to allegorical interpretations of environments. In her discussion of cultural geopolitics and scholarly criticism, Julietta Singh describes the “colonial and neocolonial mastery that continue to render some beings more human than others.”²² Singh focuses on “the language of mastery that recurs” through texts, tying this to “the more overtly violent aspects of colonial mastery.”²³ She draws our attention to how narratives can both enact

²²Julietta Singh, *Unthinking Mastery: Dehumanism and Decolonial Entanglements* (Durham, NC: Duke University Press, 2017), 4.

²³*Ibid.*, 8-9.

and demand the readerly enactment of mastery: “Matter is not stable and cannot be mastered, despite the narrative fiction that enables us to imagine and engage it as such.”²⁴ Allegory is one such narrative mode, as it abstracts people and environments, delineates the criteria of a “good” human, and demands that its reader decode its hierarchies of meanings. Allegory thus attempts to both gain mastery over matter and engage the reader in a process of mastery themselves, in what Singh calls (in the context of Marxism and postcolonial studies) an “overcoming, a mastering of that which masters.”²⁵ Allegory, in this way, manifests as a “master narrative” which not only sets the terms for hegemony and hierarchy, but demands that readers re-enact mastery themselves in their own interpretive practice.²⁶

To that end, my dissertation also attempts to resist the impulse to claim that I am “uncovering” a specific interpretation of my chosen texts. This type of reading calls to mind Paul Ricoeur’s “hermeneutics of suspicion,” which Rita Felski describes as “a mode of interpretation that adopts a distrustful attitude toward texts in order to draw out meanings or implications that are not intended and that remain inaccessible to their authors as well as to ordinary readers.”²⁷ Suspicious reading thus intends to deconstruct

²⁴Ibid., 18.

²⁵Ibid., 6.

²⁶In an interview with Bill Moyers, Toni Morrison defines a master narrative as “whatever ideological script that is being imposed by the people in authority on everybody else. The master fiction” (“Toni Morrison on Love and Writing,” *Bill Moyers*, March 11, 1990, <<https://billmoyers.com/content/toni-morrison-part-1/>>).

²⁷Rita Felski, “Suspicious Minds,” *Poetics Today* 32, no.2 (2011): 216.

the hegemonies that invisibly animate texts, digging into the subconscious revelations that expose their true ideologies. The idea that there is a hidden meaning within texts to be unearthed leads Felski to discuss the inherently extractive metaphor embedded within this type of reading. She calls this style of reading “digging down”:

Matters of import are shrouded, obscured, and inaccessible to the casual observer; they can only be mined via an exacting technique of close reading. What a text seems to be saying is either distracting or deceptive; its subterfuges must be resisted, its superficiality proclaimed. The task of interpretation is to burrow beneath these layers of concealment to arrive at a more fundamental grasp of how things are. Real meaning is at odds with apparent meaning and must be painstakingly exhumed by the critic.²⁸

Critics must thus deduce a “master code” by which they “redefine cultural artifacts as socially symbolic acts in order to restore a buried reality of material conditions.”²⁹ The intention behind this type of reading is to consider “a text’s complicity with power relations,” thus making “digging down” into “an ethical and political imperative [...] to draw out whatever [a text] refuses to own up to.”³⁰ However, the metaphor used to suggest this approach also seems—to recall Singh’s phrasing—to lead to a re-enactment of mastery in interpretive practice, as readers gain control over texts and “extract” hidden meanings from them. By explicitly using the language of physical extraction in her imagine of “mining,” Felski comments on how the ideologies of a text and the methods

²⁸Rita Felski, *The Limits of Critique* (Chicago: University of Chicago Press, 2015), 56.

²⁹Felski, *The Limits of Critique*, 57.

³⁰*Ibid.*, 58.

one undertakes to “unearth” them might translate into the embodied habit of the critic: a text “springs to life via a mundane yet mysterious process in which words are animated by readers and reanimate readers in their turn.”³¹ Indeed, this is perhaps exactly the habit of reading that a text espousing an ideology of extraction would wish for its readers. I attempt to resist being “reanimated” by extraction, in “digging down” or “looking behind the text—for its hidden causes, determining conditions, and noxious motives.”³² Rather, I answer Felski’s call to place myself “in front of the text, reflecting on what it unfurls, calls forth, makes possible.”³³

When Felski looks forward into the future of criticism, she proposes that “[i]nterpretation becomes a coproduction between actors that brings new things to light rather than an endless rumination on a text’s hidden meanings or representational failures.”³⁴ In reading for ideologies of extraction in these texts, I attempt to engage in the opposite of an extractive reading practice. That is, what if readers resist the allegorical meaning that must be investigated and uncovered, and ruminate instead on the possibilities and significations of a texts’ more material levels of meaning as they create and depict literary environments? In a world of premodern European literature in which the allegory is indeed a major form of literary production, taking a texts’ material ecologies and environments at face value imparts significations not readily apparent in

³¹Ibid., 175.

³²Ibid., 12.

³³Ibid.

³⁴Ibid., 174.

the allegorical mode. For example, in my first chapter, if one were to stand “behind” the text of Dante’s *Inferno* to read it allegorically, Dante-pilgrim’s journey through Hell’s environments represents a recognition and rejection of the sinful course his life has taken and primes his ascension toward Heaven. However, shifting our perspective to stand in “front” of it and read it materially, we see ideologies of extraction at work as he masters and manipulates physical environments for spiritual gain. Even when discussing a rhetorical flourish that seems covert or embedded, such as the “implicit ecophobia” I discuss in my fourth chapter,³⁵ I do not seek to uncover hidden ideologies of extraction that lie latent within texts, but instead to examine the ways texts present extractive ideologies to their readers that are often so obvious that they become nearly mundane or unnoticeable, to specific ideological ends.

In reading this way and attending to the rhetorical dimensions of ideologies of extraction across my chosen body of canonical works, I contribute to the growing discourse about what constitutes an ecology or environment worthy of study and serious consideration; I examine material or practical aspects of texts and their environments that may historically have been less remarked upon in favor of more allegorical modes of reading, and, by attending to these aspects, I consider how and to what effect ideologies of extraction manifest in European literature throughout the premodern period.

³⁵As I expand upon in my fourth chapter, while ecophobia is a groundless fear or hatred of the natural world, moments of implicit ecophobia are when this fear manifests in small-scale, seemingly mundane rhetoric, as opposed to the large-scale spectacle of natural disaster and catastrophe.

Environmental Humanities Beyond the Green

This dissertation and my work in the environmental humanities writ large is informed by a push in the last decade or so to expand the objects of study that fall within the purview of ecologically minded consideration. This most recent critical investment is indebted to its own critical genealogy, which normalized the idea of considering ecology and literature in the same breath: a pairing once considered outlandish, or even diametrically opposed. While writers and critics have long thought about the relationship between people and planet, ecocriticism began to coalesce in the 1970s as a result of the increasing popularity of the 1960s environmental movement. Ecocriticism as a term can be traced back to William Rueckert's 1978 article "Literature and Ecology: An Experiment in Ecocriticism," where he writes: "I am going to experiment with the application of ecology and ecological concepts to the study of literature [...] by applying ecological concepts to the reading, teaching, and writing about literature."³⁶ At the outset of the field, Rueckert sets the stakes for the discipline: "keeping the human community from destroying the natural community."³⁷ This activist bent has been present since the field's inception, through to the present day. Rueckert states that the pairing of literature and ecology was one characterized by "incongruity" formed between two disciplinary "antagonists."³⁸ At one point, he self-consciously writes, "As absurd as this may sound,

³⁶William Rueckert, "Literature and Ecology: An Experiment in Ecocriticism," *Iowa Review* 9.1 (1978): 73.

³⁷*Ibid.*, 73.

³⁸ *Ibid.*

this paper is about literature and the biosphere.”³⁹ The fact that no ecocritic today would dream of saying that the pairing between ecology and literary studies is “absurd” speaks to the development of the field in the last fifty years.

The present flourishing state of the field escalated in the early 2000s, as environmental historians, ecocritics, and other scholars working at the intersection of environment and social sciences and humanities began to collectively think of themselves as working within the environmental humanities, a field informed at its outset by other disciplinary fields such as indigenous studies and feminist studies.⁴⁰ This era of environmental humanities also saw the field move away from its initial critical focus,⁴¹ which largely concerned non-fiction nature writing. Laurence Buell calls critics in this first generation “contemporary new world pastoralists” who wish to “speak for the green world.”⁴² Around the turn of the millennium, this second era of environmental humanities asked more complex questions about the very nature of “environment,” “ecology,”

³⁹Ibid., 74.

⁴⁰For more on the coalition of “environmental humanities” and the influence of other scholarly fields, see: Val Plumwood, *Feminism and the Mastery of Nature* (London: Routledge, 1993); Deborah Bird Rose and Libby Robin, “The Ecological Humanities in Action: An Invitation,” *Australian Humanities Review* 31-32 (2004); Deborah Bird Rose et al., “Thinking Through the Environment, Unsettling the Humanities,” *Environmental Humanities* 1, no 1 (2012): 1-5.

⁴¹Following Laurence Buell, Scott Slovic suggests that critics move away from calling the layered critical tendencies in the field “waves,” instead calling them “palimpsests” (Scott Slovic, “The Third Wave of Ecocriticism: North American Reflections on the Current Phase of the Discipline,” *Ecozon@* 1, no. 1 [2010]: 5).

⁴²Laurence Buell, *The Environmental Imagination: Thoreau, Nature Writing, and the Formation of American Culture* (Cambridge, MA: Harvard University Press, 1995), 55. For more on the first wave, see *The Ecocriticism Reader: Landmarks in Literary Ecology*, eds. Cheryll Glotfelty and Harold Fromm (Athens, GA: The University of Georgia Press, 1996). Glotfelty, among others, was also the founder of the Association for the Study of Literature and the Environment in 1992.

“human,” and “non-human” as concepts.⁴³ The proliferation of criticism soon after spanned topics ranging from increased theorization of ecofeminism,⁴⁴ to considerations of “urban” environments,⁴⁵ to additional intersections between environmental humanities and other theoretical fields too numerous to fully account.⁴⁶

One of the characteristics of the post-2000 era of environmental humanities was its push to nuance and subdivide previously recognized critical categories. Scott Slovic locates this tendency in its own third “palimpsest” or wave in the broader field which,

⁴³This generation’s desire to move beyond Romantic-Era writing was so prevalent that it found itself directly reflected in the titles of the era, for instance, Karla Armbruster and Kathleen R. Wallace’s aptly titled 2001 edited collection, *Beyond Nature Writing: Expanding the Boundaries of Ecocriticism* (Charlottesville: University Press of Virginia, 2001).

⁴⁴Greta Gaard, *Ecofeminism: Women, Animals, Nature* (Philadelphia: Temple University Press, 1993); Greta Gaard and Patrick D. Murphy, eds., *Ecofeminist Literary Criticism: Theory, Interpretation, Pedagogy* (Urbana: University of Illinois Press, 1998); Douglas Vakoch, ed. *Feminist Ecocriticism: Environment, Women, and Literature* (Plymouth, UK: Lexington Books, 2012); Douglas A. Vakoch and Sam Mickey, eds., *Literature and Ecofeminism: Intersectional and International Voices* (Oxford, UK: Taylor & Francis, 2018); Douglas A. Vakoch, ed. *The Routledge Handbook of Ecofeminism and Literature* (New York: Routledge, 2022).

⁴⁵See: David W. Teague and Michael Bennett, eds. *The Nature of Cities: Ecocriticism and Urban Environments* (Tucson: University of Arizona, 1999); Christopher Schliephake, *Urban Ecologies: City Space, Material Agency, and Environmental Politics in Contemporary Culture* (Plymouth, UK: Lexington Books, 2014); Scott Slovic, Swarnalatha Rangarajan, Vidya Sarveswaran, eds. *Ecoambiguity, Community, and Development: Toward a Politicized Ecocriticism* (Lanham, MD: Lexington Books, 2014).

⁴⁶For a small selection, see: Serpil Opperman, ed. *New International Voices in Ecocriticism* (Plymouth, UK: Lexington Books, 2014); Matthew J.C. Cella, ed. *Disability and the Environment in American Literature: Toward an Ecosomatic Paradigm* (Plymouth, UK: Lexington Books, 2016); Chris Campbell and Michael Niblett, *The Caribbean: Aesthetics, World-ecology, Politics* (Liverpool, UK: Liverpool University Press, 2016); Jay Sibara and Sarah Jaquette Ray, *Disability Studies and the Environmental Humanities: Toward an Eco-Crip Theory* (Lincoln, NE: University of Nebraska Press, 2017); Maria Löschnigg, “Native Knowledge Systems and the Cultural Ecology of Literature,” in *Green Matters: Ecocultural Functions of Literature*, ed. Maria Löschnigg and Melanie Braunecker (Leiden: Brill, 2019), 271–294; Nicole Seymour, “Queer Ecologies and Queer Environmentalisms,” in *The Cambridge Companion to Queer Studies*, ed. Siobhan B. Somerville (Cambridge, UK: Cambridge University Press, 2020), 108–122; Douglas A. Vakoch, ed., *Transecology: Transgender Perspectives on Environment and Nature* (Oxford, UK: Taylor & Francis, 2020); Alex A. Moulton and Inge Salo, “Black Geographies and Black Ecologies as Insurgent Ecocriticism,” *Environment and Society: Advances in Research* 13 (2022): 156–174.

among other noticeable changes,⁴⁷ included “critiques from within” hitherto absent from the field at large.⁴⁸ One of the critiques from within that particularly animates the present study was the deconstruction of the concept of “green studies.” Inspired by concepts such as Gilles Deleuze and Félix Guattari’s rhizomatic theory⁴⁹ and Timothy Morton’s “hyperobjects” and “ecology without nature,”⁵⁰ ecocritics began to interrogate the limitations of the genre implied by the word “green” to describe both its objects of study and its political investments. Laurence Buell sums up one consequence of limiting criticism to the realm of the “green”: “Ecology as green also perpetuates the implication of binary nature–culture separation (simplistic for both sides of the human-nonhuman divide) and understates the potential for self intoxicated fetishization of greenery as such.”⁵¹ An association with green recalls the human romanticization or valorization of nature, and therefore the ultimate estrangement of nature from human cultural realms. To speak to the idea that environments, ecologies, and ecosystems are not confined to the physical or metaphorical connotations of “green” Jeffrey Jerome Cohen’s edited

⁴⁷Such as the preservation of contextual-dependent analyses specific to various locales, and the increasing subcategorization of received fields: for instance, “ecofeminism” into “material ecofeminism,” etc. For more see Slovic, “The Third Wave of Ecocriticism,” esp. 7-8.

⁴⁸Slovic, “The Third Wave of Ecocriticism,” 7.

⁴⁹Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (Minneapolis: University of Minnesota Press, 1980).

⁵⁰Timothy Morton, *Ecology Without Nature: Rethinking Environmental Aesthetics* (Cambridge, MA: Harvard University Press, 2008) and *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis: University of Minnesota Press, 2013).

⁵¹Laurence Buell, “Foreword,” in *Prismatic Ecology: Ecotheory Beyond Green*, ed. Jeffrey Jerome Cohen (Minneapolis: University of Minnesota Press, 2013), ix-x.

collection *Prismatic Ecology: Ecotheory Beyond Green* includes contributions from numerous prominent environmental humanists, each focusing on material and philosophical ecological facets of a different color, both inside and outside humanity's visible spectrum.⁵² This turn away from "green" also included, according to Scott Slovic, "emerging discourses of materiality" that related to "ethical engagement, political awareness,"⁵³ as critics increasingly considered not the romanticized aspects of environments, but their lived material circumstances, and all the connotations of climate catastrophe, environmental racism, and injustice that might entail.

Work within premodern environmental humanities largely followed the trajectory set by its umbrella discipline.⁵⁴ These studies perform two key interventions. The first is redefining what counts as an object worthy of ecological inquiry within the realm of premodern literary studies: in other words, "what counts" as nature. Gillian Rudd's 2007 *Greenery: Ecocritical Readings of Late Medieval English Literature* close-reads a variety of literary environments, ranging from trees to wastes to coasts.⁵⁵ Later, Steve Mentz,

⁵²For a robust overview, see Sidney I. Dobrin, *Blue Ecocriticism and the Oceanic Imperative* (Oxford, UK: Taylor & Francis, 2021).

⁵³Slovic, "The Third Wave of Ecocriticism," 8.

⁵⁴What follows is an overview of some representative examples of significant turns in the discipline between roughly 2010 and 2020. The post-2010 proliferation in premodern ecocriticism and environmental humanities is so expansive that, for instance, Amsterdam University Press alone has ten monographs published in their "Environmental Humanities in Pre-modern Cultures" series, which only began in 2017. While environmental humanities is multi-disciplinary, this introduction accounts for major ecological works in literary studies; specific chapters engage more heavily with other disciplines, specifically history.

⁵⁵Rudd's book represents an early entry into the field of premodern ecocriticism; though she has a chapter devoted to seas and coasts, readers can still observe a privileging of "green," even in the book's title. I discuss this further in Chapter 2.

Dan Brayton, Albrecht Classen, and Hetta Elizabeth Howes would more fully expand the ecocritical investigation of seas and coasts,⁵⁶ while the contributors to Hillary Eklund's edited collection *Ground-Work: English Renaissance Literature and Soil Science* expand upon composts, slimes, wetlands, and wastes.⁵⁷ Ken Hiltner's 2011 *What Else Is Pastoral?: Renaissance Literature and the Environment* takes a genre largely interpreted allegorically and grounds his reading in hyper-local contexts about how English communities conceived of their material environments and pressing environmental concerns, like air pollution and deforestation. Rebecca Davis's 2016 *Piers Plowman and the Books of Nature* draws upon a multi-disciplinary body of discourses across the centuries to ask readers to reevaluate medieval concepts about nature entirely. The second large intervention I identify in this era of premodern ecocriticism is the move to localize and contextualize ecocritical analysis. For instance, Vin Nardizzi's *Wooden Os: Shakespeare's Theatres and England's Trees* examines the material influence of woods in Shakespearean drama alongside localized considerations of the early modern English deforestation crisis.⁵⁸ Tiffany Werth and Vin Nardizzi's 2019 edited collection *Premodern Ecologies in the Modern Literary Imagination* draws together numerous

⁵⁶Steve Mentz, *At the Bottom of Shakespeare's Ocean* (London: Continuum International Publishing, 2009); Dan Brayton, *Shakespeare's Ocean: An Ecocritical Exploration* (Charlottesville, VA: University of Virginia Press, 2012); Albrecht Classen, *Water in Medieval Literature: An Ecocritical Reading* (Lanham, MD: Lexington Books, 2018); Hetta Elizabeth Howes, *Transformative Waters in Late-medieval Literature: From Aelred of Rievaulx to the Book of Margery Kempe* (Cambridge, UK: D.S. Brewer, 2021).

⁵⁷Hillary Eklund, ed. *Ground-Work: English Renaissance Literature and Soil Science* (Pittsburgh: Duquesne University Press, 2017).

⁵⁸Vin Nardizzi, *Wooden O's: Shakespeare's Theatres and England's Trees* (Toronto: University of Toronto Press, 2013).

scholars who situate premodern European literary environments alongside their real-world, contemporary, and micro-localized correlatives, demonstrating the usefulness of premodern literatures to modern ecological engagement. My dissertation draws inspiration from both of these critical tendencies in premodern European ecocriticism.

Since 2020, the field of premodern ecocriticism has become increasingly invested in working within intersectional frameworks, particularly critical race studies.⁵⁹ In 2021, Ayanna Thompson, Hillary Eklund, Debapriya Sarkar, and Jennifer Park collectively hosted a panel entitled “Ecology and Pre-Modern Critical Race Studies” at the meeting of the Shakespeare Association of America. Thompson called “for ‘unlearning’ dominantly

⁵⁹For representative examples of this intersection outside premodern studies, see for instance: Joni Adamson and Scott Slovic, eds. *MELUS: Ethnicity and Ecocriticism* 34, no. 2 (2009); Alison H. Deming and Lauren E. Savoy, *The Colors of Nature: Culture, Identity, and the Natural World* (Minneapolis: Milkweed Editions, 2011); Rachel Brahinsky, Jade Sasser and Laura-Anne Minkoff-Zern, “Race, Space, and Nature: An Introduction and Critique,” *Antipode* 46, no. 5, (2014): 1135-1152. Urmi Engineer Willoughby tracks the relationship between race and environmental humanities since the 1980s (“Race, Health, and Environment,” *The Cambridge Companion to Environmental Humanities*, ed. Jeffrey Jerome Cohen [Cambridge, UK: Cambridge University Press, 2021], 70-85). Within premodern studies there is also earlier attention to these topics in fields peripheral to ecocriticism, such as postcolonialism, geopolitics, ethnography, and travel writing. See for instance: Juanita Sundberg, “Tracing Race: Mapping Environmental Formations in Environmental Justice Research in Latin America,” *Environmental Justice in Latin America: Problems, Promise, and Practice*, ed. David V. Carruthers (Cambridge, MA: Massachusetts Institute of Technology, 2008), 25-48; Sierra Lomuto, “The Mongol Princess of Tars: Global Relations and Racial Formation in The King of Tars (c. 1330),” *Exemplaria* 31, no. 3 (2019): 171-92; Kathleen Davis and Nadia Altschul, eds. *Medievalisms in the Postcolonial World: The Idea of the ‘Middle Ages’ Outside Europe* (Baltimore: Johns Hopkins University Press, 2009); Jeffrey Fynn-Paul, “Tartars in Spain: Renaissance Slavery in the Catalan City of Manresa, c. 1408,” *Journal of Medieval History* 34, no. 4 (2012): 347-359; Kim M. Phillips, *Before Orientalism: Asian Peoples and Cultures in European Travel Writing, 1245-1510* (Philadelphia, University of Pennsylvania Press, 2013); Shirin A. Khanmohamadi, *In Light of Another’s Word: European Ethnography in the Middle Ages* (Philadelphia: University of Pennsylvania Press, 2014); Ishan Ashutosh, “Mapping race and environment: geography’s entanglements with Aryanism,” *Journal of Historical Geography* 62 (2018): 15-23. There is also particular attention to the ecological aspects of racialized religion in the period. For representative examples, see: Susan Power Bratton, “Ecological Holism and Theological Dualism as Roots of Environmental Racism: Medieval Lessons for Modern Religious Scholars,” *Worldviews: Global Religions, Culture, and Ecology* 7, no. 1-2 (2003): 27-57; Dorothy Kim, “Reframing Race and Jewish/Christian Relations in the Middle Ages,” *transversal* 13, no. 1, (2015): 52-64.

white knowledge systems, such as ecocriticism,”⁶⁰ evident throughout the early history of the field and its emphasis primarily on white, male, British and American Romantic-era nature writers—identities that subsequently became overrepresented in both the field’s primary and secondary literature. These four scholars mobilized the momentum of their panel into a 2022 SAA seminar entitled “Early Modern Ecocriticism and Critical Race Studies,” which sought to further the conversation about work that examines the intersection of these two theories: a version of this dissertation’s fourth chapter appeared in this seminar.⁶¹ This dissertation thus seeks to move “beyond” consideration of green ecologies in various ways: in the literary and material environments it discusses, in the subsequent broadening out of what constitutes ecological thought and criticism in the premodern European context, and in its re-evaluation of traditional disciplinary knowledge systems.

Extraction Theory

This dissertation joins a small but growing collection of works in earlier chronological time periods that think through recent innovations in extraction theory and seriously consider how extraction manifests in literary texts and the environments they represent.

⁶⁰“SAA 2021: Reflections on “Ecology and Pre-Modern Critical Race Studies,” *Cymbeline in the Anthropocene*, May 20, 2021, <<https://www.cymbeline-anthropocene.com/article/17920-saa-2021-reflections-on-%E2%80%99Ecology-and-pre-modern-critical-race-studies%E2%80%99D>>

⁶¹There has also been recent work more specifically at the intersection of indigenous studies and premodernity. See for instance: Wallace Cleaves, “Human-Nature: Stewardship and Kynde Relationality Between the Medieval Wilderness and the Indigenous Environment,” *Medieval Association of the Pacific*, Banff, AB, April 22nd, 2022; Suzanne Conklin Akbari, “Race, Environment, Culture: Medieval Indigeneity, Race and Racialization,” in *A Cultural History of Race in the Middle Ages*, ed. Thomas Hahn (London: Bloomsbury Academic, 2023), 47-66.

The hyper-localized premodern ecocritical studies I mention above often reckon with extraction with varying levels of explicitness. To take one example, Vin Nardizzi's *Wooden O's* examines plays set in forests, staged within wooden theaters made from England's perceived decreasing population of trees. The economy of theater is thus implicated in the resource crisis that is commented upon by the very works being produced in these theaters. Nardizzi explicitly discusses resource extraction in both England and colonial Virginia, which animates "eco-fantasies of colonial extraction and theatrical production."⁶² He thus shows how material extraction relates to and becomes reflected in dramatic genres.

In discussing theories of extraction more generally, Justin Parks identifies two levels on which extractivism operates: 1) "large-scale, profit-driven operations for the removal and processing of natural resources such as hydrocarbons, minerals, lumber, and other materials," and 2) "a mindset in which resources serve a means-ends function, becoming commodities to be extrapolated and turned to profit."⁶³ Almost universally, examinations of extraction in European contexts in earlier time periods lean heavily on this first definition, and for good reasons. Examinations of extractivism were popularized in development studies of the global south, particularly in Latin American studies, where, as Alberto Acosta has argued, "[d]ependency on the metropolitan centres via the extraction and export of raw materials has remained practically unaltered to this day,"

⁶²Vin Nardizzi, *Wooden Os: Shakespeare's Theatres and England's Trees* (Toronto: University of Toronto Press, 2013), 112.

⁶³Justin Parks, "The Poetics of Extractivism and the Politics of Visibility," *Textual Practice* 35, no. 3, (2021): 353.

from the moment it “began to be structured with the conquest and colonisation of the Americas” roughly five hundred years ago.⁶⁴ In this context, focusing on the material side of extraction keeps the lived consequences of extraction at the forefront of the mind.

Archaeologist Phil Newman’s 2016 edited collection *The Archaeology of Mining and Quarrying in England: A Research Framework for the Archaeology of the Extractive Industries in England* became the first study to comprehensively discuss extractivism in England. Newman’s collection addresses specific dimensions of physical extraction across a variety of materials, micro-localities, and time periods ranging from the prehistoric to the modern. Though examination of extractivism in the realm of premodern environmental humanities remains in its nascent stage, the critics who explicitly examine this topic largely discuss physical extraction: That is, the extraction of material from the earth and the often-inequitable extraction of labor needed to perform this extraction.

In terms of literary and cultural studies, Philip Usher’s 2019 *Exterranean: Extraction in the Humanist Anthropocene* discusses “the extraction of *stuff* from the earth, a process in which matter goes from being *sub*-to exterranean”⁶⁵ from the early modern period in Europe onwards. Elizabeth Carolyn Miller’s 2021 *Extraction Ecologies and the Literature of the Long Exhaustion* discusses the material dimensions of extraction in a slightly later period, seeking to demonstrate how “the industrialization of underground resource extraction shaped literary form and genre in the first century of the

⁶⁴Alberto Acosta, “Extractivism and Neoextractivism: Two Sides of the Same Curse,” in *Beyond Development: Alternate Visions from Latin America*, eds. M. Lang and D. Mokrani (Amsterdam: Transnational Institute and Rosa Luxemburg Foundation, 2013), 63, 62.

⁶⁵Philip Usher, *Exterranean: Extraction in the Humanist Anthropocene* (New York: Fordham University Press, 2019).

industrial era, from the 1830s to the 1930s.”⁶⁶ She identifies this era as the “period when Britain came to understand itself as an empire thoroughly dependent on extraction.”⁶⁷ However, if that is the moment in which total dependence on extraction crystalized, surely earlier time periods bear hallmarks of extractive ideology long before that?

Rob Nixon famously discusses the way that “official” landscapes—landscapes as delineated by governmental and political entities, rather than the people living on them—“writ[e] the land in a bureaucratic, externalizing, and extraction-driven manner that is often pitilessly instrumental.”⁶⁸ This results in what he terms the “slow violence” of extractivism, “a violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all.”⁶⁹ This type of violence is “neither spectacular nor instantaneous, but rather incremental and accretive, its calamitous repercussions playing out across a range of temporal scales.”⁷⁰ While other works concerning pre-twentieth extraction speak largely to Parks’ first definition of extractivism, in order to speak to the long history of the slow violence of extractive ideologies, this dissertation instead turns to premodern texts to speak to Parks’ second definition: the “mindset in which resources

⁶⁶Elizabeth Carolyn Miller, *Extraction Ecologies and the Literature of the Long Exhaustion* (Princeton, NJ: Princeton University Press, 2021), 2.

⁶⁷*Ibid.*, 2.

⁶⁸Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, MA: Harvard University Press, 2011), 17.

⁶⁹*Ibid.*, 2.

⁷⁰*Ibid.*

serve a means-ends function.”⁷¹ Due in part to the quick turn toward allegory or symbolism in premodern European literature, this mindset has indeed remained largely “out of sight.” And yet, the naturalization of this “mindset” that I identify is indisputably a precursor to the slow violence of physical extraction in the era of capitalism and colonialism, a turn my last two chapters begin to track. Examining the “ideologies of extraction” that begin to manifest and accrete incrementally through premodern European literature is thus a vital and hitherto underexplored aspect of theories of extraction at work in earlier chronological time periods.

Outline of Chapters

My first chapter examines swamplands and watersheds in Dante Alighieri’s 1321 poem *Inferno*. I draw on the work of forest ecologist Suzanne Simard, using her groundbreaking and subsequently controversial research on mycorrhizal networks to provide context and methodology for my own research into the pervasive swamplands and waterways of *Inferno*, using intertexts ranging from medieval monastic environmental commentary to modern climate reconstructions and pollen surveys. These environments and the biosystems that inhabit them, I argue, reveal an important site for studying adaptive behaviors of medieval ecosystems and the subsequently extractive behaviors of people who engage these ecosystems. Following from Steve Mentz’s theorization of seep ecology, I highlight how the ecosystems around the poem’s watersheds reveal systems of complex environmental adaptability within the text, and

⁷¹Parks, “The Poetics of Extractivism,” 353.

how the models of adaptability which are observed within the poem's ecological systems reorient models of human engagement with the environment—engagements that are animated by the extractive logics which I expand upon in subsequent chapters.

My second chapter examines medieval conceptions of the aphotic deep sea as explored in two fourteenth-century English texts, the exemplum *Patience*, written by the anonymous *Pearl*-poet, and the long version of Julian of Norwich's mystical text, *Shewings*. These texts interact with the deep sea on imaginative, transformative, and sometimes innovative levels, and display a unique extra-human engagement with the ocean environment. I follow blue humanities paradigms established by Steve Mentz and Helen Rozwadowski, and contemporary depth-studies criticism by scholars such as media studies scholar Melody Jue and geologists Philip Steinberg and Kimberly Peters to demonstrate how these narratives engage with oceanic depth. While both fourteenth-century poems exhibit a robust environmental imagination, I ultimately argue that these two fourteenth-century texts undermine the potential of their innovative 'glimpses' into extreme environments, instead approaching the deep sea via models of environmental extraction that render the deep sea as symbolically and physically useful sites of religious transformation. The anonymous *Pearl*-poet and Julian "extract" meaning from the deep-sea space, making this extreme environment anthropocentrically useful. This utilitarian approach subsumes material environments into cultural paradigms that have subsequent ramifications for religio-racial violence that texts such as *Patience* then enact on land.

In my third chapter, I analyze Ludovico Ariosto's 1532 epic poem *Orlando Furioso*. Like *Patience* and Julian's *Shewings*, when one resists immediately reading

aspects of this text as allegory, it demonstrates a keen and creative scientific engagement, though it does so in the realm of air travel rather than deep-sea visions. Ariosto engages the perceived scientific possibilities of burgeoning colonialism to imagine a new biological entity called a hippogriff, a creature he invents and describes in biological detail based on early colonial travel writings, Ancient Greek myth, and contemporary scientific knowledge. I examine this literary-scientific creation through the lens of extrapolative science fiction, which ultimately becomes a speculative form of science fiction as the hippogriff allows two characters, Astolfo and Ruggiero, to fly through the air. I argue that *Orlando Furioso*'s engagements with the aerial realm ultimately seek to subsume vertical space into a hierarchical politics of access, in which these characters are mapped onto the vertical plane in direct proportion to their extractive potential. The ability to enact an extractive view is dependent on Christian, European conceptions of "ideal" identity groups, furthering a paradigm which fashions different groups of people as either the subject or object of the extractive view.

My final chapter picks up on this thread how extractive environmental rhetoric is used to naturalize systems of cultural hierarchy by analyzing the role of ecophobia—a groundless fear or hatred of the natural world—within travel writing such as José de Acosta's *The Natural and Moral History of the Indies* and dramatic work such as William Shakespeare's *The Tempest*. In these texts, the extractive nature of the burgeoning colonial enterprise is evident in their ecophobic rhetoric, and this ecophobia in turn becomes a weapon of dehumanization to justify extractive approaches to peoples and environments. As I examine this rhetoric through travel narrative, drama, and subsequent

academic criticism, this chapter thus becomes a case study for ongoing legacies and shifts of extractive ideologies across place and time, as dominant literary and cultural modes use ideologies of extraction and environmental rhetoric to naturalize discourses that attempt to hierarchize both people and planet.

The following chapters attend to the developing “mindset” of extraction, following manifestations of this ideology across a robust variety of premodern literary environments in western Europe from the early fourteenth century through the early seventeenth century. I follow work in both environmental humanities and extraction theory in order to consider how texts rhetorically fashion and engage with literary environments via ideologies of extraction. This study thus seeks to illuminate early instantiations of this phenomenon to track the slow violence of extraction as it resonates across the centuries, and to demonstrate the relevance of this facet of premodern literary studies to today’s moment of acute climate catastrophe.

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Chapter 1

Adaptation and Extraction Among the Waterways of Dante's *Inferno*

Introduction

In a TED Talk delivered in 2016, forest ecologist Suzanne Simard describes a system beneath the forest floor that she calls “the otherworld.”¹ She recalls how her curiosity to re-conceptualize forestry and biology’s approach to the forest led to decades of research on subterranean fungi called mycorrhizal networks.² These underground networks of fungi provide “infinite biological pathways” between trees of all species in the forest, creating an adaptive web of subterranean exchange “so dense that there can be hundreds of kilometers of mycelium under a single footstep.”³ This otherworld was always there, below the surface, alienated by epistemologies and ideologies of colonial ‘science.’⁴

¹Suzanne Simard, “How Trees Talk to Each Other.” *TED*, June 2016, 0:30, <https://www.ted.com/talks/suzanne_simard_how_trees_talk_to_each_other?language=en>

²This controversial topic continues to generate lively debate. See for instance: Monika A. Gorzelak, et al., “Inter-plant communication through mycorrhizal networks mediates complex adaptive behaviour in plant communities,” *AoB Plants* 7 (2015): 1-13, for how complex mycorrhizal systems engage adaptive behaviors based on environmental cues; Olga Ferlian, et al., “Growing Research Networks on Mycorrhizae for Mutual Benefits,” *Trends in Plant Science* 23, no. 11 (2018): 975-984, for how mycorrhizal interactions affect both macro and micro systems and might be used for solving environmental issues; Aline Fernandes Figueiredo, “Common Mycorrhizae Network: A Review of the Theories and Mechanisms Behind Underground Interactions,” *Frontiers in Fungal Biology* 2 (2021): 1-13, for a critical discussion of the importance of mycorrhiza on plant-to-plant communication; Mohammad Usman et al., “Mycorrhizal Symbiosis for Better Adaptation of Trees to Abiotic Stress Caused by Climate Change in Temperate and Boreal Forests,” *Frontiers in Forest and Global Change* 4 (2021): 1-9 for how the stressors of climate change affect mycorrhizal networks.

³Simard, 10:15-:17.

⁴Sm’hayetsk Teresa Ryan, a marine scientist of the Tsimtian First Nations, says, “research on mycorrhizal networks [...] mirror aboriginal insights and traditions—knowledge that European settlers often dismissed or ignored” (Ferris Jabr, “The Social Life of Forests,” *The New York Times Magazine*, 2020, <<https://www.nytimes.com/interactive/2020/12/02/magazine/tree-communication-mycorrhiza.html>>).

Simard's perspective on forest ecosystems overturned the longstanding scientific paradigm that forests were merely a collection of lone organisms, in favor of a perspective that considers unseen, partially seen, or historically overlooked networks of relations that undergird the worlds we think we are familiar with. She urges her listeners to exercise the capacity to revisit what has already been extensively studied, with an eye toward its otherworld. To look not just at the lone tree but at the mycorrhizal systems, to upset understandings of what is on the surface by looking at the vast interconnections below it. Those who begin to understand the otherworld can seriously reckon with the ways in which they exist intimately within it.

While this methodological approach informs my whole dissertation, in this chapter I answer Simard's invitation more explicitly by examining how the concept of mycorrhizal networks might lead readers to new considerations of the adaptive materiality within the environments of a text such as Dante's *Inferno*, in which Dante (both the poet and the central protagonist) is guided through the Nine Circles of Hell by the Roman poet Virgil. To use Simard's ecological framing, these circles are not merely "lone organisms.": The literary 'mycorrhizal networks' connecting the circles are its waterways: the rivers, their immediate surroundings, and the creaturely ecosystems (including human shades) that exist along their banks. When we view the circles via these material environments, they become more like a mycorrhizal system, with "infinite biological pathways" animating their adaptive and interconnected ecosystems.

The subterranean journey in *Inferno* is undergirded by Dante's encounters with networks of moving water. Soon after Dante's fictionalized self (often referred to as the

Dante-pilgrim) enters Hell, he is greeted by the dark and melancholy shore of the Acheron (III.77). In the poem's final lines, the sound of a burbling stream leads the pilgrim and his guide to a winding water that escorts them gradually to the world overhead (XXXIV.129-134). Between these two moments, Hell's rivers are underfoot or close by every step of the way, forging paths, providing links between various circles, and tracing the edges of dark woods and the looming, sorrowful walls of Dis as they weave their dense subterranean web. Though the extent of Hell's hydrography in Dante's text is all but universally acknowledged,⁵ the methodological approaches to examining these waters remain comparatively narrow. Analyses of the connective properties of the rivers are often restricted to mechanical debates (how the waterways bridge the divisions of Hell's circles, whether they are separate bodies of water or one) or about water as a metonym, invocative of cultural or divine symbolism.⁶ While these arguments make for a lively discussion of the functions of water in *Inferno*, they tend to elide the material geology and biology that exists in and around the ecosystems on the riverbanks.⁷

⁵For a foundational example of how "Dante's river system encompasses virtually all of the *Inferno* and all of the *Purgatorio* as well," see Daniel J. Donno, "Moral Hydrography: Dante's Rivers," *MLN* 92, no. 1 (1977): 130.

⁶See Theodore J. Cachey Jr., "Cartographic Dante," *Italica*, 87, no. 3 (2010): 325-354, for how this facilitates a reading of Dante's cartographic mapping; Mario Alberto Balducci, "Dante, l'acqua e l'analisi della coscienza: cosmologia psicosimbolica nella Divina Commedia," *Romanica Cracoviensia* 12 (2012): 167-189, for an argument about one connected river with various manifestations; Guido Di Pino, "Le valenze del fiume nella Divina Commedia," *Studi danteschi* 63 (1991): 128-139, for the rivers as sites of cultural, ancestral knowledge.

⁷For one of the only studies to explicitly discuss *Inferno*'s swampy materiality, see Casey Ireland, "Discors Concordia: Swamps as Borderlands in Dante's *Inferno*," *Neophilologus* 104 (2020): 177-188. Marco Romano, "'Per tremoto o per sostegno manco': the geology of Dante Alighieri's *Inferno*," *Italian Journal of Geosciences* 135, no. 1 (2016): 95-108, conducts an extensive survey of how Dante was a critical interpreter of Italian physical geology and used nuanced observations and analyses of hydrological and geological forces to construct landscapes with aesthetic, poetic, political, and ethical meaning in *Inferno*.

Swamplands, muddy expanses, misty riverbeds and the creatures that live among them: these features and many others are equal members of the subterranean river system that spans the cantos of *Inferno*, although their material significance has been largely unplumbed when it comes to Dante scholarship.⁸

This chapter examines *Inferno*'s hydro- and biosystems⁹ to reveal how these often-overlooked features compose an adaptive subterranean watershed within *Inferno*, invoking vast, untapped biological pathways that exist beneath the earth's surface. As Dante progresses through the circles, the adaptive ecosystemic cycles along the pathways of the rivers increasingly integrate human shades into their systems. This chapter emphasizes the importance of symbiotic environmental cycles to Dante's overall "understanding of God's working in the universe,"¹⁰ which is *La Commedia*'s primary concern. In this chapter's first and second sections, I argue that *Inferno*'s hydrosystems exhibit varied models of ecosystemic adaptation in nuanced and contextually dependent

See Randy Cerveney, "The Weather of Hell: A Look at the Meteorology of Dante's *Inferno*," *Weatherwise* 66, no. 2 (2013): 38-45, for discussion of Dante's surprisingly detailed understandings of meteorology.

⁸For excellent studies about Hells' rivers as conceptual, politico-cultural, allegorical, or topographical forces, see: Donno "Moral Hydrography," Cachey Jr., "Cartographic Dante"; Brenda Deen Schildgen, "Dante and the Indus," *Dante Studies, with the Annual Report of the Dante Society* 111 (1993): 177-193, Balducci, "Dante, l'acqua e l'analisi della coscienza,"; Di Pino, "Le valenze del fiumi," Gino Moliterno, "'Mouth to Mandible, Man to 'Lupa': The Moral and Political Lesson of Cocytus," *Dante Studies, with the Annual Report of the Dante Society* 104 (1986) 145-161. For how material rivers become metaphorically important, see Remo Ceserani, "Fiume / fiumi," *Italica* 82, no. 3/4 (2005): 624-643.

⁹I use the terminology "hydrosystem" to refer to non-organic aspects of the rivers' material ecosystems. I use "biosystems" to refer to systems involving organic entities, ranging from insects to human shades. I use "ecosystems" and "environments" more loosely: depending on context it can refer to either one of these systems, or both together.

¹⁰Robin Kirkpatrick, "Introduction," in *Inferno*, trans. and ed. Robin Kirkpatrick (London: Penguin Classics, 2006), xi-civ, xi.

ways. I begin by briefly establishing water's material and symbolic meaning within medieval discourse on the elements. I then situate the element in more specific material locales: the ecologies of the Acheron and Styx, where we find a nuanced portrait of livid rivers, swamps, marshes, muds, and slimes that parallel the wetlands of medieval Italy, and the fiery banks of the Phlegethon. While I discuss Italian water management techniques and their resonances within *Inferno* in the next section, I ultimately do so to argue that the mirrored infernal versions of these environments exhibit models of adaptive agency that are self-managing.¹¹ This follows from a growing number of arguments about how “the concept of agency should be enlarged to include non-human ‘actants’, such as organic and inorganic materials of all sorts”¹² and that any agency or activity is necessarily a networked agency that exists in tandem with other networks in a given area.¹³

¹¹It is not unusual to envision aspects of Dante's environments as “agentive”—it is all but universally accepted that the environments play an active, even agential role in the tortures inflicted on *Inferno*'s condemned shades. However, this framing of agency remains fundamentally hierarchized and anthropocentric: even if the environment is the active agent, it is acting because of and in adherence to human concerns—this calls to mind Janssen and Soen's assertion that infrastructural systems applied to environmental bodies can be “read as tools of a Foucauldian ‘governing at a distance’ in which states, governments, or power elites are ‘stabilizing’ their social values in an attempt to reproduce existing power relations” (Ric Janssens and Tim Soens, “Urbanizing Water: Looking Beyond the Transmission to Water Modernity in the Cities of the Southern Low Countries, Thirteenth to Nineteenth Centuries,” in *Urbanizing Nature Actors and Agency (Dis)Connecting Cities and Nature Since 1500*, ed. Tim Soens et al., [New York: Routledge, 2019], 90). While it is indisputable that part of the infernal environment's agency is directed toward punishing the shades in accordance with Dante's negotiation of his contemporary Christian afterlife, this chapter probes for alternative considerations of agency that do not privilege anthropocentric concerns—in doing so, it lands on what I call “adaptive agency.”

¹²Tim Soens et al. “Introduction,” in *Urbanizing Nature Actors and Agency (Dis)Connecting Cities and Nature Since 1500*, ed. Tim Soens et al., (New York: Routledge, 2019), 12.

¹³See: Bruno Latour, *We Have Never Been Modern* (Cambridge, MA: Harvard University Press, 1993); Kristin Asdal, “The Problematic Nature of Nature: The Post-Constructivist Challenge to Environmental History,” *History and Theory* 42, no. 4 (2003): 60-74; Ignacio Fariás and Thomas H. Bender, ed., *Urban Assemblages: How Actor-Network Theory Changes Urban Studies* (New York: Routledge, 2010).

Given this, I then examine how these models of adaptive agency seep into the environmental cycles of the biosystems that inhabit the rivers' shores, wherein the creeping things that inhabit Hell and the shades condemned to live there have adopted multi-agential symbiotic relationships. In his discussion of oceanic creatures which adapt and survive amid the extreme, noxious environments of deepwater methane seeps, Stefan Helmreich recalls one biologist telling him that "the sea is [not] a zone of ecological harmony [...] life exists here not because the medium is friendly to life but because life is so adaptable, can make its way in the most noxious environments"¹⁴—a sentiment that aligns with this chapter's observations about *Inferno*'s ecosystems. The symbiosis that occurs amid *Inferno*'s biosystems often manifest in disturbing and visceral ways, in which they depend on each other for ecological continuance in their extreme environments even as they demonstrate the acute horror of Dante's imagined hellscape.

To argue this, I engage with early modern ecocritic Steve Mentz's theorization of seep ecology, which imagines the relationship between an allegory and its material referent as a membrane through which meaning can seep back and forth in a "fluid processes of contact and exchange."¹⁵ This enables a relationship that "erase[s] boundaries that were once deemed solid while emphasizing that [...] rough differences

¹⁴Stefan Helmreich, "The Message from the Mud: Making Meaning Out of Microbes in Monterey Bay," in *Alien Ocean: Anthropological Voyages in Microbial Seas* (Berkeley: University of California Press, 2009), 45.

¹⁵Steve Mentz, "Seep," in *Veer Ecology: A Companion for Environmental Thinking*, ed. Jeffrey Jerome Cohen and Lowell Duckert (Minneapolis University of Minnesota Press, 2017), 283.

and separations remain.”¹⁶ Mentz’s seep ecology, which considers symbol, material referent, and the fluid relationship between them, is particularly fitting for *Inferno*, whose ecosystems and the punishments inflicted upon the shades that inhabit them are highly symbolic and allegorical yet undeniably visceral and material. Imagining the “seep” between material and allegorical boundaries allows us to seriously consider the material aspects of Hell’s rivers and their biosystems, rather than focusing primarily on their symbolic or allegorical meaning, as well as to examine how models of adaptation exhibited by the waterbodies can seep into the ecosystems of the creatures that inhabit them.¹⁷

As Dante progresses through the circles and these agentive adaptations begin to increasingly penetrate Hell’s biosystems, Dante observes how the human shades’ infernal punishments increasingly integrate them into the morphing and adaptive infernal ecosystem. In addition to utilizing the theory of seep ecology to unpack the ways in which *Inferno*’s environments demonstrate unique systems of interconnectivity and adaptation, it also informs the second part of my argument, which concerns Dante’s extractive approach to his observations of infernal environments. After Beatrice compels Virgil to lead Dante from his “selva oscura” (I.2; “dark wood”), Dante embarks on what

¹⁶Mentz, “Seep,” 283.

¹⁷Adaptation can mean a variety of related but context-specific things. Generally, adaptation as exhibited by a non-organic body manifests as adapting their material to the surrounding environment and/or new conditions. As exhibited by an organic entity, it might reference by contrast the behaviors or adjustments undertaken by creaturely entities to become better suited to their environment.

Robin Kirkpatrick calls “a story of self discovery.”¹⁸ I argue that Dante engages the infernal ecosystems via a logic of extraction to, in his words to Virgil, “sodisfammi a' miei disiri” (X.6; “satisfy me in my desires”). Dante does not interpret the integration of the human into these cycles as a humbling dis-anthropocentric message: rather than reckoning with this human implication, Dante’s poem adopts an exoticizing and exploitative view of these cycles, effectively styling his tour through Hell as a resource for the imparting of a moral message to his audience. After laying this groundwork, I then examine how the poem mobilizes this model of adaptation in its narrative framework and how one popular manuscript of the *La Commedia*, MS Reg. Lat. 1896,¹⁹ uses visual adaptation to interpret and explore Dante’s treatment of the infernal ecosystems. Finally, I discuss the ethics of this type of extractive view, as well as how *Inferno*’s metatextual elements entangle the reader into these systems, implicating them into this cycle of extractive logic—and adversely, how readers and the discipline of ecocriticism might resist this.²⁰

¹⁸Kirkpatrick, “Introduction,” lix.

¹⁹Text, Nicolaus Mangona; drawing, Sandra Botticelli, c. 1485-90 (Vatican, Biblioteca Apostolica Vaticana). Other pieces of this manuscript are held by the Staatliche Museen in Berlin under the name MS Hamilton 201.

²⁰In this chapter, I focus mainly on rivers within *Inferno*—in isolated moments I will refer to *Purgatorio* briefly when it provides a particularly poignant parallel to *Inferno*. While a comparative analysis of *Inferno*’s rivers with the environments surrounding the Eunoë and Lethe would be a valuable undertaking, it is beyond the scope of the current study. As this chapter focuses on riverbodies, I do not discuss *Paradiso*, which does not contain similar environments. I also address only three of *Inferno*’s four main rivers, though they represent only two dominant environments, as the Styx and Acheron are both swamplands. As Virgil will go on to explain to Dante in Canto XIV, these waterways all originate from the Old Man of Crete. His tears travel underground and then form these three rivers, the Styx, Acheron, and Phlegethon—it is much debated whether this implies that the tears branched apart before forming these three rivers, or if they follow from one another. However, what is certain is that these three rivers finally all pool together at Hell’s deepest point to form Cocytus. Though I partially elide discussion of Cocytus for

As Above, So Below: *Inferno*'s Twinned Swamplands

Before discussing the named waterways of *Inferno*, I wish to briefly discuss the influence of water in medieval environmental thought writ large. This in turn will highlight both how Dante's depictions of elemental forces coalesce with lineages of elemental discourse and reveal how elements that bear metaphorical, symbolic, or allegorical significance also bear active and material consequence: a concept that is important for my overarching goal of devoting extended consideration to the material environments of Hell, both in relation to and apart from their religious, symbolic consequence.

Dante's depictions of environmental elements, particularly water, resonate with various ancient and medieval sources he may have been aware of—many of which feature throughout *La Commedia*. In his *Etymologies*, Isidore of Seville states that “water rules over all the rest, for water tempers the sky, makes the earth fertile, gives body to the air with its exhalation, ascends to the heights, and claims the sky for itself.”²¹ Looking into Limbo, the first circle of Hell, Dante sees only a space “oscura e profonda era e nebulosa” (IV.10; “dark and deep and nebulous”), rising from the “valle d’abisso” (IV.8; “abysmal valley”) which collects the cries of its sufferers. A near-constant feature of this hellscape is raging wind,

che mugghia come fa mar per tempesta,

reasons of time and space, as a collective body of water and the outlet for the other waterbodies in the infernal watershed, it also demands a slightly different type of attention than that which I discuss here.

²¹“Aquarum elementum ceteris omnibus imperat. Aquae enim caelum temperant, terram fecundant, aerem exhalationibus suis incorporant, scandunt in sublime et caelum sibi vindicant” (Isidore of Seville, *Etymologies*, trans. Steven A. Barney, W.J. Lewis, J.A. Beach, and Oliver Berghof [Cambridge, UK: Cambridge University Press, 2006], XIII.xi.3).

se da contrari venti è combattuto.
La bufera infernal, che mar non resta,
mena li spiriti con la sua rapina;
voltando e percontendo li molesta.

bellowing like the sea racked by a tempest,
when warring winds attach it from both sides.
The infernal storm, eternal in its rage,
sweeps and drives the spirits with its blast:
it whirls them, lashing them with punishment.
(V.29-33)²²

The power of wind is metaphorized to impose a sense of intensity, but it is also very much an active and literal force as conveyed by the Italian active present participle “faccendo in aere” (V.49; “carried along by the battling winds”) and “l’aura nera sì gastiga” (V.51; “punished in the sweep of the black wind”). While water does not explicitly infuse the Second Circle apart from the metaphorized use meant to convey the auditory climate, wind is not entirely distinct from water nor does the immediate absence of waterways denote the absence of water or their effects. Isidore, for instance, does not restrict water to its waterways but argues that it has the potency to seep into the other three elements, mingling their attributes. Pliny writes that air exhaled from water becomes either mist or wind.²³ Therefore, raging winds represent a particular intersection of air and water. Within the poem, the elemental seepage between water and air that

²²Italian excerpts from Kirkpatrick’s 2006 edited version of Giorgio Petrocchi’s original text; English translations from *Dante’s Inferno, The Indiana Critical Edition* trans. Mark Musa (Bloomington: Indiana University Press, 1995). Where the line numbers deviate within these editions, which is rare, I default to Petrocchi.

²³Pliny the Elder, *Natural History*, ed. and trans. H. Rackham (Cambridge, MA: Harvard University Press, 1940), II.44. H.D. Austin discusses the influence of Pliny on Dante, alongside Isidore of Seville and Albertus Magnus, in “Dante and the Mineral Kingdom,” *Romance Philology*, 4, no. 2/3 (1951): 79-153.

makes mists and winds thus become both the geography of *Inferno* and the tortures themselves.²⁴

With such moments in mind, I want to consider the layout of aqueous topography in *Inferno* and across medieval Italy as Dante knew it.²⁵ These twinned worlds touch, connect, and seep continuously, yet their “rough differences and separations remain.”²⁶ On the most basic rhetorical level, Dante details Italian geography to draw a visual parallel of the hellscape for his reader. All follow the formula: as above, so below.²⁷ Symbiosis between these two worlds develops as we follow Hell’s rivers and the mycorrhiza-like waterways reveal how Dante’s ‘otherworld’ interacts with its referents.²⁸

²⁴In discussing Hell’s waterways, I imagine Dante’s relationship to be best summed up by Debapriya Sarkar’s formulation of “possible knowledge”: “an assemblage of imaginative habits of thought and action that enabled writers to grapple with the challenges of constructing knowledge,” via “the shared epistemology that is crafted in and through literary form” (*Possible Knowledge: The Literary Forms of Early Modern Science*, [Philadelphia: University of Pennsylvania Press, 2023], 2). The existence of Dante’s *Quaestio de Aqua et Terra* demonstrates, at the very least, his epistemological investment in the movement and make-up of bodies of water.

²⁵For the 700th anniversary of the poet’s death in 2021, the Smithsonian profiled several locales which Dante frequented throughout central and northern Italy: Dante was well-traveled and had experience with a variety of environments across Italy, especially those north of Rome (Jennifer Billock, “Follow Dante’s Footsteps Through Italy,” *Smithsonian Magazine*, April 7, 2021, <<https://www.smithsonianmag.com/travel/follow-dantes-footsteps-through-italy-180977029/>>). The chronology of Dante’s life freely available on *Digital Dante* also paints a picture of the poet’s range of experiences throughout the country (Grace Delmolino, “Dante Alighieri: A Chronology,” *Digital Dante*, Columbia University Libraries, 2017, <<https://digitaldante.columbia.edu/history/chronology/>>).

²⁶Mentz, “Seep,” 283.

²⁷See: *Inf.* IX.112-114, XII.4-10, XVI.91-105, XXXI.40.

²⁸My reading differs slightly from the “otherworld” genre in literature as it is commonly understood. See for instance Alison Morgan, *Dante and the Medieval Other World* (Cambridge, UK: Cambridge University Press, 1990) for a reading of the sources Dante may have taken inspiration from in crafting an “other world” depiction of his own version of the afterlife. See Aisling Byrne, *Otherworlds: Fantasy and History in Medieval Literature* (Oxford: Oxford University Press, 2016), for a survey of medieval “otherworld” texts that “feature unfamiliar realms that operate according to very different laws to those of the actual world” and “cannot be easily subsumed into the idea of the afterlife” (2). *Inferno*’s otherworld as I envision

Attention to certain aspects of the overworld's swampland environments reveals mirrored geographies and systems of water management within the otherworld: where they manifest in the otherworld, rather than being managed they exhibit their own adaptive agency—that is, a demonstrated ability to adapt their material to their surrounding environment or changing conditions.

After entering through the Gate of Hell, Dante-pilgrim soon encounters water. He finds himself along “la trista riviera d’Acheronte” (III.78; “the sorrowful shore of Acheron”) where Charon, the “nocchier de la livida palude” (III.98; “steersman of the livid marsh”), assails him and Virgil. Dante’s observations about the Acheron are sparse, but the poet codes marshlands both with the explicitly descriptive noun *palude*, swamp or marsh, and adjectives like *livida*, bruise-colored, which invokes a range of purples, blacks, and blues that dominate the infernal waterscapes. At other points in *Inferno*, Dante uses *livid* to refer to rocks—“la pietra livida” (XIX.14; “the livid-colored rock”)—and to an infernal snakelet “livido e nero come gran di pepe” (XXV.84; “fiery with rage and black as a peppercorn”). This adjective thus carries both descriptive and agential power, invoking the colors of stagnant, dark waters, but also suggesting a hostility, giving the marsh a veneer of toxic agency. The contextual slippage of this adjective also introduces the potential of agential environments and how they might exhibit adaptive agency: *livida* as a descriptor adapts to the context surrounding it. Dante uses this adjective once more in *La Commedia*: in *Purgatorio*, he writes, “col livido color della

it deviates from both of these conceptions by virtue of the network it creates with to the overworld and by its expressly environmental emphasis.

petraia” (*Purg.*XIII.9; “the livid color of the stone”).²⁹ Extrapolating from this example, *color* is used when there is to be no doubt that *livid* specifically refers to color. This leaves other uses of the adjective open to greater interpretation and provides a space to imagine the infernal swampland as an active environmental agent.

Before elaborating on this concept in my discussion of the Styx, *Inferno*’s deeply contemporary nature makes it important to address the poem’s correlating overworld environments. I want to foreground the historical pervasiveness of Italian swampland and introduce the concept of water management. When considering water management, one might easily fall into binary and anthropocentric attributions of actants and objects. However, urban and environmental historians Ric Janssens and Tim Soens describe how, when considering “humans and nature-water,”³⁰ discussions of water management should not

be limited to a history of humans acting upon water, but should instead be enlarged to a permanent co-evolution in which any form of agency—either by human actors or material-natural ‘actants’—is a networked agency, inseparably embedded in a network of relationships with the surrounding world.³¹

What, then, did these relationships look like in the centuries leading up toward Dante’s lifetime? Environmental legacies surrounding these environments naturally contribute to the fourteenth century cultural consciousness surrounding water and swampland—given

²⁹Mark Musa, trans. *Purgatorio* (New York: Penguin Group, 1985).

³⁰Janssens and Soens, “Urbanizing Water,” 90.

³¹*Ibid.*

Dante's reputation as "a passionate observer of things, persons, and gestures,"³² this consciousness inevitably "seeps" into and animates *Inferno*, a deeply contemporary poem.

To establish this swampland legacy, we might look as far back as the fifth century: as the Roman government's influence over Italy waned, so did the infrastructure that kept the middle of the country dry and cultivated. In the Lombard plain, Paolo Squatriti writes that "settlements and agriculture fell back toward safer ground," while riverbanks and plains "revert[ed] back to their marshy condition, to the natural ambiguity of water and earth."³³ With people and agriculture moving elsewhere, the centuries between 600 C.E. and the turn of the millennium saw streams throughout medieval Italy becoming strips of marsh,³⁴ and the landscape was increasingly dominated by the swampland biosphere.³⁵ As the population grew throughout the centuries leading up to the first wave of the Black Death in Italy in 1347-8, several decades after Dante's death in 1321 and the completion his magnum opus a year before, the swamplands that had proliferated after Roman rule were increasingly managed in ways that had very real

³²Kirkpatrick, "Introduction," xli.

³³Paolo Squatriti, *Water and Society in Early Medieval Italy: AD 400-1000* (Cambridge, UK: Cambridge University Press, 1998), 72.

³⁴*Ibid.*, 72-3.

³⁵Even after the economic upturn of 1,000 C.E., early medieval efforts did not parallel imperial Rome's hydraulic intercessions. Most water manipulation was left to micro-localities (Roberta Magnusson and Paolo Squatriti, "The Technologies of Water in Medieval Italy," in *Working with Water in Medieval Europe: Technology and Resource Use*, ed. Paolo Squatriti [Leiden: Brill, 2000], 217). Squatriti calls this spread of swampland "unchecked," resulting in "an anarchy of small swamps" (*Water and Society in Early Medieval Italy*, 73).

effects on the Italian population: new milling and damming technologies were implemented, and land manipulation such as plowing and river diversion produced drastic changes in environmental landscapes. The varieties of swampland within the Italian peninsula are environmentally heterogenous,³⁶ which made water management technology of wide interest and massive variety all throughout the early, high, and late medieval periods.³⁷

It would be easy to assume that Dante's twinned infernal marshes, the Acheron and Styx, rearticulate presumed hostility and incompatibility between humans and such an environment. To a degree they do, given both the overall punishing effects of the hellish *contrapasso* and the implication of *livida*, but they also emphasize a relational complexity. In and of itself, swampland dominance was not incompatible to human existence—to exaggerate an aggravated relationship would be to play too hastily into preconceptions about humanity's hostility toward an environment that seems, in such a construction, uneasily controlled. Regarding their engagement with swampland resources, medieval Italians "made virtue of necessity"³⁸—that is, they were not in competition with swampland, but in network with it. Living among swamps was inescapable, and perhaps not even all that remarkable.³⁹ In Canto XX, when describing

³⁶Squatriti, *Water and Society in Early Medieval Italy*, 74.

³⁷Magnusson and Squatriti, "The Technologies of Water in Medieval Italy," 217.

³⁸Squatriti, *Water and Society in Early Medieval Italy*, 76.

³⁹Due to swampland's pervasive nature, Squatriti suggests that they were not engrossing or frightening enough to record extensively (*Water and Society in Early Medieval Italy*, 76). This reasoning, as much as any, might address Dante's relative inattention to the swampland environment of the Acheron.

the founding of Mantua, Dante emphasizes human relation to swampland, observing that “Li uomini poi che 'ntorno erano sparti / si accolsero a quel loco, ch'era forte / per lo pantan ch'avea da tutte parti” (XX.88-90; “the men who lived around there gathered on that very spot, for it was well protected by the bog that girded it on every side”).

Stretching across two of the poem’s four main waterbodies, the swampland environment might be considered the most consistent aqueous environment throughout *Inferno*. After the Acheron, Dante and Virgil encounter Styx, a vast marsh that surrounds the city of Dis:

Noi ricidemmo il cerchio a l'altra riva
sovr' una fonte che bolla e riversa
per un fossato che da lei deriva.
L'acqua era buia assai più che persa;
e noi, in compagnia de l'onde bige,
intrammo giù per una via diversa.
In la palude va c'ha nome Stige
questo tristo ruscel, quand'è disceso
al piè de le maligne piagge grige.

We crossed the circle to its other bank,
passing a spring that boils and overflows
into a ditch the spring itself cut out.
The water was a deeper dark than perse,
and we, with its grey waves for company,
made our way down along a rough, strange path.
This dingy little stream, when it has reached
the bottom of the grey malignant slopes,
becomes a swamp that has the name of Styx.
(VII.100-108)

There are several key differences between this swampland and the Acheron that Dante visits in Canto III. Chief among these is the simple focus of Dante-pilgrim’s attention. Though an ambiguous descriptor like *livido* adds rich nuance to the Acheron, Dante had

been most preoccupied with observing humanoid activity: spirits that “vanno su per l’onda bruna” (III.118; “go across the darkened waters”) and Charon, who would “batte col remo qualunque s’adagia” (III.111; “strikes the laggard sinner[s]”). Styx’s marshland, by contrast, is vividly expressed both in its own materiality and in its active role in the punishment of the sufferers.⁴⁰ The river is a deeper color than “persa” (“perse”),⁴¹ and its swampy substance is composed of slime and mud.

Importantly, this stretch of water that stems from the Acheron to “become” the Styx actively adapts to its environmental circumstance, as it spills into “un fossato” (“a ditch”). The variably translated noun *fossato* can be formed by man or nature: this ambiguity reveals itself in the varied English translations of these lines. Allen Mandelbaum’s popular translation translates this *fossato* as “trench,” while Robin Kirkpatrick translates it as an “outer sluice.” This latter translation almost always refers to an artificial channel controlled and manipulated by a gate, sometimes used in milling. The reflexive emphasis in Musa’s translation however, quoted above, adheres most closely to the Italian and indicates that the overflow trench was carved by the river itself. Whether the *fossato* is interpreted as natural or artificial, it incorporates language and imagery of water management and hydroscaping: the waterway self-manages, moving

⁴⁰Seen for instance, when the “genti fangose in quel pantano” (VII.110; “muddy people moving in that marsh”) “si percotean non pur con mano, / ma con la testa e col petto e coi piedi, / troncandosi co’ denti a brano a brano” (VII.112-4; “fought each other, not with hands alone / but struck with head and chest and feet as well / with teeth they tore each other limb from limb”).

⁴¹See Dante’s *Convivio*, “Perso è un color misto di purpureo, e di nero, ma vince il nero” (Dante Alighieri, *Convivio*, ed. and trans. Andrew Frisardi [Cambridge, UK: Cambridge University Press, 2018], 95; “Perso is a color of mixed purple and black, but black wins”) and elsewhere in *Inferno*, “l’aere perso” (V.89; “the deep purple air”).

according to the conditions of its surroundings and adapting them in turn in a way most conducive to containing and guiding its contents.⁴² Though the language of water management is used, these waterbodies are both actant and object in this management process, adapting their material “da lei,” itself, in ways optimally suited to manage their material excess.

Dammed: *Inferno*’s Boiling River

An unexpected crux of the model of adaptation exhibited by the poem’s waterways comes from Virgil’s elaborate explanation of Hell’s river system, delivered moments before he and Dante proceed toward the bloody, boiling river Phlegethon. There is a land called Crete, Virgil says, and within it a mountain named Ida, within which again is a gigantic Old Man composed of metals and earthly building materials (XIV.94-113). Tears drip from his eyes through cracked fissures, and proceed through subterranean waterways into the various rivers of Hell:

[...] accolte, fóran quella grotta.
Lor corso in questa valle si diroccia;
fanno Acheronte, Stige e Flegetona;
poi sen van giù per questa stretta doccia
Infin, là ove più non si dismonta,
fanno Cocito.

[...] where they collect to erode the cavern's rock;
From stone to stone they drain down here, becoming
rivers: the Acheron, Styx, and Phlegethon,

⁴²Dante uses similar language elsewhere: in *Purgatorio*, he writes, “La pioggia cadde, e a' fossati venne / di lei ciò che la terra non sofferse” (*Purg.* V.119-120; “water poured down, and what the sodden ground / rejected filled and overflowed the deepest gullies”)—wherein the earth and the gullies actively adapt to new or excessive conditions in their environment; earth and water collaborate in the management of their respective and co-mingled elements (Mark Musa, trans. *Purgatorio* [New York: Penguin Group, 1985]).

then overflow down through this tight canal
until they fall to where all falling ends:
they form Cocytus.
(XIV.114-119)

This is the moment scholars most often turn to when discussing the geography of Hell's rivers. The tears of the Old Man of Crete descend, carve a subterranean path into the ground, and eventually pierce into Hell itself. Musa's quoted passive translation of "fanno" perhaps detracts from the active interpretations of the same verb. Rather than "becoming," which indicates a passive adaptation, we might easily read "fare"—itself a very adaptive verb—as indicating a more agentic adaptation, such as "make," or even "build." Such a reading has the potential to radically reorient the rivers' agencies in adapting to the particular and diverse environments throughout the Styx, Acheron, and Phlegethon.

Linguistically, this passage mimics water management techniques to adapt the structure of its own narrative. Virgil, halting their progress, functions metaphorically as a dam: where Dante and Virgil's movement through the circles had been rapid before, Virgil now physically stops and moderates their progress. Robin Kirkpatrick writes that "Virgil's discourses [...] often serve as moments of pause in the otherwise vivid and imaginative thrust of Dante's narrative."⁴³ This is because simple physical progress through the circles is not enough: Dante must also make psychic, intellectual progress. As Virgil later explains, "necessità 'l ci 'nduce, e non diletto" (XX.88; "[Dante] travels by

⁴³Robin Kirkpatrick, "Commentaries and Notes," in *Inferno*, trans. and ed. Robin Kirkpatrick (London: Penguin Classics, 2006), 357.

necessity, not pleasure”). Dante’s primary objective, per Virgil’s words, is “to know”: early in their journey, on the precipice of Limbo, Virgil sets the expectations for Dante’s coming journey by saying, “Or vo' che sappi, innanzi che più andi” (IV.33; “Now you should know before we go on farther”). This foreshadows the extractive view Dante takes toward Hell’s environments, in which he is positioned as the consummate observer, seeking knowledge from the places he passes through: this greater knowing is facilitated by Virgil’s intermissions, as he pauses their physical progress with directed intellectual intermissions. As such, the content of Virgil’s intermissions provide context on exactly *what* lesson Dante is supposed to extract from his surroundings. Like a dam mediates the water that proceeds downstream, Virgil erects a verbal structure to mediate Dante-pilgrim’s flow through the circles, creating academic question-and-answer style exchanges that ensure Dante’s understanding of the hydrosystem and its relationship to the overall structure of the hellscape before they physically progress. Their dialogue tags rhythmically mete out their exchange, as a spillway does to a dam: “e io a lui [...] ed elli a me [...] e io anchor” (XIV.121, 124, 130; “And I to him [...] and he to me [...] and I again”). In the discussion interspersed throughout these dialogue tags, Virgil makes clear that all the rivers of hell are components of the same watershed; a single watershed embodies the environmental idea of connection amid distinction, where environmental networks are both of themselves and of each other, connected by the continuous give and

take of the water system that connects them from their birth to their destination and every point on the watershed between.⁴⁴

While this dam-like mediation is metaphorical, elsewhere, Dante explicitly identifies Virgil with structures made to aid or stem the flow of water. While the pair escape from devils in the *bolgia* of the Eighth Circle, Virgil hoists Dante up and flees. Dante observes, “Non corse mai sì tosto acqua per doccia / a vulgar ruota di molin terragno, / quand’ ella più verso le pale approccia, / come ‘l maestro mio per quel vivagno” (XXIII.46-49; “Water that turns a mill wheel never ran the narrow sluice at greater speed, not even at the point before it hits the paddle-blades, / than down that sloping border my guide slid”). With this comparison, Dante demonstrates detailed understanding of the mechanics of the millrace, the swift channel of water leading to a waterwheel, and deploys this pointed imagery to ground their physical progress in the language of water management technology. Brenda Deen Schildgen, when discussing animal similes and metaphors in the *Commedia*, writes that in “certain moments of heightened imagery, Dante’s poem moves us out of the purely philosophical world and into the existential animal world,” and that these “similes or metaphors, can become wonders: they may be shadows of the act of the creator, and as such they reveal the poet’s knowledge of the natural world and provide an insight into his views about non-human

⁴⁴A single watershed would provide points of connection along the way, continuously picking up and dropping sediments. Francis J. Caponi draws a relationship between the bloody river and the “blood that boils out from the broken branch of Pier della Vigne” in the wood of suicides (“‘Like Streams in a Desert Land’: The Stony Sluice of ‘Inferno’ 14-16,” *Dante Studies, with the Annual Report of the Dante Society* 132 [2014]: 252).

creatures.”⁴⁵ I would extend this logic to Dante’s description of water technologies and waterbodies, via the figure of Virgil, who sets the pace at which the pilgrim descends, both physically and intellectually. While the imagery of comparison is explicit, the previous parallel between Virgil’s control of his and Dante’s progress and water management technology is a metaphoric one substantiated by the pace, grammar, and content of their academic discourse.

The metaphoric dam erected by Virgil marks the Phlegethon as somehow remarkable, or as the place most suited for this intermission. The Phlegethon is visually distinct from the waterbodies that came before it: bloodred, boiling, at times slender, at times raging. Francis J. Caponi poses this question: how does the “picciol fiumicello” (XIV.77; “narrow stream”) of Canto XIV turn into the raging waterfall of Canto XVI, which stuns the ears of the pilgrim and his guide? He cites the lack of tributaries, rainfall, turns in the riverbed, any covering that could prevent evaporation, any wind or decline that could hasten or grow the water within its banks,⁴⁶ but makes no mention of the water’s boiling nature. I offer a potential answer to such questions by affording the Phlegethon’s boiling nature its due, identifying it as a key aspect in the model of adaptation demonstrated by the river.

The Phlegethon does not instantaneously grow from *picciol fiumicello* to raging waterfall. It begins as a “proda del bollor vermiglio” (XII.101; “boiling crimson river’s

⁴⁵Brenda Deen Schildgen, “Animals, Poetry, Philosophy, and Dante’s *Commedia*,” *Modern Philology* 108, no. 1 (2010): 24.

⁴⁶Caponi, “Like Streams in a Desert Land,” 254.

bank”). Dante and Virgil pass shades being boiled whole, others whose heads peek above the bubbling water (XII.121), and those whose torsos are free (XII.123), as “a più a più si facea basso / quel sangue, sì che cocca pur li piedi” (XII.124-5; “the river’s blood began decreasing slowly / until it cooked the feet and nothing more”). After fording this part of the river, Dante and Virgil traverse the wood of suicides, where they spot the Phlegethon in the form of the aforementioned “picciol fiumicello” (XIV.77). Only further on in the Seventh Circle, does the Phlegethon again grow to emit “s’udia “l rimbombo [...] l’arnie fanno rombo” (XVI.1, 3; “the rumbling [...] like the sound of beehives humming”), and shortly after this appears as “quell’acqua tinta / sì che ‘n poc’ ora avria l’orecchia offesa” (XVI.104-5; “the tainted waters falling, roaring / sound loud enough to deafen us in seconds”).

The fluctuating volume of the river and its dearth of tributaries and springs likely indicates subterranean influence on the hydrological system—namely, as an effect of the heating of subterranean environments. Daniel J. Donno writes that the Old Man’s tears “bore through the mountain and make their way into the cavity of Hell by a subterranean route [...] we are not shown how the Styx actually connects with the Phlegethon or how the ‘picciol fiumicello’ crosses the eighth circle and arrives at the ninth,”⁴⁷ which leaves an imaginative space for considering how the Phlegethon adopts its boiling qualities. Ancient and medieval writers had already demonstrated a deep understanding of subterranean water systems by the 1300s. Exodus suggests that the third elemental realm

⁴⁷Donno, “Moral Hydrography,” 137-8.

of earth is “aquis sub terra.”⁴⁸ St. Bernard uses subterranean hydrology as a metaphor for the “fluid path of life and knowledge,”⁴⁹ stating that

if all waters seek incessantly to return to the sea, making their way thither sometimes by hidden and subterranean channels, so that they may go forth from it again in continual and untiring circuit, becoming visible once more to man and available for his service, why are not these spiritual streams rendered back constantly?⁵⁰

Italian monasteries in the high Middle Ages had enough knowledge of subterranean flow to tap into it via wells and cisterns.⁵¹ Subterranean water sources are thus neither a novel geological feature in *Inferno* nor in medieval Italy.

The river’s subterranean nature facilitates a series of environmental relationships, animated variably by vapor, falling fire, and boiling river water, whose environmental processes enmesh with one another: falling fire heats the sand and underground areas, which heat the river to boiling, and the boiling then billows into to a falling mist around the river’s shores, and so on. Though eighteenth-century Swedish physician Nils

⁴⁸“Waters under the earth”; Exodus 20:4.

⁴⁹James L. Smith, *Water in Medieval Intellectual Culture: Case-Studies from Twelfth-Century Monasticism* (Turnhout: Brepols, 2017), 40.

⁵⁰“Quod si copise aquarum secretis subterraneisque recursibus incessanter aequora repetunt, ut inde rursus ad visus ususque nostros jugi infatigabili erumpant obsequio: cur non etiam spiritualis rivi, ut arva mentium rigare non desinant proprio fonte sine et sine intermissione reddantur?” (Bernard of Clairvaux, “Sermo XII,” *Sermones in Cantica Canticorum* [Oeniponte: Academica Wagneriana, 1888], 86). Translation by Samuel J. Eales, *Cantica Canticorum: Eighty-Six Sermons on the Song of Solomon* [London: Elliot Stock, 1895], 67).

⁵¹For instance, Chiaravalle Abbey in Fiastra had rainwater cisterns, spring-fed pipe intakes, and a subterranean water channel (Magnusson and Squatriti, “The Technologies of Water in Medieval Italy,” 246). One medieval well shaft in St. Bartholomew on Rome’s Tiber Island was made to penetrate into “the water table, or natural subterranean water,” and currently functions as a water source in the same way as it did at its creation a millennium ago (Ibid., 242).

Wallerius is largely credited with “discovering” the process of evaporation via the oft-privileged scientific method, the cycle of heating, boiling, and evaporation into steam is a highly observable environmental cycle that has been theorized since Ancient Greece.⁵² On his journey along the boiling Phlegethon, this vapor from the river saves Dante: “fummo del ruscel di sopra aguggia, / sì che dal foco salva l’acqua e li argini” (XV.2-3; “the river’s vapors hover like a shade, / sheltering the banks and the water from the flames”). Vapor put off by the boiling water cascades down around Dante and his guide, effectively shielding them from the fire, which falls all around them and would otherwise destroy them. Caponi writes that “nature is thoroughly confounded in this girone. Rather than rising, fire falls. Sand does not extinguish flame, but itself burns.”⁵³ To Caponi, the falling fire has made the Phlegethon a wasteland, and the shelter provided by the Phlegethon’s vapor “retains its contents to forestall life rather than protect it.”⁵⁴

However, I assert that falling fire is one in a series of lively agents in the river’s environment. By virtue of the boiling river and falling fire, we are presented with an

⁵²Wilfried Brutsaert, “History of the Theories of Evaporation—A Chronological Sketch,” *Evaporation into the Atmosphere: Environmental Fluid Mechanics* 1 (1982): 12-36.

⁵³Caponi, “Like Streams in a Desert Land,” 249.

⁵⁴Ibid., 253. This is a popular interpretation: that the desert area around the Phlegethon, as home to the so-called violent against God (via nature), should be barren and void of life—both literally in its material environment, and figuratively, as it is there that Dante finds the “Sodomites.” See also: Irma Brandeis, *The Ladder of Vision: A Study of Dante’s Comedy* (New York: Anchor, 1962); Julia Bolton Holloway, *Twice-told Tales: Brunetto Latini and Dante Alighieri* (New York: Peter Lang Publishing, 1993); Marc Cogan, *Design in the Wax: The Structure of the Divine Comedy and Its Meaning* (Notre Dame, IN: University of Notre Dame Press, 1999). For a more nuanced reading of this association, see: Teodolinda Barolini, “Inferno 14: Sunt lacrimae rerum,” *Commento Baroliniano, Digital Dante*. New York: Columbia University Libraries, 2018, <<https://digitaldante.columbia.edu/dante/divine-comedy/inferno/inferno-14/>>. This chapter more capaciously considers what constitutes ‘life’ by analyzing this environment’s lively and adaptive environmental cycles.

image of an environment whose network of interconnections are symbiotic and self-constitutive: only the combination of all hubs in this network allows the functioning of any of them. Consider Heraclitus, who writes that “that which always was, and is, and will be, everlasting fire [...] replenish[ing] in measure as it burns away.”⁵⁵ In this monist view of nature and cosmos, the liveliness and propensity for change and adaptation that is embodied in fire makes it the central hub in yet another network, wherein its transmogrifications create all things. Quenching in measure, the Phlegethon’s vapor forms protective margins: “li margini fan via, che non son arsi, / e sopra loro ogne vapor si spegne” (XIV.141-2; “the margins are our road, they do not burn, / and all the flames above them are extinguished”). Kindling in measure, Brunetto Latini notes “là surger nuovo fummo del sabbione” (XV.117; “new smoke rising from the sand”), where the raining fire has caught fire to the ground outside the protective margin, making it necessary for Dante and Brunetto to part ways. Superheated subterranean ground—flaming sand and the Phlegethon’s underground passage in *Inferno*—creates a boiling river, whose boiling in turn creates a cascade of vaporous mist that quenches the flame in measure, and so on in an eternal cycle. Rather than a vapor that isolates the river from its surrounding environment, or a fire that creates a wasteland around it, I read the mist, the river’s boiling, and the fiery rain as having a networked agency in which they act in synchronicity to, by their combined effects, ensure their mutual continuance. By reading past the allegory of the Phlegethon cantos and into the materiality of this imagined

⁵⁵Heraclitus, *Fragments: The Collected Wisdom of Heraclitus*, trans. Brooks Haxton (New York: Viking Penguin, 2003), 15.

environment, we reveal the more nuanced qualities of the environment itself, whose elements and cycles actively self-constitute for the sake of their collective continuance.

Like the swampland waterbodies before it, Dante's depiction of the blood-red riverway generates a portrait of an environment that is both agential and adaptive. Here, it behooves me to mention several places in which Dante-pilgrim seeks external attribution for the rivers' agency as he moves past them. As he and Virgil approach the edge of the Phlegethon and the Wood of Suicides, Dante comments on "si vede di giustizia orribil arte" (XIV.6; "God's justice in its horrible operation"). Further along the Phlegethon, he observes large embankments and ponders on "lo maestro" (XV.12; "the engineer") who made them, "qual che si fosse" (XV.12; "whoever he may have been"). Both directly and indirectly, Dante alludes to the environmental goings-on in *Inferno* as being under God's direction and dictation; Dante's own admittance to Hell as well as Virgil's freedom to move throughout Hell and Purgatory are additional testaments to this. However, this association does not disallow the infernal environments their adaptive and agential power; if anything, it strengthens it.

In Canto XI, Virgil and Dante deviate into a brief philosophical discussion as it relates to the third type of violence punished in the Seventh Circle, violence against God. Here, Virgil parses the sub-grouping further, describing "come natura lo suo corso prende" (XI.99; "how Nature takes her course") from God—with "natura" meaning nature, the natural order, and human nature variably. He continues to cite from Aristotle's *Physics*, stating that art—or human industry and creations—follow from nature in turn, therefore "che vostr' arte a Dio quasi è nepote" (XI.105; "your art may be said to be

God's grandchild"). While the poem's hierarchization is inescapable, 'to follow from' does not disallow agency in turn. While nature acts according to divine example, nature still acts. And indeed, the models of environmental action and, I argue, adaptation that it lays forth come *before* human models, making Dante's own "art" derivative of the environments he passes through. This concept becomes increasingly important in the following section, wherein I use the tenets of seep ecology to detail how the creaturely denizens of *Inferno*, human shades included, engage in models of adaptation that follow from those of the environments around them.

The Message in the Mud: Creaturely Adaptation

I now turn to the cycles of creaturely adaptation within *Inferno* that follow from the models laid out by the waterways in the previous section, as the models of adaptation exhibited by the waterbodies seep into the ecosystems of the creatures that inhabit them. While I have previously briefly mentioned the "seep" that occurs between the Italian overworld and infernal otherworld, in this section I engage more fully with seep ecology as theorized by Steve Mentz, wherein entities engage in fluid processes of exchange that both remove seemingly solid boundaries while maintaining entities' rough distinctions. Before more fully analyzing seep ecology's role in the adaptive behaviors of the poem's biosystems, I want to first provide a brief example that illuminates seep ecology at work. In the Third Circle, realm of the Gluttons, Cerberus, and torrential rain, Dante enters a space

[...]de la piova
eterna, maladetta, fredda e greve;

regola e qualità mai non l'è nova.
Grandine grossa, acqua tinta e neve
per l'aere tenebroso si riversa;
pute la terra che questo riceve.

[...]in the round of rain
eternal, cursèd, cold and falling heavy,
unchanging beat, unchanging quality.
Thick hail and dirty water mixed with snow
come down in torrents through the murky air,
and the earth is stinking from this soaking rain.
(VI.7-12)

Cerberus is mythologically a dog but in *Inferno*, metaphorically a “vermo,” a worm, a beast whose sounds and attributes are “caninamente” (VI.15; “dog-like”). Cerberus stands over the shades, submerging them in the mess of mud made by mingling water and earth. Below Dante, “urlar li fa la pioggia come cani” (VI.19; “under the rain [the sinners] howl like dogs”), while above, “[Cerberus] le bocche aperse e mostrocci le sanne” (VI.23; “[Cerberus] opened up his mouth and showed his fangs”). Virgil makes the muck a tool when he “prese la terra, e con piene le pugna / la gittò dentro a le bramose canne” (VI.26-27; “grabbed up heaping fistfuls of the mud / and flung it down into those greedy gullets”). Reading this moment via the tenets of seep ecology, we have on one side Cerberus, the dog-like infernal beast, and on the other, the shades condemned for gluttony. The mud provides moments of contact between these two bodies: the mucky rain drives the sinners to howl dog-like, and in the *contrapasso*’s cruel aping of the shades’ earthly sin, it becomes a gluttonous meal for the great worm. The interstitial element mud becomes an ecological medium that acts as the central hub around which these bodies seep into the other: the shades howling dog-like, the dog feasting shade-like.

There is something particular about mud's substance that makes *Inferno*'s swamplands a suitable landscape to re-envision a series of seeping, networked agencies between the hydrosystems and the creatures that populate their shores. Elsewhere, Mentz writes that "thinking brown," the color of many muds and swamps, "pushes us into hybrid spaces that span living and nonliving matter."⁵⁶ Mud embodies contradiction and multiplicity of meaning within its matter. Hillary Eklund writes that different types of grounds, including mud, should be considered as a "crucial feature of the nonhuman world that mediates a variety of biological, social, and material relations."⁵⁷ That is, as an environmental medium to facilitate a network of relationships. In *Inferno*, these relationships do not temper Hell's inflicted punishments, but nevertheless demonstrate a level of environmental complexity written into these imagined literary environments. On the one hand, mud is a substance associated with toxicity and decay,⁵⁸ but inversely it becomes a medium for seep that facilitates "the mutual porousness of bodies and

⁵⁶Steve Mentz, "Brown," in *Prismatic Ecology: Ecotheory Beyond Green*, ed. Jeffrey Jerome Cohen (Minneapolis: University of Minnesota Press, 2013), 193.

⁵⁷Hillary Eklund, "Introduction," in *Ground-Work: English Renaissance Literature and Soil Science*, ed. Hillary Eklund (Pittsburgh: Duquesne University Press, 2017), 3.

⁵⁸Isidore claims that marshland creatures are inherently unclean (Barney, trans., *Etymologies*, XII.v.7). Hippocrates writes drinking water with deposits of mud engenders disease ("On Airs, Waters, and Places," in *Hippocrates: Complete Works*, trans. Charles Darwin Adams [East Sussex: Delphi Classics, 2016]: 164). Pliny claims drinking water with slime or mud gives bad color to the drinker (Rackham, ed. and trans. *Natural History*, XXXI.XXII).

environments”⁵⁹ and acts as a medium by which creatures can adapt to otherwise extreme environments, like the Acheron and Styx.⁶⁰

That muds were associated with the increased potential for malarial death through the European High and Late Middle Ages seems certain, though to what degree is less so. Magnusson and Squatriti argue that malaria did increase through the high Middle Ages.⁶¹ A. Asa Eger takes a more careful approach, denying that marshlands were “uninhabited malarial zones.”⁶² Robert Sallares, Abigail Bouwman, and Cecelia Anderung have argued that only in the mid-twentieth century did medical historians begin “to minimize the historical significance of malaria,”⁶³ attributing ancient mentions of “tertian fever”⁶⁴ to less virulent maladies. Richard Hoffman has traced the increased presence of the recessive gene *thalassemia* in Italians in the high Middle Ages to a probable increase in malaria caused by brackish and muddy marshes: the presence of the

⁵⁹Mentz, “Brown,” 194.

⁶⁰For a detailed discussion of the variable treatment of wetlands as both corrupted and generative, see Hillary Eklund, “Wetlands Reclamation and the Fate of the Local in Seventeenth Century England,” in *Ground-Work: English Renaissance Literature and Soil Science*, ed. Hillary Eklund (Pittsburgh: Duquesne University Press, 2017), 149-170.

⁶¹Magnusson and Squatriti, “The Technologies of Water in Medieval Italy,” 227.

⁶²A. Asa Eger, “The Swamps of Home: Marsh Formation and Settlement in the Early Medieval Near East,” *Journal of Near Eastern Studies* 7, no. 1 (2011): 70.

⁶³Robert Sallares, Abigail Bouwman, and Cecelia Anderung, “The Spread of Malaria to Southern Europe in Antiquity: New Approaches to Old Problems,” *Medical History* 48, no. 3 (2004): 311.

⁶⁴In the quote to follow, Dante mentions “quartan fever”—the difference between these two fevers lie only in the particular periodicity of the malarial fever, which would set in every third (tertian) or fourth (quartan) day. Though Sallares, Bouwman, and Anderung write that the establishment of malaria through Italy largely took place between 500-1000 C.E., until finally becoming endemic, therefore truly pervasive, in the medieval period (“The Spread of Malaria to Southern Europe in Antiquity,” 318).

gene offers protection against *Plasmodium falciparum*, the deadliest parasite to cause malaria in humans.⁶⁵ Within *Inferno*, Dante acknowledges the threat of this disease in a way that hints at its presence in the cultural consciousness. Receiving preparatory words from Virgil as they prepare to ride Geryon to the Eighth Circle, he muses,

Qual è colui che sì presso ha 'l riprezzo
de la quartana c'he già l'unghie smorte
e triema tutto pur guardando 'l rezzo
Tal divenne io a le parole porte

A man who feels the shivers of a [quartan] fever
coming on, his nails already dead of color,
will tremble at the mere sight of cool shade;
I was that man when I had heard his words.⁶⁶
(XII.46-51)

He invokes the symptoms of quartan fever, a malarial variety which assaults its victims with fever every three to four days. Though this specific mention is employed for metaphoric purposes and so does not involve the presence of muds, its inclusion indicates that malaria and its symptoms have enough contemporary presence to create a sensory touchstone for author and audience. In a horrifying real-life *contrapasso*, in 1321 Dante contracted quartan fever while riding through swampland between Ravenna and Venice and died several days later.

But while folks ancient, medieval, and modern associate mud and slime with death and toxicity to varying degrees, it is also a site of life and generation. Ancient and

⁶⁵Richard C. Hoffman, *An Environmental History of Medieval Europe* (Cambridge, UK: Cambridge University Press, 2014), 300-301.

⁶⁶Musa's translation altered slightly, in brackets, to reflect Dante's "quartana" with more clarity.

medieval sources nearly universally agree that mud facilitates spontaneous generation. Popularized by Aristotle, the fine details of spontaneous generation involve complex theories on soul, seed, and element, the details of which fill many book-length studies.⁶⁷ The simplest definition of spontaneous generation is life that comes not sexually, but spontaneously from non-living media. Ibn Sina goes so far as to propose that humans themselves spontaneously regenerated from mud after the Great Flood.⁶⁸ While this theory did not seem popular, it is worth noting that man was *initially* made of slime or mud with God's help: "formavit igitur Dominus Deus hominem de *limo terrae* et inspiravit in faciem eius spiraculum vitae et factus est homo in animam viventem" (Genesis 2:7; "therefore the Lord God formed man from the slime of the earth, and breathed into his face the breath of life, and he became a man with a living soul"). St. Augustine moves to reconcile spontaneous generation with Christian theology, proposing that, as Daryn Lehoux summarizes, creeping things "were co-created with the rest of the universe, and they simply wait around in other matter until the conditions are just right to bring them into actuality."⁶⁹

⁶⁷See: Jacques Roger, *Les sciences de la vie dans la pensée française du xvii^e siècle* (Paris: Albin Michel, 1963); Elizabeth Gasking, *Investigations into Generation: 1651-1828* (Baltimore: Johns Hopkins University Press, 1967); John Farley, *The Spontaneous Generation Controversy from Descartes to Oparin* (Baltimore: Johns Hopkins University Press, 1974); Maaïke van der Lugt, *Le ver, le démon et la vierge: Les théories médiévales de la génération extraordinaire. Une étude sur les rapports entre théologie, philosophie naturelle et médecine* (Paris: Les Belles Lettres, 2004); Hiro Hirai, *Le concept de semence dans les théories de la matière à la Renaissance* (Turnhout: Brepols, 2005); Daryn Lehoux, *Creatures Born From Mud and Slime* (Baltimore: Johns Hopkins University Press, 2017).

⁶⁸Lehoux, *Creatures Born From Mud and Slime*, 56-7.

⁶⁹In Book 4 of *De Genesi ad litteram*, Augustine writes, "inerat iam omnibus animatis corporibus vis quaedam naturalis et quasi praeseminata et quodammodo liciata primordia futurorum animalium, quae de corruptionibus talium corporum pro suo quaque genere ac differentiis erant exortura per administrationem ineffabilem omnia movente incommutabiliter creatore" (Daryn Lehoux, trans. "A Blossoming of

The most consistent subgenre of creatures made by spontaneous generation are what many sources, including Genesis, call *creeping things*: bugs, insects, amphibians, and some fish. The majority of spontaneously generated creeping things are key players in aqueous biosystems in ways both known and unknown to medieval writers, and were thought to be generated from aqueous matter (polluted water, dirty snow, mud, slime).⁷⁰ Albertus writes that “imperfect animals,” generate from sun, mud, or putrefying matter;⁷¹ Pliny holds that mussels and crustaceans are generated from sandy water, purplefish from “sticky juice,” and certain fishes by rotting mud;⁷² Virgil himself writes that moisture warms and ferments the bones of decaying bullocks, generating crops of bees.⁷³

Creatures,” in *Creatures Born From Mud and Slime* [Baltimore: Johns Hopkins University Press, 2017], 64-5; “Since [the creation] there has existed, in all bodies that have lived, a certain natural power, as well as the first-beginnings of animals-to-be, ‘pre-sown’ as it were, and sort of ‘woven in’ [with them], which [first beginnings] are to emerge according to their own particular species and type, by means of the decay of such bodies, the creator moving them all unmovingly through his ineffable direction”).

⁷⁰Etymologically, words for fertile ground are themselves generative. From Isidore: “nam mus terra, unde et humus” (Barney, trans. *Etymologies*, XII.iii.1; “mus [mouse] is earth, whence also the word soil [humus]”). Humus, we now know, is not simply soil but a mix of decaying matter rife with microorganisms. Humus is also from whence “homo,” man: “Homo dictus, quia ex humo est factus” (Barney, trans. *Etymologies*, XI.i.4; “Man is so called because he was made from the ground”), as well as various creeping things: “Musca ex Graeco venit, sicut et mus” (Barney, trans. *Etymologies*, XII.viii.11; “fly [musca] comes from the Greek, as does mouse [mus]”).

⁷¹Albertus Magnus, *Questions Concerning Aristotle's on Animals*, vol. 9, trans. Irven M. Resnick and Kenneth F. Kitchell Jr. (Washington D.C., Catholic University of America Press, 2008), 187.

⁷²“Et mituli, pectines sponte naturae in harenosis proveniunt; quae durioris testae sunt, ut murices, purpurae, salivario lentore [...] quae vero siliceo tegmine operiuntur, ut ostrea, putrescente limo” (Rackham, ed. and trans. *Natural History*, IX.lxxiv.160; “Also mussels and scallops are produced by spontaneous generation in sandy waters; fish with harder shells, like the two varieties of purple-fish, are generated by a sticky juice like saliva [...] but fish protected by a flinty covering, like oysters, are generated by rotting mud”).

⁷³“Hic vero subitum ac dictu mirabile monstrum aspiciunt, liquifacta boum per viscera toto stridere apes utero, et ruptis effervere costis” (Virgil, *Georgic IV* trans. Arthur S. Way [New York: MacMillan and Co., 1912], 116-7; “But here do they look on a portent sudden and strange to be told—Through the putrefied flesh of the kine, even all that the hides enfold, Bees buzzing come, from the rifted ribs”).

Discussion of these creatures is tinged with a wide spectrum of affect, from disgust to fascination. We see the latter from Virgil, whose *Georgics* describes the sight of swarming insects as “clouds pouring from measureless clouds.”⁷⁴ Pliny meditates on the ingenuity of minute creatures: “how surpassing the intelligence, how vast the resources, and how ineffable the perfection which [Nature] has displayed. Where,” he asks, “is it that she has united so many senses as in the gnat?”⁷⁵

These diverse ancient and medieval views of the meaning that can be extracted from mud and its creatures provide a framework for the long and varied lineages of cultural meaning mud is engaged in. For instance, in the early 2000s, cultural anthropologist Stefan Helmreich accompanied ocean scientists from the Monterey Bay Aquarium Research Institute (MBARI) on their vessel *Point Lobos* to collect mud deposits from ‘cold seeps,’ where methane seeps out into the ocean from the seafloor below, hoping to collect methanotrophic (methane-eating) microbes.⁷⁶ Their stated purpose was to decode “the message from the mud.”⁷⁷ In the genes of mud-dwelling microbes, they sought insight into how such “eensy creatures may be linked to global

⁷⁴“Immensaue trahis nubes” (Virgil, *Georgic IV*, trans. Way, 116-7; “Clouds trailing on measureless clouds”).

⁷⁵“in his tam parvis atque tam nullis quae ratio, quanta vis, quam inextricabilis perfectio! ubi tot sensus collocavit in culice?” (Rackham, ed. and trans. *Natural History*, XI.i.2). Pliny also iterates a principle that also guides my inquiry into Dante’s classic text, writing, “cum in contemplatione naturae nihil possit videri supervacuum” (Rackham, ed. and trans. *Natural History*, XI.i.4; “in the study of Nature, there are none of her works that are unworthy of our consideration”).

⁷⁶Helmreich, “The Message from the Mud,” 31.

⁷⁷*Ibid.*, 31.

biogeochemical processes, those interconnected biological, geological, and chemical cycles that sustain the Earth system. [They] will tell a story about how the smallest scales of marine biology affect the largest lattices of life.”⁷⁸ The largest natural cycles in the foreground of human sight are invariably indebted to the barely perceptible ones, regardless of time and discipline. The unquiet ecological relationships that exist in and around a culturally mired and contradictory element can both demonstrate the powerful drive and inescapable fragility of life, and also provide a model—for better or worse—for mankind’s navigation of this web of relationships.

The networks of relationships we witness in *Inferno* embody this spirit of uncomfortable, disquiet connection amid several deeply interrelated hubs, with many seeps among them: via mud, the human shades and creeping things engage in a complex and co-constitutive cycle of action, where adaptation manifests as behaviors undertaken to become better suited to their environment.⁷⁹ We see such networks first on the banks of the swampy Acheron, inside the Gates of Hell. It is there that Dante first encounters human shades. Virgil’s instructions are simple: “guarda e passa” (III.51; “look and pass them by”). This looking—or, as I will expand upon later, this extractive view—betrays cyclicity and interconnection between the non-living environment, creeping things, and human shades.

⁷⁸Ibid., 32.

⁷⁹My earlier illustrative example also discussed human shades and a form of “creeping thing”—there, Cerberus, the dog-like great worm, substituted in for the creeping things which will run through the rest of this section.

Dante observes that they “erano ignudi e stimolati molto / da mosconi e da vespe ch’eran ivi” (III.65-66; “went naked, and were stung and stung again / by the hornets and the wasps that circled them”). The creeping things partake of the bodies of the shades that populate the shores of their river. The agency then shifts, object becomes subject. It is now the shades that act, producing the material substrate, mud, required to generate those creeping things which torture in turn. Dante continues, “elle rigavan lor di sangue il volto, / che, mischiato di lagrime, a’ lor piedi / da fastidiosi vermi era ricolto” (III.67-69; “[the insects] made their faces run with blood in streaks; / their blood, mixed with their tears, dripped to their feet, / and disgusting maggots collected in the pus”). Blood and tears fall from the sinners, mingle with the riverbank, and coalesce into mud and pus, where life collects. *Spontaneous* generation is perhaps a misnomer, as the generation is not strictly spontaneous, but is brought about by a particular set of environmental circumstances, foremost among which is the presence of mud. From within a muddy substrate, as ancient and medieval sources contend, all varieties of creeping things might generate: the worms, flies, and wasps that find their home on the Acheron’s marshy shores among them. These shores are home to worms, another ‘creeping thing,’ which sustain themselves on the spirit’s byproducts, produced in turn by their flying brethren. From the mud and pus made from the blood and tears of sinners likely spring up the very creeping things that torture the shades into producing these substances. And so, if wasps and flies are generated from the mud of the Acheron, these become the wasps and flies that torment the sinners, whose fluids make the mud, and so on.

A complex network of symbiotic cycles emerges, rotating around the nexus of the water systems, wherein these creatures have adapted their environmental processes to suit their swampy surroundings. Importantly, adaptation need not imply a change qualitatively interpreted as for the better: the human shades here are in Limbo, and so by default cannot adapt in ways that make their existences more comfortable or easy. Though these creatures, human shades included, have adapted into a symbiotic relationship, it is important to keep in mind that symbiosis simply describes a mutualistic network between different species of organisms. While many people associate symbiosis with its subcategory mutualism (the mutual benefit of both organisms), it can also manifest as commensalism (wherein one organism is benefited and the other neutral) or parasitism (wherein one organism is benefited and the other harmed).

As such, with connectedness comes not harmony, but an intense and personal fragility.⁸⁰ While I analyze the connective networks that manifest in systems of environmental adaptation, the goal of this analysis is not to perpetuate a harmonious notion of an interconnected nature and cosmos. Such a conclusion is too comforting, and Hell is distinctly discomforting. While its tortures bring poetic justice to the sins of the sufferers, they are also shockingly bodily and inescapably personal. It is uncomfortable to recognize that you might one day be forced to adapt to a cycle in which worms flourish off the slime sloughed off your eternally decaying body—a concept morbidly

⁸⁰To return to mycorrhizal networks, evolutionary biologist Toby Kiers sees a fraught relationality in the symbiosis these environments engage in: “where some scientists see a big cooperative collective, I see reciprocal exploitation [...] Both parties may benefit, but they also constantly struggle to maximize their individual payoff” (Jabr, “The Social Life of Forests”). This shows how even mutualistic symbiosis is not harmonistic.

investigated by myriad medieval writers.⁸¹ To read through *Inferno* is to be leveled by nature, which engages in cycles of adaptation without special consideration or privileging of humanity: from this disturbing affect, Dante will eventually extract an anthropocentric warning—rather than a dis-anthropocentric environmental understanding—that leads him out of his metaphorical *selva obscura* with a message of example for his readers.⁸²

In these first few cantos then, *Inferno* depicts a network of relationships between the creeping things and shades, wherein they depend on each other for their continuation even as they destroy each other slowly and eternally. This eternal cycle has adapted to thrive along the muddy banks made by the Old Man's tears which have adapted in turn into the swamplands of *Inferno*'s first half. Dante, the sole living body traversing the hellscape, is not held apart from these networks, but feels them work upon him—or at the very least threaten to. After all, Beatrice has intervened after Dante “ché la diritta via era smarrita” (I.3; “wandered off from the straight path”), and she has appealed to God to allow Virgil to guide Dante on a tour of Hell and Purgatory in hopes that he might “tenere altro viaggio” (I.91; “journey down another road”). In other words, she fears he has strayed so much as to be eternally condemned; therefore, every shade the pilgrim passes as he travels through the infernal landscape carries the latent potential to be

⁸¹For a literal example, see *A Disputacioun Betwyx þe Body and Wormes* (Jenny Rebecca Rytting, trans. “A Disputacioun Betwyx þe Body and Wormes: A Translation.” *Comitatus: A Journal of Medieval and Renaissance Studies* 31, no. 1 [2000]: 217-232.). For how Western thought has negotiated humanity's place in the world and universe between the classical period and eighteenth century, see Clarence J. Glacken, *Traces on the Rhodian Shore: Nature and Culture in Western Thought from Ancient Times to the End of the Eighteenth Century* (Berkeley: University of California Press, 1967).

⁸²For more on indifferent nature, see Levi Bryant, “Black,” in *Prismatic Ecology: Ecotheory Beyond Green*, ed. Jeffrey Jerome Cohen (Minneapolis: University of Minnesota Press, 2013), 290-310.

Dante's future fate: Virgil confirms as much when he tells Dante, "Ond' io per lo tuo me' penso e discerno / che tu mi segui" (I.212-3; "And so, I think it best you follow me for your own good").

Dante is remarkable in that he, like the environmental networks he will traverse in *Inferno*, is a seepy entity, divided into Dante-poet and Dante-pilgrim. The seepage between poet and pilgrim blurs the distinction between poem and reality.⁸³ The poet speaks through the pilgrim when Dante admits to Virgil, "tu se' solo colui da cu' io tolsi / lo bello stilo che m'ha fatto onore" (I.86-7; "you alone [are] the one from whom I took the noble style that was to bring me honor"): Dante-poet has already taken something from Virgil, which makes the ancient poet an apt "maestro" to guide both the pilgrim's progress and understanding through the infernal environments. Which Dante, we might ask, has been saved by the falling vapors of a scorching river? Is it merely the pilgrim, or is it also the poet, who walked this Earth with every reader of his poem for the last seven hundred years? How close to these infernal networks have we thus become, courtesy of our poet-pilgrim?

Econarratologists Erin James and Eric Morel consider "how readers emotionally and cognitively engage with such representations [of environments] and how the process of encountering different environments in narratives might affect real-world attitudes and

⁸³Kirkpatrick writes, "throughout the *Commedia*, Dante presents himself in a double part—as a being, within this unremittingly experimental text, always himself, always other than himself [...] instead of supposing that the author is able to stand apart from these questions, in some all-controlling posture, we can see him better as one who, in the course of the narrative, constantly re-opens those questions" ("Introduction," lx).

behaviors of those readers.”⁸⁴ Elsewhere, they phrase this as the process that “happens to readers when they mentally inhabit the imagined environments of narratives.”⁸⁵ In other words, how do readers adapt after they have encountered a certain narrative environment or process? Dante’s *Inferno* is not only a Christian allegory, but a potential material futurity for its reader. This attention toward emplaced econarratology is doubly fitting, as bodies of reader and narrative—between reader and the phenomenon that is being *narrativized*—become less distinct as Dante progresses further through Hell. Because of the slippage between -poet and -pilgrim, the networks that have the potential to enmesh Dante have the potential to enmesh the poem’s reader as well, drawing them towards an acknowledgement of their own inevitable involvement with the models of seep ecology and the networks of symbiosis and adaptation within the poem. Dante admits as much in *Purgatorio*, when he states that his observations and their reporting are conducted “in pro del mondo che mal vive” (*Purg.*XXXII.103; “for the good of sinners in [his] world”), effectively implicating the poem’s readers into the adaptive environments Dante transverses.

As Dante moves into the middle pouches of the Eighth Circle, the process of seeping begins to blur distinctions between the shades and the creeping things around them:

[...] a l’orlo de l’acqua d’un fosso
stanno i ranocchi pur col muso fuori,

⁸⁴Erin James and Eric Morel, eds., *Environment and Narrative: New Directions in Econarratology* (Columbus: Ohio State University Press, 2020), 1-2.

⁸⁵Erin James and Eric Morel, “Ecocriticism and Narrative Theory: An Introduction,” *English Studies* 99, no. 4 (2018): 359.

sì che celano i piedi e l'altro grosso:
Sì stavan d'ogne parte i peccatori

[...] and just as on the margins of a ditch,
frogs crouch, their snouts alone above the water
so as to hide their feet and their plump flesh,
So here on every side these sinners crouched.
(XXII.25-28)

As if in the *orlo*—translated here as a margin—of a ditch, the shades behave frog-like in a pit of bubbling pitch. Brenda Deen Schildgen writes that such similes “function as microscopic views of the natural world of creatures and as part of the natural order of Dante’s created universe.”⁸⁶ The seep occurring between the formerly distinct bodies of human-shade and creeping thing manifests here via simile, as one figuratively takes on the attributes of another. This microscopic view anticipates the macroscopic: Kirkpatrick observes how Dante “can move with perfect coherence from the microscopic to the macroscopic vision.”⁸⁷ As this microscopic simile becomes macroscopic reality, the decreasing separation between bodies grows even more visceral, more literal, and more disturbing in the seventh pouch of the Eighth Circle, when Dante and Virgil reach the Thieves. Dante recounts:

Insieme si rispuosero a tai norme,
che 'l serpente la coda in forza fesse,
e il feruto ristinse insieme l'orme.
Le gambe con le cosce seco stesse
s'appiccar sì, che 'n poco la giuntura
non faceva segno alcun che si paresse.
Togliea la coda fessa la figura

⁸⁶Brenda Deen Schildgen, “Animals, Poetry, Philosophy, and Dante’s *Commedia*,” *Modern Philology* 108, no. 1 (2010): 38.

⁸⁷Kirkpatrick, “Introduction,” xli-xlii.

che si perdeva là, e la sua pelle
si faceva molle, e quella di là dura.
Io vidi intrar le braccia per l'ascelle,
e i due piè de la fiera, ch'eran corti,
tanto allungar quanto accorciavan quelle.
Poscia li piè di retro, insieme attorti,
diventaron lo membro che l'uom cela,
e 'l misero del suo n'avea due porti.
Mentre che 'l fummo l'uno e l'altro vela
di color novo, e genera 'l pel suso
per l'una parte e da l'altra il dipela [...]
e la lingua, ch'avea unita e presta
prima a parlar, si fende, e la forcuta
ne l'altro si richiude; e 'l fummo resta.
L'anima ch'era fiera divenuta,
suffolando si fugge per la valle,
e l'altro dietro a lui parlando sputa.

These were the ways they answered to each other:
the serpent split its tail into a fork;
the wounded sinner drew his steps together.
The legs and then the thighs along with them
so fastened to each other that the juncture
soon left no sign that was discernible.
Meanwhile the cleft tail took upon itself
the form the other gradually lost;
its skin grew soft, the other's skin grew hard.
I saw the arms that drew in at his armpits
and also saw the monster's two short feet
grow long for just as much as those were shortened.
The serpent's hind feet, twisted up together,
became the member that man hides; just as
the wretch put out two hind paws from his member.
And while the smoke veils each with a new color,
and now breeds hair upon the skin of one,
just as it strips the hair from off the other [...]
His tongue, which had before been whole and fit
for speech, now cleaves; the other's tongue, which had
been forked, now closes up; and the smoke stops.
The soul that had become an animal,
now hissing, hurried off along the valley;
the other one, behind him, speaks and spits.
(XXV.103-120, 133-138)

What first presents itself as simile several pouches prior has reached its logical but upsetting conclusion, as man and snake transmogrify explicitly and infinitely. To *cambiar* their matter, to literally exchange it, producing at all points along the way a chimeric being composed of seeping points. The biosystemic adaptation that took place along the shores of the swamplands early in *Inferno* exhibited networks of symbiotic exchange but remained distinct entities. As Dante has progressed, these entities have grown less and less distinct, until the bodies of the human shades become fully and physically absorbed into cycles of adaptation that alter their materiality.

This process has unnerved Dante, who reports that “e avvegna che li occhi miei confuse / fossero alquanto e l’animo smagato” (XXV.145-6; “the spectacle confused my eyes / and stunned my mind”) and beseeches his reader: “a qui mi scusi / la novità se fior la penna abborra” (XXV.143-144; “may the strangeness plead for me / if there’s been some confusion of my pen”). He struggles to describe what he cannot understand, though given the length and clarity of his description as well as his own admission, this struggle seems mainly mental. Complex iterations of the disquiet and fraught relationships between things in *Inferno* have been on display since he entered Ante-Inferno, but here, Dante inescapably recognizes the implication of himself and humanity more widely in this cycle. “Se tu se’or, lettore” (“If, reader”), he warns us, “a creder lento /ciò ch’io dirò, non sarà maraviglia,/ chè io, che ‘l vidi, a pena il mia consent” (XXV.46-8; “you are slow now to believe / what I shall tell, that is no cause for wonder, / for I who saw it hardly can accept it”). His narrative intervention pleads to the readers, to us, who narratively occupy

this environmental space whose network extends out to us in turn. Humanity is not above the fray, but wound into its web of constant, precarious exchanges.

When, earlier, Virgil recounts a discussion with Beatrice wherein he asks her why she is not afraid of the realms outside Paradise, she replies, “[t]emer si dee di sole quelle cose / c’hanno potenza di fare altrui male; / de l’altre no, ché non son paurose” (II.88-90; “A man must stand in fear of just those things / that truly have the power to do us harm, / of nothing else, for nothing else is fearsome”). Thus, Dante’s fear throughout *Inferno* denotes the networks that still—at that moment, at least—have the potential to absorb him. The central conceit of *Inferno* is that by observing the consequences that await sinners in their “seconda morte” (I.117; “second death”) in Hell, plus “olor che son contenti / nel foco” (I.118-9; “those who rejoice / while they are burning”) in Purgatory, and finally “le beate genti” (I.120; “the blessed”) themselves in Paradise, Dante—in many ways, a proxy for the reader—can learn some sort of lesson that sets his life back on course. Virgil facilitates this lesson, ensuring Dante’s observations of Hell’s environments lead to some sort of intellectual understanding, something Dante can take from Hell without being consigned to eternity there. In turn, Dante-poet urges his “lettor,” reader, to “prender frutto / di tua lezione” (XX.19-20; “[to take] benefit / from reading of my poem”). Thus, the poem’s ultimate goal is adaptation itself: a series of adaptive models with varying qualitative effects have been observed throughout the poem’s ecosystems, with the ultimate intention of extending this network past the boundaries of the narrative itself. Not only must Dante extract meaning from Hell’s

environment, but he seeks to be instructional, positioning his audience into an extractive view as well.

Botticelli's *Inferno*: Textual-Visual Adaptation and the Extractive View

Arguably, the two primary twenty-first century applications of the word “adaptation” refer either to the ecological process by which an entity becomes better suited to its surrounding environment or biological processes, or to media adaptations in which the form or format of a given text is in some way transposed, altered, or amended.

Throughout this chapter I have discussed the former, extending this concept of adaptation—and the subsequent extractivism Dante enacts—to environments themselves as well as their organic nonhuman and human denizens. While, as I have discussed, this environmental adaptation does involve adaptation of form as lines between poet, pilgrim, and reader blur, in this section I turn to a different type of adaptation: Sandro Botticelli's adaptation of Dante's textual universe into a visual one. In 1482, more than a century after Dante's penning of his magnum opus and subsequent death, Lorenzo Pierfrancesco de' Medici commissioned Botticelli to create a set of drawings to accompany the entirety of Dante's poem. Paul J. Papillo writes that this commission came while “a Medici effort to revive the poet's legacy for the honor of Florence was in full swing.”⁸⁸ Liana De Girolami Cheney also contextualizes the larger cultural importance of the project, writing that it was directly predicated by the Platonic Academy of Florence's endeavors to

⁸⁸Paul J. Papillo, “Rogue images in manuscripts of the Divine Comedy,” *Word & Image* 23, no. 4 (2007): 426.

“restor[e] Dante’s reputation with its publication of Cristoforo Landino’s *Commentary on the Divine Comedy* on August 30, 1481,”⁸⁹ for which Botticelli created nineteen drawings that were subsequently engraved by Baccio Baldini. Lorenzo’s commission would be grander in scale than Landino’s, with a full-page 32.5 cm x 47.5 cm illumination for each of the one hundred cantos in the three-part poem, a two-page vertical illumination depicting a full-figure image of Satan, and Botticelli’s now-famous Chart of Hell. Papillo writes that the stakes in this endeavor were no less than “the painter’s reputation, patronage of the Medici, the glory of Florence.”⁹⁰

After their creation, Botticelli’s drawings were lost until the nineteenth century. When they resurfaced, only ninety-two were extant, with many of the missing drawings coming from the beginning of *Inferno*. They were clearly unfinished, as only a handful of the drawings were illuminated, including the famous chart. Scholarly opinion of Botticelli’s drawings has fluctuated since their discovery. Barbara J. Watts writes that largely, early twentieth-century scholars “have criticized the *Inferno* illustrations for being too literal and, for the most part, uninspired,”⁹¹ while Cheney observes that they “have been widely faulted for failing to evoke the horrors of the damned and Hell’s wretched desolation.”⁹² More recently, scholars note the unique nature of Botticelli’s

⁸⁹Liana De Girolami Cheney, “Illustrations for Dante’s *Inferno*: A Comparative Study of Sandro Botticelli, Giovanni Stradano, and Federico Zuccaro,” *Cultural and Religious Studies* 4, no. 8 (2016): 489.

⁹⁰Papillo, “Rogue images,” 426.

⁹¹Barbara J. Watts, “Sandro Botticelli’s Illustrations for *Inferno* VIII and IX: Narrative revision and the role of manuscript tradition,” *Word & Image* 11 no. 2 (1995): 149.

⁹²Cheney, “Illustrations for Dante’s *Inferno*,” 497.

drawings. Deborah Parker writes that visual representations of Dante's *Inferno* that predated Botticelli's were "neither as comprehensive nor as detailed" as Botticelli's imaginings,⁹³ while Papillo similarly comments on how "[t]he sparseness of precedents for Botticelli's 92 designs for a frequently illustrated text signals the creativity of the artist."⁹⁴ Scholars such as Watts, Parker, and Cheney discuss how Botticelli's drawings can be read as a visual interpretation of Dante's text. Watts observes that the drawings are an "innovative pictorial adaptation whose chief determinant was the artist's own interpretation of Dante's text."⁹⁵ Cheney writes that the drawings demonstrate deep understanding and "dramatic response to the *Inferno* and its complex symbolism."⁹⁶ Relatedly, Parker calls the drawings "a distinctly visual reading of the poem."⁹⁷ Each of these scholars observes how Botticelli is not simply a medium by which Dante's poems are visualized either too literally or not gruesomely enough; rather, his drawings reveal someone who is adapting the moral message of *Inferno* from a place of deep engagement with the essence of the text.⁹⁸

⁹³Deborah Parker, "Illuminating Botticelli's Chart of Hell," *MLN* 128, no. 1 (2013): 87.

⁹⁴Paul J. Papillo, "Sandro Botticelli, Morgan's M676, and Pictorial Narrative: Gothic Antecedents to a Renaissance Dante," *Word & Image* 23, no. 1 (2007): 89.

⁹⁵Watts, "Sandro Botticelli's Illustrations," 149.

⁹⁶Cheney, "Illustrations for Dante's *Inferno*," 498.

⁹⁷Parker, "Illuminating Botticelli's Chart of Hell," 97.

⁹⁸Watts writes, "Botticelli, according to [his biographer, Giorgio] Vasari, was consumed by the study of Dante" (Barbara J. Watts, "Sandro Botticelli's Drawings for Dante's 'Inferno': Narrative Structure, Topography, and Manuscript Design," *Artibus et Historiae* 16, no. 32 [1995]: 197). Thus, even one generation after Botticelli, critics and scholars noted his deep engagement with Dantean content—in Vasari's opinion, to a fault.

Unfortunately, all of Botticelli's drawings of the Styx and Acheron—the two waterbodies I focus on through the first sections of this chapter—are now missing, as is the drawing for Canto XIV, when Virgil halts his and Dante's progress through the circles to explain the larger topography of Hell's riverbodies. In discussing Botticelli's role as a critical adaptor of the poem's ethos, I will focus instead on both the manuscript's overall structure and the famous Chart of Hell, which depicts all Nine Circles and the main rivers, with many figures measuring no more than a centimeter high. Botticelli depicts Hell as conical: Limbo, near the top of the cone closest to Earth's surface, has the greatest circumference, while the Ninth Circle at the bottom, with Satan embedded in its ice, has the smallest. The strata that make up the first six circles are relatively shallow, while the last three—which have more subcategories—are increasingly deep.

Papillo has written that Botticelli's drawings fall under the umbrella of what he calls "rogue images": images that contain "details that, surprisingly, do not originate with Dante or the poem's commentaries" and thus are "willful misrepresentations of Dante's text."⁹⁹ He argues that Botticelli transgresses the "fundamental law of manuscript illumination—the primacy of the word over the image" and the responsibility of "the illuminator [to adhere] to the parameters established by the scribe."¹⁰⁰ This conclusion elides the ways in which artistic features that initially seem to be deviations from the

⁹⁹Papillo, "Rogue images," 421.

¹⁰⁰Ibid., 422.

accompanying text can instead represent complex engagements with the textual matter. This calls to mind Christopher D. Queen's reading of the illuminations in MS Cotton Nero A.x., in which he argues that the illuminations, whose "crude" aesthetics were previously attributed to "unskilled artistic labor,"¹⁰¹ in fact represent "a deliberate aesthetic practice proposed first by the poet and taken yet further by the scribe-illustrator and colorist of the manuscript."¹⁰² This argument asks readers to reconsider their assumptions of what constitutes a "faithful" representation of given text. I argue that Botticelli's drawings engage with both the "seep" between poet and reader, and with the poet and pilgrim's extractive approach to the environments he traverses.

A common observation (and occasional complaint) about Botticelli's drawings concerns how they show "not simply what the pilgrim saw but also what Dante does not describe."¹⁰³ Unlike previous visual depictions of *Inferno*, Botticelli's chart foregrounds a "panoptic" view of Dante and Virgil's journey, rather than foregrounding the punishments.¹⁰⁴ *Inferno* explicitly acknowledges the scope of the infernal environment that extends beyond the limits of what Dante-pilgrim sees and experiences. On the Phlegethon's banks, Dante-pilgrim asks Virgil why the Phlegethon has only just become visible, far as they are through the underworld. Virgil acknowledges that though they

¹⁰¹Christopher D. Queen, "Negative Affect, Queer Aesthetics, and the Illuminations of Cleanness," *Exemplaria* 33, no. 2 (2021): 132.

¹⁰²*Ibid.*

¹⁰³Parker, "Illuminating Botticelli's Chart of Hell," 97.

¹⁰⁴*Ibid.*, 87.

have walked a long distance, it has always been “pur a sinistra, giù calando al fondo” (XIV.126; “toward the left and toward the bottom”), never completing a circular-cross section of any whole circle. Virgil describes a spiralized descent through the circles, wherein the small slice of Hell that Dante passes through constitutes only a fraction of Hell’s entirety. To this point, Parker writes that what “Dante’s reader, and, at times, Dante’s pilgrim, can forget in the immediacy of the moment, Botticelli’s viewer can never really evade in this visual synopsis.”¹⁰⁵ Botticelli’s zoomed-back view of the pair’s spiralized descent makes it impossible for the viewer of his chart to elide the expanse of Hell’s environments.

In depicting a cross-section of Hell that depicts wide-spread infernal environments that elude the pilgrim’s limited view, Botticelli demonstrates not a “willful misrepresentation of Dante’s text,”¹⁰⁶ but a deeply engaged understanding of it. As Parker observes, “Botticelli literalizes that which is allusive, concentrated, or metaphoric in Dante, explicitly providing details not furnished in the narrative”;¹⁰⁷ within the context of my argument, this includes Dante’s extractive view. He furthers this aim by repeating the figures of Dante and Virgil multiple times within single drawings both in the chart and in individual canto drawings, thereby simultaneously portraying multiple points on their journey at once. Within individual canto drawings, this allows Botticelli to

¹⁰⁵Ibid., 98.

¹⁰⁶Papillo, “Rogue images,” 421.

¹⁰⁷Parker, “Illuminating Botticelli’s Chart of Hell,” 97.

simultaneously depict the events of an entire canto. In the context of the chart, it demonstrates Botticelli's deeply engaged visual adaptation of the pilgrim's physical journey, as described by Virgil in Canto XIV.

In the Chart of Hell, Botticelli depicts Dante and Virgil twenty-five times at various stages in their journey.¹⁰⁸ The first three depictions of the pair show Dante and Virgil descending from the upper left-hand side of the cone, from the dark woods of Canto I to the banks of the Acheron in Canto III. The fourth instance of the pair is on the far side of the Acheron, at the top right-hand side of the cone. Presumably the pilgrim and his guide have now been taken by Charon across the river to the outskirts of Limbo; indeed, the next three depictions of the pair show them landing on the far side of the Acheron and descending a set of stairs into Limbo, the realm of virtuous pagans. From there, the remaining depictions of the pair are arranged at roughly a forty-five-degree angle, going through the circles down and to the reader's left until they reach the leftmost bottom side of the cone, where they descend through the Malebolge of the Eighth Circle and into the infamous and narrow Ninth. In each level, to either side of the pair the environments of Hell extend both outward and—when considering the physical reality of a cone beyond its two-dimensional representation—away into the distance. Just as Virgil tells Dante on the banks of the Phlegethon, the images of the pilgrim and his guide are arranged “pur a sinistra, giù calando al fondo” (XIV.126; “toward the left and toward the bottom”). In visually representing this spiralized journey, Botticelli's chart “reveals a

¹⁰⁸Open access tools like [World of Dante's Interactive Chart of Hell](#) can allow users to easily highlight various features of Botticelli's illumination, such as the locations of given circles or the position of the pilgrim and his guide.

greater sensitivity to Dante's poem and a more sophisticated approach to pictorial adaptation.”¹⁰⁹

I argue that Botticelli's panoptic depiction of Hell, which deviates so greatly from prior illuminations of *La Commedia*, is not an adaptation that deviates from the ethos of the text, but one that deeply engages with and visually represents the extractive view established both by Dante-pilgrim's actions within Hell, and Dante-poet's larger narrative framing, which I discussed in the previous section. Macarena Gómez-Barris has coined a phrase I have used throughout this chapter, “the extractive view”: a viewpoint that “facilitates the reorganization of territories, populations, and plant and animal life into extractible data.”¹¹⁰ Many of the examples throughout the chapter can be seen within this framework of the extractive view. For instance, when Virgil dams their progress as they approach the Phlegethon, he controls the flow of Dante's absorption of information about the organizational structure of Hell, reorganizing the infernal geographies into “extractible data” and adopting a pulled-back, birds-eye view that “commoditize[es] the landscape from above.”¹¹¹ This birds-eye view is also related to what Jeremy Bentham calls the “inspector's lodge”: the central position of the panopticon from which an individual surveys all others from a raised, centralized position.¹¹² In retelling the

¹⁰⁹Watts, “Botticelli's Illuminations,” 168.

¹¹⁰Macarena Gómez-Barris, *The Extractive Zone: Social Ecologies and Decolonial Perspectives* (Durham, NC: Duke University Press, 2017), 5.

¹¹¹*Ibid.*, 98.

¹¹²Jeremy Bentham, *The Panoptic Writings*, ed. Miran Bozovic (New York: Verso, 1995), 35.

pilgrim's journey, Dante-poet also "sees like a satellite from above,"¹¹³ adding a meta-textual layer to this extractive view: the textual seep discussed earlier between pilgrim, poet, and audience thus becomes part of Dante's extractive logic, as the poet—like Virgil—fashions environmental observation into "extractable data" for his audience. In faithfully and innovatively rendering the ethos of Dante's written text into visual adaptation, Botticelli does not only portray the vastness of Dante's environmental imagination. He also—likely inadvertently—reproduces Dante's extractive view, crystalizing it as a key feature of both his panoptic chart and individual canto drawings.

In rendering his panoptic cross-section of the infernal ecosystem alongside the multiple, miniature depictions of Dante and Virgil, Botticelli picks up on the poem's blurring between pilgrim and poet by providing, as Parker observes, "no distinction between Dante the poet and Dante the pilgrim."¹¹⁴ I argue that this, too, is a complex and engaged readerly interpretation of the poem, rather than an "elision" of "the difference between the poem who narrates the story of his journey and the pilgrim who experiences it" in favor of "a greater interest of portraying the grand design of Hell."¹¹⁵ I have argued throughout this chapter that Dante's *Inferno* portrays a complex system of adaptive environmental cycles, both in its environments and in the creaturely ecosystems that inhabit them. As detailed in the previous section, the escalating "seep" between these systems results in the figure of the poet and pilgrim become increasingly merged,

¹¹³Ibid., 97.

¹¹⁴Parker, "Illuminating Botticelli's Chart of Hell," 91.

¹¹⁵ Ibid.

divisions between the two blurring as the pilgrim approaches the final circle. In his chart, Botticelli encapsulates this blurring quality in his visual adaptation, literalizing this otherwise intangible “seep” between the figures of pilgrim and poet. When read through the framework of this chapter’s analysis, the figures of Dante in the chart do not elide distinctions between pilgrim and poet, but rather, emphasize their inextricability and embeddedness.

As I have argued at some length, because Dante-poet occupies the same universe as the poem’s reader, this blurred distinction consequently implies that the reader themselves might eventually *potentially* become embedded within the adaptive systems described in the previous sections. In its intended manuscript form, this effect would be emphasized by MS Reg. Lat. 1896’s overall format. While the escalating “seep” between human and non-human body and between Dante-poet and -pilgrim effectively begin to entwine the reader of the poem into its narrative, MS Reg. Lat. 1896’s format would have provided a spiralized “down and to the left” reading experience in which the act of reading would intentionally mirror Dante and Virgil’s physical descent. The manuscript opens vertically; on the top page is a canto’s respective illustration, while on the bottom page the canto itself is written out in four vertical pillars, as if supporting the drawing above. After “reading” the image above with its multiple iterations of Dante and Virgil as they move through the canto, the reader’s gaze moves downwards, descending through each column of text while also moving sideways through the columns themselves. Once finished with a canto, the reader moves down another level into the vertical manuscript, descending with Dante and Virgil into the next circle or region of Hell. Dante-poet

embodies a metaphoric “birds-eye view,” seeing and depicting the universe of the poem from above and fashioning its environments into extractable data. Botticelli replicates this view in his panoptic visual rendering of both the Chart of Hell and his canto drawings. In MS Reg. Lat. 1896’s intended manuscript form, the reader would have no choice but to embody this same position of the hegemonic and extractive birds-eye view, physically participating in and enacting this extractive view as they move vertically through the poem, thus further blurring distinctions between reader and textual universe. Like Dante, the reader of MS Reg. Lat. 1896 surveys the landscapes they traverse via a birds-eye view, before safely exiting these environments alongside Dante, with newfound, extracted moral meaning.

MS Reg. Lat. 1896 thus literalizes into reading practice what the poem’s intangible cycles of seep and adaptation implicitly invite the reader to do: to become absorbed into the narrative itself, participating in the descent alongside Dante and Virgil, implicated into the very cycles and systems they are reading about. Botticelli’s drawings and the overall manuscript form of MS Reg. Lat. 1896 are thus far from a “willful misrepresentation” of Dante’s text. As I have argued, what seem to be deviations from textual matter, when read through the lens of this chapter’s overall arguments about adaptation and extraction, instead reveal a complexly imagined engagement with both the explicit and implicit content of Dante’s poem. Botticelli’s visual adaptation of Dante’s poem thus immortalizes into form what goes too-easily overlooked in the poem itself, presenting its viewer with a practical and tangible reading practice in which they can reckon with their own embeddedness in the cycles of seep, adaptation, and extraction that

operate under the poem's surface. Readers implicated into these systems by virtue of the poem's metatextual layers and the manuscript's immersive form are thus compelled to reckon with the types of reading we are invited to undertake. The great danger of Dante's extractive view is not the immediate harm of this view—which, after all, is enacted in an imagined hellscape—but the ways in which it establishes approaches to the environment and modes of reading that invisibilize, normalize, or canonize the extractive view running beneath the text's surface.

Conclusion: Adaptation, Extraction, and Ecological Futures

To begin this conclusion, I return briefly to *Alien Ocean* author Stefan Helmreich, who shadowed MBARI biologists as they collected deep-sea mud from cold seeps in an attempt to analyze adaptation and connectivity between the tiniest methane-eating microbes and the largest earthly, geochemical processes. The biologist never gives Helmreich an answer about what “the message from the mud” is, but Helmreich says that he suspects it is “likely to be an ecological message, perhaps a message of warning to humans about fossil fuel use, agricultural intensification, and waste disposal.”¹¹⁶

What message can we decode in Dante's mud, *Inferno*'s aqueous ecosystems, the gaze Dante-pilgrim takes toward them (and Dante-poet suggests for his audience), and the perspective provided by visual adaptations of the text, such as Botticelli's manuscript illumination? On the one hand, *Inferno*'s complex portrait of aqueous environments that

¹¹⁶Helmreich, “The Message from the Mud,” 46.

engage in agentive adaptation and self-constituting cycles—and later, biosystems which engage in their own networks of relation adapted to these environments in turn—and Botticelli’s visual rendering depict a vision of the world in which human exceptionality is flattened. At times, the poem’s environments engage in systems of exchange that are fully apart from and unaffected by human action. In fact, at one point Virgil scolds Dante for presuming to know everything contained in a single circle, saying, “non se' ancor per tutto 'l cerchio vòlto; / per che, se cosa n'apparisce nova, / non de' addur maraviglia al tuo volto” (XIV.127-9; “you still have not completed a full circle; / so you should never look surprised, as now, / if you see something you have not seen before”). However, at other times, human shades are at the complete mercy of some of nature’s smallest organisms. Mentz, for instance, writes that recognizing the ways in which “[t]he nonhuman world engages our bodies constantly, in processes of exchange, digestion, excretion, and friction” can effectively challenge “anthropocentric visions of power.”¹¹⁷ For Laura A. Ogden, such networks and assemblages can “reintroduce[e] and reinscrib[e] the human back into the multispecies collective” in un-anthropocentric ways that show that “what it means to be ‘human’ is constituted through changing relations with other animals, plants, material objects, and the like.”¹¹⁸ The escalating adaptive behaviors that seep from hydrosystem to biosystem in *Inferno*, which in turn come to bear outside the confines of

¹¹⁷Mentz, “Brown,” 207. See also: Lowell Duckert, *For All Waters: Finding Ourselves in Early Modern Wetscapes* (Minneapolis: University of Minnesota Press, 2017), 209.

¹¹⁸Laura A. Ogden, “Landscape Ethnography and the Politics of Nature,” in *Swamplife: People, Gators, and Mangroves Entangled in the Everglades* (Minneapolis: University of Minnesota Press, 2011), 29, 2.

the narrative itself, thus have the potential to reveal a non-anthropocentric, if bleak and disturbing message.

However, perhaps the most important tenet of seep ecology is that it provides, as Mentz writes, “structural modes for environmental interseeping that resonate with our era of entangled catastrophe and crisis.”¹¹⁹ I have discussed how the agentive networks at work in the poem eventually transcend the narrative and reach the poem’s author and readers, a mission which Botticelli’s illuminations continue: indeed, the entire premise of *La Commedia* is that they do so. Kirkpatrick writes how *Inferno* “needs to be seen against the constant background of liturgical practice in which signs and text could be converted from their immediate meaning and thus contribute to the enactment of the story of divine creation,”¹²⁰ a perspective which inevitably affects the portrayal of the poem’s ecosystems. While our era of human-induced climate catastrophe might look toward the cycles of networked adaptation in *Inferno* and see a humbling, non-anthropocentric reckoning, in its contemporary, early fourteenth century moment, the final message instilled by observing these cycles is different. The poem’s pilgrim and reader should learn a lesson after the narrative is over, “converting,” in Kirkpatrick’s phrasing, Dante’s observations of infernal ecosystems into a lesson powerful enough to change their behavior and how they operate in the world. It is tempting to follow the logic of the previous paragraph and romanticize this as an instance in which man de-centers himself enough to realize that other systems of being can provide illuminating models for how to

¹¹⁹Mentz, “Seep,” 283.

¹²⁰Kirkpatrick, “Introduction,” lxv.

exist in the world—or else at least unseat the human from their privileged place in the *scala naturae*.

However, I argue that the learned adaptation that we see in *Inferno* portrays a troubling model of environmental extraction, in which someone visits a place, person, or concept, extracts from them knowledge or useful lessons, and leaves these entities behind without any lasting engagement with or concern for that entity's material circumstances. After all, the ecosystems of *Inferno*, where human shade is interwoven into systems of ecosystemic adaptation, is the *undesirable* outcome for Dante's readers. Dante tells his audience, “ma per trattar del ben ch’i’ vi trovai, / dirò de l’altre cose ch’i’ v’ho scorte” (I.8-9; “But if I would show the good that came of it / I must talk about things other than the good”). In this model, his observations of Hell's ecosystems become merely the means to an end. They are not autonomous entities with interesting material realities outside of an anthropocentric framework, but merely a tool; observing their adaptive cycles is an opportunity for Dante to extract knowledge for himself, which will in turn lead to “to an accurate understanding of God's working in the universe”¹²¹ that he can present to his readers for their supposed benefit.

This approach is reminiscent of cycles of extractive tourism, in which the visiting party feels at liberty to buy—therefore in their capitalist imaginary, partially own—a locale's history, culture, or natural landscape. These extractive engagements both

¹²¹Kirkpatrick, “Introduction,” xi.

exoticize a certain entity “as well as trea[t] it as a resource to be exploited.”¹²² All aspects of *Inferno*’s environments are at the mercy of Dante’s understanding. For instance, in the Wood of Suicides, which anticipates the Phlegethon, Dante snaps a branch from a tree, causing “sangue bruno” (XIII.34; “blood turned dark”) to well, and the human shade made into the tree to yell, “Perché mi schiante? [...] Perché mi scerpi? / Non hai tu spirto di pietade alcuno?” (XIII.33, 35-6; “Why are you tearing me? [...] Why do you rip me? Have you no sense of pity whatsoever?”) Virgil’s apology to the condemned tree-shade addresses not Dante’s supposed lack of pity, but his apparent liberty to enact whatever form of exploitation he wishes on his environment, if simple words do not sufficiently result in the appropriate understanding in any given moment:

“S'elli avesse potuto creder prima,”
 rispuose 'l savio mio, “anima lesa,
 ciò c'ha veduto pur con la mia rima,
 non averebbe in te la man distesa;
 ma la cosa incredibile mi fece
 indurlo ad ovra ch'a me stesso pesa.”

“O wounded soul,” my sage replied to him,
 “if he had only let himself believe
 what he had read in verses I once wrote,
 he never would have raised his hand against you,
 but the truth itself was so incredible,
 I urged him on to do the thing that grieves me.”
 (XII.46-51)

The infernal environments, the condemned shades, and the ecosystems that connect them become resources, exploited for meaning as Dante moves through the circles. In this

¹²²Vesa-Pekka Herva, Alix Varnajotb, and Albina Pashkevich, “Bad Santa: Cultural Heritage, Mystification of the Arctic, and Tourism as an Extractive Industry,” *The Polar Journal* 10, no. 2 (2020): 388.

view, Dante's approach to the ecosystems in *Inferno* becomes reminiscent of the modern phenomenon of extractive dark tourism, in which death is merchandised and packaged for consumption to, as Maria Sofia Pimentel Biscaia and Lénia Marques write, "project moral meaning."¹²³

One's view of whether we can read the escalating cycles of adaptation in this way partially comes down to what one counts as extraction.¹²⁴ At the most basic level, Dante forges his way through a series of underground paths and resurfaces with something new—albeit something immaterial. What, then, counts as material, and is that the same thing as being materially consequential? One of the things this chapter has attempted is to take a series of infernal waterways that serve deeply allegorical purposes, to reframe their material significance, and to demonstrate how that significance permeates other ecological systems in ways informed by seep ecology, which involves processes of fluid exchange between allegorical, symbolic, and material entities whose boundaries are both erased and maintained. This process of seeping naturally results in two entities that end up less distinct than they started. Therefore, I return to the question, what counts as material? With the distinction between narrative and reader effectively blurred, it is impossible not to consider even an allegorical river as materially consequential. As such,

¹²³Maria Sofia Pimentel Biscaia and Lénia Marques, "Dystopian Dark Tourism: Affective Experiences in Dismaland," *Tourism Geographies* 24, no. 2-3 (2022): 312.

¹²⁴Extraction is often used synonymously with the phrase "extractive capitalism"—though modern capitalism would not emerge until several centuries after Dante's lifetime, Justin Parks has argued that "extractivism is as old as modernity itself," ("The Poetics of Extractivism and the Politics of Visibility," *Textual Practice* 35, no. 3 [2021]: 353), and indeed, some call Dante the "inaugural author of modernity" (William Franke, *Dante and the Sense of Transgression: The Trespass of the Sign* [London: Bloomsbury Publishing, 2012], 23).

we must thus consider how navigating these spaces—both materially and allegorically—affects them.

It is a truism by now that reading affects how people interact with the world. Amelia Marini has argued, for instance, that “seeing and saying are looped processes: we do not only say what we see, we also tend to see the concepts we’ve learned to say,” and that by the practice of inhabiting texts via reading, we can “gain the very skills we must learn in order to live well upon this planet.”¹²⁵ She also adds that “climate wisdom might indeed be a matter of learning to inhabit words and the worlds we compose with them.”¹²⁶ However, I would argue that this largely depends on the words and worlds inhabited, and therefore, this assertion must also function as a warning. For instance, Gómez-Barris endeavors to “uncover what is submerged within local geographies that have been traversed by colonialism and extractive capitalism to show the ongoing force of colonial encounter.”¹²⁷ While the concept of extraction as Gómez-Barris describes it is often applied to physical processes that extract either resources or labor, I suggest that we apply extraction theory in a more capacious way, to acknowledge rhetoric and ideologies of extraction that establish extractive modes of thought and cultural paradigms. This less conventional application of reading for extractive ideologies allows us to examine this phenomenon even in a text like *Inferno*, in which Dante-pilgrim navigates imagined,

¹²⁵Amelia Marini, “Inhabiting Words, Inhabiting Worlds: A Case for Pragmatist Close Reading,” in *Close Reading the Anthropocene*, ed. Helena Feder (Taylor and Francis Group, 2021), 16.

¹²⁶Ibid.

¹²⁷Gómez-Barris, *The Extractive Zone*, 2.

literary environments with highly allegorical and symbolic purposes; the slippage between Dante-pilgrim and Dante-poet I address above acutely reminds *Inferno*'s reader how approaches to even imagined environments might easily 'seep' from their literary confines and manifest in the real world in urgent ways.

As readers who become narratively embedded in networks within and without Dante's poem, how should we learn to navigate its environments without traversing them in such a fashion? Is there a way that we can engage with *Inferno*'s ecological systems *without* extracting a lesson and then leaving them behind, as Dante has? It perhaps seems contradictory that this chapter has focused on non-human models of networked agency, and then pivoted to their seep into human networks of extraction. However, critics should resist leaning into only one of these interpretations and embrace their contradiction and multiplicity. As Gómez-Barris writes, "if we only track the purview of power's destruction and death force, we are forever analytically imprisoned to reproducing a totalizing viewpoint that ignores life that is unbridled and finds forms of resisting and living alternatively."¹²⁸ The picture *Inferno* paints concerning agency and extraction via the networks of nonliving and living matter that live in its own 'extractive zone,' therefore, is not either/or, but both/and.

This phenomenon of extracting-via-visiting also has consequences for the genre of ecocriticism itself, whose methods and theories I have intermittently deployed throughout this chapter and will continue to use throughout this dissertation. Perhaps the

¹²⁸Ibid., 3.

theory's most unsettling attribute is the way that certain sectors of the discipline have engaged with diverse forms of knowledge—particularly Indigenous methods and worldviews—in exploitative and extractive ways, repacking, de-contextualizing, and secularizing complex world views into a tidy theory divorced from lived, material circumstance. In other words, the way in which it approaches modes of thinking with complex legacies “as if [it has] just discovered the land,” as Margo Hendricks said of the colonization of PCRS at the 2019 RaceB4Race.¹²⁹ For instance, in 2004 Leanne Simpson discussed how “the Western academy is now becoming interested in certain aspects of Indigenous Knowledge, particularly those aspects that directly relate to the Western conceptualizations of ecology and environment.”¹³⁰

Almost thirty-five years earlier, as the environmental movement in the United States gathered steam, sociologist and activist Nathan Hare wrote that while Black Americans were redlined into areas of environmental decay and devastation for generations, “[t]he ‘ecology crisis’ arose when the white bourgeoisie [...] discovered that a sample of what they and their rulers had done to the ghetto would follow them to the suburb,”¹³¹ and that “white ecology” is largely animated by concern for the preservation

¹²⁹Margo Hendricks, “Coloring the Past, Rewriting Our Future: RaceB4Race,” *Race and Periodization: A RaceB4Race Symposium*, Arizona Center for Medieval and Renaissance Studies and the Folger Shakespeare Library, September 5-6, 2019, <<https://pressbooks.claremont.edu/clas114valentine/chapter/coloring-the-past-rewriting-our-future-raceb4race/>>.

¹³⁰Leanne R. Simpson, “Anticolonial Strategies for the Recovery and Maintenance of Indigenous Knowledge,” *American Indian Quarterly, Special Issue: The Recovery of Indigenous Knowledge* 28 no. 3/4 (2004): 373.

¹³¹Nathan Hare, “Black Ecology,” *The Black Scholar* 1, no. 6 (1970): 3.

of locales that the white bourgeoisie vacation in—that is, visit, extract from, and then leave—rather than a concern for environments in which marginalized people live, work, raise their families, etc. Hare concludes that the environmental movement thus “aimed at the hearts and purse strings of industrialists and hit the eyeballs of the white bourgeoisie.”¹³² In approaching lived circumstances and practices as theory or cause, ecocriticism and the environmental movement more widely have at times engaged the extractive view themselves and turned away from the lives of those most affected. These examples show how ideologies of extraction like those exhibited in *Inferno*, when not carefully deconstructed and interrogated, work toward establishing and normalizing cultural paradigms whose reach extends far beyond the narrative worlds that espouse them. Dante’s process of extracting moral messages from his textual surroundings via his narrative dark tourism creates a model that subsequently normalizes phenomena like real-world extractive tourism and behaviors that seek to subjugate certain peoples and places and make them ‘useful’ for dominant cultural hegemonies.

In revisiting an earlier anecdote, it is suitable, then, both that the anonymous biologist does not give Stefan Helmreich an answer about what the “message in the mud” is and that Helmreich in turn interprets it not as a message to take away, but as a warning. This chapter, too, does not attempt to answer what the message in Dante’s mud is. Rather, I have attempted to craft an argument that illuminates new considerations about how environmental networks, both inorganic and organic, operate throughout this piece of canonical medieval Italian literature, and to open questions and further conversations

¹³²Hare, “Black Ecology,” 2.

concerning the ethical implications for how those networks are portrayed and managed, both within the poem and without, as well as within larger theoretical genres and academic conversations. If we desire to engage *Inferno*'s ecological systems without extracting from them and leaving them behind, as Dante has, we must softly linger in the questions rather than loudly declare their answers.

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Chapter 2

The Aphotic Deep Sea in Medieval British Literature

Introduction

In August of 1934, William Beebe and Otis Barton became the first humans to view the aphotic deep-sea.¹ Their bathysphere descended 3,028 feet—just under 1,000 meters—in the waters off of Bermuda,² setting them in the shallowest portions of the bathypelagic zone. In that same year, Beebe recorded the details of their deep-sea exploration in his book entitled *Half a Mile Down*. After descending through the blue epipelagic zone, Beebe describes what no human had before witnessed: “At 1,700 feet...the most concentrated gazing showed no hint of blue left. All outside was black, black, black, and none of my instruments revealed the faintest glimmer to my eye. I had now attained one of the chief objects of this whole dive, namely, to get below the level of humanly visual light.”³ Though this depth is a mere fraction of what would turn out to be the very deepest ocean sounding—11,000 meters, famously recorded at Challenger Deep in the Mariana Trench in 1951 by the Challenger VIII⁴—it marks an important moment in

¹Aphotic, and alternatively photic, are terms used to describe zones of ocean or lake water based on the amount of light that penetrates their water columns. The aphotic zone refers to the depth of the water column at which less than 1% of light reaches: the shallowest estimate begins at about 200 meters and extends to the sea floor. The aphotic zone is further divided into the mesopelagic, bathyal, abyssal, and hadal zones.

²William Beebe, “Half a Mile Down,” in *The Ocean Reader: History, Culture, Politics*, ed. Eric Paul Roorda (Durham, NC: Duke University Press, 2020), 103.

³*Ibid.*, 106.

⁴Alan Jamieson, *The Hadal Zone: Life in the Deepest Oceans* (Cambridge, UK: Cambridge University Press, 2015), 5.

history, where technological mediation allowed mankind to view first-hand an extreme environment that otherwise exists far outside of our natural capabilities to access it.

While Beebe and Barton were the first to physically plumb these depths, western authors have been imagining their material make-up and cultural power for hundreds, even thousands of years. While medieval deep-sea imaginaries are the core focus of this chapter, to contextualize the importance of their legacy, I will begin this chapter with a brief reading of Beebe's twentieth century deep-sea exploration and his epistemological reliance on prior centuries of aquatic imaginations. I also draw out several key aspects of his account that reveal the ideological legacy of past centuries of deep-sea imaginaries, which took root when physical deep-sea exploration was nigh impossible.

As many scholars and researchers have noted, the primary obstacle to deep-sea exploration has always been that, despite the lingering vestiges of our aquatic ancestors such as the webbing between our thumbs and forefingers,⁵ humans are fundamentally terrestrial creatures—or at least surface creatures. Media theorist and ocean studies scholar Melody Jue writes about how her experiences learning to dive drew her attention to how humankind's "intrinsic postures, embodied habits, and muscle memory are all adapted to the gravitational conditions of walking on land and breathing air."⁶ As with other systemic biases, "these terrestrial habits of movement and orientation are so ingrained as to be virtually invisible, unless one experiences their interruption."⁷

⁵Karen Amimoto Ingersoll, *Waves of Knowing: A Seascape Epistemology* (Durham, NC: Duke University Press, 2016), 72.

⁶Melody Jue, *Wild Blue Media: Thinking Through Seawater* (Durham, NC: Duke University Press, 2020), 2.

⁷*Ibid.*, 2.

Interruption can be curiously relative. While descending into the aphotic zone, William Beebe writes, “when at 1,000 feet a voice reminded me that there were twenty-three hundred tons of water pressing in on the bathysphere, and the window against which I had my face was withstanding six and one-half tons, it meant very little.”⁸ The pressure-controlled bathysphere safely approximates terrestrial pressure-scapes and gravity-scapes, leaving Beebe’s bodily experience relatively uninterrupted. However, what he witnesses through the bathysphere’s window brings him great psychic interrupt:

[At 1,700 feet] I began to be inarticulate, for the amount of life evident from the dancing lights and its activity, the knowledge of the short time at my disposal, and the realization that most of the creatures at which I was looking were unnamed and had never been seen by any man were almost too much for any connected report or continued concentration.⁹

Physically or mentally, the extreme nature of such environments creates moments of disruption that can be construed in a variety of ways; while Jue reckons with the invisibility of pervasive terrestrial biases, Beebe wonders at his terrestrial exceptionality.

Long before technology like Beebe and Barton’s bathysphere granted humans the bodily mediation needed to physically sound the aphotic zone, deep-sea environments maintained a presence in the imaginaries of authors, artists, naturalists and more, spanning across ancient and premodern time periods, serving as a site of interrupt (which does not necessarily carry negative connotations). Beebe’s observations mark a notable

⁸Beebe, “Half a Mile Down,” 104.

⁹Ibid., 106.

linking moment in humanity's history with the deep sea, where the ideologies and images of the deep-sea imaginaries of those who came before him were observable in Beebe's own descriptions of his bathyspheric descent: namely, in an approach to the aphotic zone that stylizes it as mystically external to human timescales, and simultaneously (or consequentially) subsumes it into the rhetoric of colonial discovery. He meditates on the dissimilarity of the deep-sea to the other environmental extremes he has borne witness to:

I have climbed three and a half miles up the Himalayas and floated in a plane still higher in the air, but nowhere have I felt so completely isolated as in this bathysphere, in the blackness of ocean's depths. I realized the unchanging age of my surroundings; we seemed like unborn embryos with unnumbered geological epochs to come before we should emerge to play our little parts in the unimportant shifts and changes of a few moments in human history. Man's recent period of strutting upon the surface of the earth would have to be multiplied half a million times to equal the duration of existence of this old ocean.¹⁰

Beebe's meditation on the ocean's depths is both nuanced and contradictory, at once a dis-anthropocentric reckoning with the inflated self-importance of humanity relative to the width of the universe, and at the same time, a temporal and historical cordoning off of earthly space and an exceptionalizing isolation of the oceanic environment away from the rest of the worldly ecosystem. Timothy Morton remarks upon the estranging effect of human attempts to write about physical environments: "The more I try to evoke where I am [...] the more phrases and figures of speech I must employ [...]. The more

¹⁰Beebe, "Half a Mile Down," 108.

convincingly I render my surroundings, the more figurative language I end up with.”¹¹ Beebe’s string of figurative language perhaps seeks to decenter a human-centric view of history in favor of a larger narrative of deep time in which human existence is one small, integrated part, but this attempt to dissolve the distinctions imposed by man invariably wraps this environment into the narrative of human society, culture, and ideology nonetheless. Morton calls this dissonance *ecomimetic paradox*; Will Abberley posits that this ecomimetic paradox “has been particularly resonant in representations of subaqueous environments.”¹² To this effect, Margaret Cohen has comprehensively argued about how early deep-sea explorers such as Beebe initially drew on “literary fantasy to communicate aspects of undersea geology, biology, and phenomenology that defied physical conditions on land,” and that these allusions serve a purpose greater than “mere ornament.”¹³

That early descriptions of the deep-sea should fall back on past mytho-literary allusions and images in the first place is unsurprising. Though Beebe was the first to witness these depths firsthand, his conclusions about the deep sea have precedents as far back as the Hebrew Book of Genesis’s account of the “void and empty abyss”: the primeval deep-sea.¹⁴ The Deep, whatever its origin, precedes the creation of light—and

¹¹Timothy Morton, *Ecology without Nature: Rethinking Environmental Aesthetics* (Cambridge, MA: Harvard University Press, 2007), 30.

¹²Will Abberley, *Underwater Worlds: Submerged Visions in Science and Culture* (Newcastle upon Tyne: Cambridge Scholars Publishing, 2018), 1.

¹³Margaret Cohen, “Denotations in Alien Environments: The Underwater Je Ne Sais Quoi,” *Representations* 125 (2014): 104.

¹⁴Genesis 1:2, an infamously semantically ambiguous section of text, reads, “And the earth was void and empty, and darkness was upon the face of the deep” (Genesis 1:2). This *primaeva* deep is sometimes seen as a “‘watery chaos’ that existed before creation” (Tsumura, *Creation and Destruction*, 14). The fine details

thus night and day, and thus time as we know it—on the First Day of Creation. What we have then is a mysterious primordial water whose essence precedes light and daily cyclical time, and from this unfathomable ancestor comes our modern seas and oceans. William Beebe and Otis Barton broke new ground with their physical descent into the aphotic zone, but Beebe’s meditations on the externality of the deep-sea to recognizable human timescales sits firmly with a long lineage of such ideas in Western, monotheistic literary and cultural traditions.

Related to his observations of the deep sea’s temporal externality is Beebe’s colonial logic in being ‘the first’ to ‘discover’ this environment: “I was beyond sunlight as far as the human eye could tell, and from here down, for two billion years there had been no day or night, no summer or winter, no passing of time until we came to record it.”¹⁵ Margaret Cohen writes that one of the literary genres Beebe relies on most heavily is premodern travel narrative.¹⁶ Beebe mines the genre’s rhetorical trope of the ‘*je ne sais quoi*,’ which was deployed by European colonists and imperialists upon their invasions of indigenous lands in the Americas. Early deep-sea explorers employ this same rhetorical trope, “updated to their own secular era.”¹⁷

As a result, humanity’s earliest physical forays into the deep sea are involved at the very outset in long legacies of cultural tensions, preserved through centuries of

of theological and linguistic translational debates in Genesis are far beyond the reach of the current study, and whether the Deep precedes the Judeo-Christian God’s creation is bound to be eternally unsettled.

¹⁵Beebe, “Half a Mile Down,” 106.

¹⁶Cohen, “Denotations in Alien Environments,” 107.

¹⁷Ibid., 108.

literary work. In attempting to reveal ‘nature,’ Beebe’s account actually reveals what is now all but a given in environmental humanities criticism: that human representations of environments can never portray ‘real’ nature “independent of cultural networks of signs, values, and discourse.”¹⁸ However, as Beebe’s account reveals, the language and images an author uses to invoke the deep sea can be deeply revelatory of the way they consciously or subconsciously plan to integrate these environments into their human cultural frameworks. And inversely, these integrations have material effects on the very environments we cannot properly render. As Will Abberley observes, though “our experiences of nature are always already socially constructed, material realities nonetheless exist apart from our social constructions and, indeed, can be deeply affected by them.”¹⁹ Now that we can probe into the deep sea in new ways, understanding the cultural ideas that Western society subconsciously brings to this environment is more important than ever before. Despite the ways that it might be utilized for exploration, discovery, capitalism, globalization, and more, the deep sea is a lived, material environment, and these practices increasingly destroy aquatic habitats and life-systems both deep and shallow.

And yet, in the midst of various scientific ‘advancements’ into the ocean and the dangers they pose for our environmental future, it is obvious that writers reach back to past mytho-literary allusions and images in order to iterate experiences of the deep-sea.

¹⁸Abberley, *Underwater Worlds*, 14. It is perhaps unsurprising that medieval European texts, deeply affected by the religio-cultural concept that humans prove inadequate to fully understand or portray God’s universe, prove fruitful to examine from within this framework.

¹⁹Abberley, *Underwater Worlds*, 3.

While past centuries of Eurasian writers, naturalists, and natural philosophers could not physically access the deepest, darkest, aphotic depths of the sea, they nonetheless developed detailed literary imaginaries of this space. In this chapter, I will first discuss what thinking about, theorizing, and analyzing the deep sea can offer the fields from which my analysis stems: the blue humanities and environmental humanities more widely. I will then discuss two examples of deep-sea imaginaries in Middle English texts: Julian of Norwich's *Shewings* and the anonymous Pearl-Poet's *Patience*. While both texts demonstrate a nuanced, even innovative deep sea environmental consciousness—as with Dante's depiction of infernal environments in my previous chapter—these imaginaries are ultimately undermined by models of rhetorical extraction that both figure these environments as expendable and as merely “of use,” and in ways that have material consequences for people and environments.

The Surface Bias: Premodern Seas in Literary Scholarship

Medieval environmental historian Vicki Szabo remarks that, though ocean-inflected criticism²⁰ was once on the fringes of premodern environmental humanities, with the last two decades' influx of interest and study, “few now could contend that the medieval seas are overlooked.”²¹ For the last decade or so, premodern literary scholars have been doing

²⁰Szabo specifically labels this “maritime studies.” While this terminology makes sense for her own investigation of the intersection between cetaceans and medieval economics and history, for the present study, the terminology “maritime” denotes too heavily the involvement of oceanic environments and entities in specific economic, mercantile, and military ventures.

²¹Vicki Szabo, *Monstrous Fishes and the Mead-Dark Sea: Whaling in the Medieval North Atlantic* (Leiden: Brill, 2008), 24.

more expressly theoretical work in an attempt to upend the “terrestrial bias” perpetuated by previous premodern literary ecocriticism.²² An early proponent of these blue humanities, early modernist Steve Mentz, has suggested that we “[s]upplemen[t] our ‘green’ cultural turn with a ‘blue’ cultural studies that looks at our world through the deathly, inhuman, magical lens of the sea,” in order to “begin rebuilding narrative and interpretive practices to respond to our uncertain future.”²³ Early modern ocean and environmental literary scholar Dan Brayton suggests that the terrestrial bias of premodern ecocriticism is, in fact, a manifestation of a systemic terrestrial emphasis by western cultural thought. He suggests,

There is a notable reason to let ecocritics and our intellectual forebears off the hook for their terrestrial bias. For if we have been all at sea in our efforts to conceptualize the totality of this blue planet, this situation is not the fault of particular scholars so much as the legacy of the longstanding cultural status of the sea in Western culture as a realm of chaos and radical alterity that can scarcely be conceived, much less domesticated. This is not a matter of mere oversight or willful ignorance on the part of a few humanities scholars; it is a feature of European culture derived from biblical and Hellenic cosmogonies and articulated in countless works of literature.²⁴

²²Oceans historian Helen Razwadowski writes that, in general, “writers have embedded a terrestrial bias in virtually all stories about the past. Dry land is the presumed norm. Even coasts and coastal dwellers have been viewed as marginal and exceptional, as have swamps, marshes, cays, reefs and other littoral areas that are neither entirely wet nor dry” (*Vast Expanses: A History of the Oceans* [London: Reaktion Books, 2018] 7). While this chapter seeks to disrupt this terrestrial bias explicitly, all of my chapters contribute to this project: my first chapter via its focus on waterways and interstitial media such as swamp and mud, my third chapter via airspace and my final chapter via rhetoric of fear and extraction.

²³Steve Mentz, *At the Bottom of Shakespeare’s Ocean* (London: Continuum Publishing Group, 2009), xii-xiii.

²⁴Dan Brayton, *Shakespeare’s Ocean: An Ecocritical Exploration* (Charlottesville: University of Virginia Press, 2012), 22.

Among other things, this chapter will attempt to highlight the places where western premodern literature *does* engage in complex systems of thought and meaning-making with the sea—places that have been subsequently elided by certain sub-areas of scholarship.²⁵

Indeed, this approach is not new or novel. There is already a wide swath of criticism that engages with some aspect of premodern seas and their literary depictions, illuminating how new understandings of these environments can both alter our understandings of premodern European cultures and how they viewed and interacted with this aspect of the world, and perhaps change our relationship to extra-human environments in the present. For instance, Donna Beth Ellard has argued that in the Old English *Seafarer*, the ocean environment requires the eponymous narrator to engage in “a different kind of listening, or rather, a disruption to the seafarer’s listening habitus”²⁶—or indeed, a disruption to the seafarer’s own terrestrial bias. She continues, “[a]lone in a boat and surrounded by water, the seafarer’s body must struggle to entrain its oscillators to match and anticipate the rhythms of the ocean in order to balance on deck, keep watch throughout the night, avoid freezing, and abate hunger.”²⁷ This recalibrated rhythm is reminiscent of Melody Jue’s commentary on the oceanic interrupt to her terrestrial

²⁵This chapter, and dissertation more generally, focuses not so much on a terrestrial bias placed on the shoulders of past centuries of writers, or prescribed indirectly to the force of “Western culture,” but attempts to recognize how both premodern Europeans and modern academics perpetuate systems that reinforce perceived cultural or intellectual hegemony.

²⁶Donna Beth Ellard, “Communicating Between Species and Between Disciplines—Lessons from the Old English *Seafarer*,” *Exemplaria* 30, no. 4 (2018): 297.

²⁷*Ibid.*

systems while diving. In turn, this ocean rhythm alters the seafarer's auricular perception in ways that enable seabird-human communication and reorients notions of interspecies kinship. Ellard demonstrates how the poem's language and grammar participates complexly with the rhythm of the ocean in ways that enmesh human, non-human, and environment. EJ Christie has written about how St. Ambrose's *Hexameron* and the Old English *Exodus* engage the ocean as an early site for the development of 'signs,' wherein oceans are "signs that are both eternal and ephemeral, media that yield both to inscription and erasure, and which might thereby bridge an impossible divide between matter and transcendent sign, or paradoxically suggest that inscription and erasure amount to the same thing"²⁸—they thereby use the ocean to trace the transhistorical pervasiveness of the 'writ in water' metaphor that spans ancient and present time.

Early literary studies of the sea in later centuries of medieval literature are represented by works such as Gillian Rudd's close-reading oriented chapter "Seas and Coasts" in her 2008 *Greenery: Ecocritical Readings of Late Medieval English Literature*. Though Rudd "explore[s] the literary borderlands where human and non-human meet" in a variety of environs,²⁹ her title indirectly re-establishes the "terrestrial bias" that blue humanities seek to disrupt. By contrast, Sebastian I. Sobecki's 2008 *The Sea and Medieval English Literature* provides an expansive cultural survey of the sea and its appropriations by medieval English writers through Shakespeare's early modern drama

²⁸E.J. Christie, "Writing in Water," *postmedieval: a journal of medieval cultural studies* 3 (2012): 45.

²⁹Gillian Rudd, "Seas and coasts," in *Greenery: Ecocritical Readings of Late Medieval English Literature* (Manchester, UK: Manchester University Press, 2008), 4.

The Tempest, examining the ways in which the sea is engaged in service of mythic national identity-making.³⁰

Outside of literary scholarship pertaining to the premodern west, writers have long viewed and discussed the ocean more expansively and holistically than in Euro-centric subdisciplines. Epeli Hau'ofa's 1994 essay "Our Sea of Islands" provides a paradigmatic shift in perspective when approaching ocean studies in Oceania: "There is a world of difference between viewing the Pacific as 'islands in a far sea' and as 'a sea of islands.' The first emphasizes dry surfaces in a vast ocean far from the centers of power [...] The second is a more holistic perspective in which things are seen in the totality of their relationships."³¹ Hau'ofa's concept of 'a sea of islands' guides those who consider the ocean to recognize their own embedded position in this expansive environment, as well as the nuanced, emplaced, and interconnected positionalities of others. Writer, scholar, and activist Alexis Pauline Gumbs implicitly puts this concept to practice in *Undrowned: Black Feminist Lessons from Marine Mammals*, in which each of her book's movements seek "to move from identification, also known as that process through which

³⁰In addition to direct engagements with the ocean (as material or metaphor) such as these, there is also a proliferation of scholarship about premodern European cartography, travel, pilgrimage, imperialism, etc. As Jonathan Raban points out in *The Oxford Book of the Sea*, much English literature has been more concerned with "what is to be found across the waters than on the waters themselves" (Raban qtd in Rudd 133). It is important to note Gillian Rudd's observation that "Raban skips over the Middle Ages entirely [...] moving directly from *The Seafarer* to *The Faerie Queene*" ("Seas and coasts," 162). Though such scholarly endeavors are vital to understanding the multi-faceted nature of human engagement with the sea, the current study is not so much concerned with literature and scholarship that engages with the ocean on this level. Instead, it seeks to participate in what Elizabeth Deloughrey describes as "an important shift from a long-term concern with mobility across transoceanic surfaces to theorizing oceanic submersion" ("Submarine Futures of the Anthropocene," *Comparative Literature* 69, no. 1 [2017]: 32).

³¹Epeli Hau'ofa, "Our Sea of Islands," *The Contemporary Pacific* 6, no. 1 (1994): 152-3.

we say what is what, like which dolphin is that over there and what are its properties, to *identification*, that process through which we expand our empathy and the boundaries of who we are become more fluid, because we identify with the experience of someone different, maybe someone of a whole different so-called species.”³² Hau’ofa and Gumbs both demonstrate how seemingly minor rhetorical shifts can dramatically affect the way we conceptualize ocean environments and our relationship—both as critics and humans—to them. In this way, this chapter’s emphasis on the rhetorical aspects of both extraction and the fashioning literary environments is indebted to such thinkers.

In many ways, any given period’s scholarship reflects the biases perpetuated by the schools of thought that came before them. Blue humanities successfully upend the “terrestrial bias” in a field of environmental literary criticism, buoyed by overturning the (mis-)perception that previous centuries’ writers and thinkers considered their two feet to be more well-adapted to the land than the sea. Literary blue humanities have proven that this terrestrial-supremacy is not necessarily *true* so much as it is simply the most easily legible plane of human-environment engagement. As the non-comprehensive works discussed briefly addressed above shows, humans across time, space, and culture have always participated in nuanced ways—anthropocentric and disanthropocentric, religious and secular, cultural and political, productive and extractive—with the sea, regardless of when criticism recognizes this.

³²Alexis Pauline Gumbs, *Undrowned: Black Feminist Lessons from Marine Mammals* (Chico, CA: AK Press, 2020), 10.

Though the blue humanities have sought to address previous decades of literary environmental criticism's "terrestrial bias," they in turn tend toward an undeniable "surface bias," the tendency to linger on the ocean's surface. In a way, this makes sense: as Helen Rozwadowski has observed, for us two-legged terrestrials, "interest in the deep ocean began at the sea's edge":³³ only by starting at the edge can one brave the deep. But if blue humanities have used its criticism to upend unspoken assumptions made by "terrestrial" ecocriticism about premodern thought, what invisible assumptions in turn prop up this "surface bias"? In order to unseat the assumption that "dry land is the presumed norm"³⁴ and that the terrestrial human holds a spot at the top of the critical, cultural, and ideological hierarchy, the blue humanities move outward across that "boundary that we can only temporarily cross," a claim that is based on the assumption that "the most basic feature of the world ocean is that humans don't live there."³⁵ Sebastian Sobecki notes similar observations among ancient thought: the sea "can merely be traversed by man or, for purposes of fishing, visited. No lasting habitation in it is possible [...] It is the sea's elemental unsuitability as a direct habitat for human beings that led Plutarch (c. 46–120) to describe the Egyptians' perception of the sea as 'an element that is in no way related to us'."³⁶

³³Helen Rozwadowski, *Fathoming the Ocean: The Discovery and Exploration of the Deep Sea* (Cambridge, MA: Harvard University Press, 2005), 7.

³⁴Rozwadowski, *Vast Expanses*, 7.

³⁵Steve Mentz, "Shakespeare's Beach House, or The Green and the Blue in Macbeth," *Journal for Early Modern Cultural Studies* 13, no. 3 (2013): 85.

³⁶Sebastian I. Sobecki, *The Sea and Medieval English Literature* (London: D.S. Brewer, 2008), 5.

Such inferences and observations subtly lead us to remain on the surface; Patsy Callaghan reminds us that “we have to accept that any way of seeing is also a way of not seeing—that no one way of seeing can be comprehensive enough.”³⁷ This figuration of the sea as surface is often subtle, and likely unintended. Take, for example, Gillian Rudd’s description of the sea as “an immense, even boundless, expanse.”³⁸ Such rhetoric is often used in describing the ocean, and indeed is reminiscent of medieval figures such as Constance in her rudderless boat, traversing the ocean as Jesus did across the desert. Figuring something as an expanse conjures horizontal distance, a continuous plane of surface. The simplest problem with this is that the ocean is not a two-dimensional expanse, in spite of how it may appear from the coast on which we view it—or as Steve Mentz has written of Shakespearean drama, from “[t]he view from Shakespeare’s beach house,” which “shows the void next to which we perch our fragile bodies.”³⁹ This emphasis on horizontality knocks the “fragile bodies” of humans from their presumed place atop a vertical hierarchy.

This horizontal view calls to mind the tenets of flat ontology. Philosopher Levi Bryant writes that the “broader strategic import of the concept of flat ontology is to diminish the obsessive focus on the human [...] humans are not at the center of being, but

³⁷Patsy Callaghan, “Myth as a Site of Ecocritical inquiry: Disrupting Anthropocentrism,” *Interdisciplinary Studies in Literature and Environment* 22, no. 1 (2015): 83.

³⁸Rudd, “Seas and coasts,” 135.

³⁹Mentz, “Shakespeare’s Beach House,” 85.

are among beings.”⁴⁰ He further explains how this ‘flattening’ reorientation affects conceptions of subject-object relationships, in which humans often place themselves in the role of actant: “objects are not a pole opposing a subject, but exist in their own right, regardless of whether any other object or human relates to them. Humans, far from constituting a category called “subject” that is opposed to “object,” are themselves one type of object among many.”⁴¹ By ‘flattening’ traditional hierarchical subject-object orientations, this method attempts to “place all entities at all levels of scale and of all kinds on equal ontological footing.”⁴²

The most obvious problem with this approach is that neither environments, nor human-non-human relationships, nor human-human relationships exist in an ideal plane of flattened hierarchy; by imagining entities on “equal ontological footing,” it is too easy to elide the fact that some entities are historically (and currently) exploited, persecuted, and systemically abused. Rather than flattening entities via a surface bias, how might we unsettle hegemonic entities (and recognize marginalized ones) without erasing their important histories of inequality within human thought and action, both literary and lived? In the context of ocean studies and blue humanities, the visual implications of the “flat” approach too easily perpetuates the neglect of an already neglected vertical oceanic depth, which contains whole aquatic universes beyond what humans can see from their

⁴⁰Levi R. Bryant, “The Four Theses of Flat Ontology,” *The Democracy of Objects* (London: Open Humanities Press, 2011), 6.1.

⁴¹Bryant, “Four Theses,” 6.1.

⁴²Levi R. Bryant, “Two Types of Assemblages,” *Larval Subjects*. February 20, 2011. Accessed October 2022.

shores or literary beach houses. Ocean geologists Philip Steinberg and Kimberly Peters write that “[t]he world is not divided into fixed, hierarchical strata and scales; but neither is it ‘flat’.”⁴³ In attempting to acknowledge the first, theories like flat ontology collapse complicated material entities into two dimensions, whereas in reality, the ocean is a “three-dimensional and turbulent materiality.”⁴⁴ Premodern literary ocean studies, in attempting to elevate critical attention of the ocean to that of terrestrial ecosystems, and to more wholly recognize the ocean’s agency and autonomy, have perhaps at times unwittingly reproduced this tendency.

However, Steinberg and Peters also invoke the ocean as an especially apt medium to combat the ontological paradox that this presents. Within their field, geology, they observe a similar challenge to the one that the literary blue humanities face, namely the critical need “to adopt a perspective that recognizes volume, matter, and emergence.”⁴⁵ To this challenge, they write that “the ocean would seem to provide an ideal spatial foundation for theorisation since it is indisputably voluminous, stubbornly material, and unmistakably undergoing continual reformation.”⁴⁶ Rather than rigid depth that reproduces hierarchized strata and linear verticality, the adaptable voluminousness of

⁴³Philip Steinberg and Kimberly Peters, “Wet ontologies, fluid spaces: giving depth to volume through oceanic thinking,” *Environment and Planning: Society and Space* 33 (2015): 248.

⁴⁴Ibid., 247.

⁴⁵Ibid., 248. Anthony Adler similarly observes that, even given W. Jeffrey Bolster’s observation that “‘the past has never looked so watery,’ the ocean’s third, vertical, dimension, and human engagement with it, remains understudied” (*Neptune’s Laboratory: Fantasy, Fear, and Science at Sea* [Cambridge, MA: Harvard University Press, 2019], 6).

⁴⁶Steinberg and Peters, “Wet ontologies,” 248.

oceanic depth presents a model for thought that is neither defined by anthropocentric vertical strata, nor by flatness. This re-orientation of depth reading leads the framework of depth away from the symptomatic type of “deep reading” deconstructed by Stephen Best and Sharon Marcus, where information is hidden and must be plumbed for meaning. We might draw an analogue between symptomatic deep reading method and Beebe and Barton’s approach to the aphotic deep sea. The desire to uncover meaning inherent to symptomatic deep reading is clearly informed by colonial desires to “discover”—even extract—something about a text. Instead, depth studies as I engage with it ironically adheres more closely to the tenets of Best and Marcus’ “surface reading,” which holds “that a true openness to all the potentials made available by texts is also prerequisite to an attentiveness that does not reduce them to instrumental means to an end and is the best way to say anything accurate and true about them.”⁴⁷ In engaging primarily with the ocean’s “expanse” as an interpretive interface, the surface bias constructs ocean as proximate and useful to the human and ignores three-dimensional oceanic space. A depth studies approach to the premodern literary deep sea represents a new openness to material already contained in these texts.

Depth studies, while still emergent, has made some headway in premodern literary studies. Sobecki’s *The Sea and Medieval English Literature* devotes a chapter, “Between the Devil and the Deep Blue Sea,” to some deep-sea presences and figurations in medieval literature, especially that of Jonah and the whale. Liam Lewis adopts the

⁴⁷Stephan Best and Sharon Marcus, “Surface Reading: An Introduction,” *Representations* 108, no. 1 (2009): 16.

more expressly ecocritical concern of using analyses of medieval texts to more fully comprehend modern environmental crises and concerns. He analyzes the singing of the boat-bound monks in *The Voyage of St. Brendan* via the concept of noise-pollution in order to “highligh[t] the complex relationships between the monks, the deep-sea creatures, and the shallow-sea creatures”⁴⁸—relationships that ultimately “sugges[t] a form of anthropocentric utilitarianism that serves human purposes at the expense of nonhuman voices, a similar logic to the one that guides modern exploitation of marine environments.”⁴⁹ Outside of literary environmental criticism, environmental and maritime historian Helen Rozwadowski has provided some of the most detailed analyses of the pre-nineteenth century deep-sea, most notably in her 2005 book, *Fathoming the Ocean: The Discovery and Exploration of the Deep Sea*. Ecocritic and blue humanities scholar Steve Mentz had also plumbed the ocean depths in his 2009 book *At the Bottom of Shakespeare’s Ocean*, where throughout the book’s chapters he “explores a different way that human bodies interact with the ocean: fathoming, keeping watch, swimming, beachcombing, fishing, and drowning,”⁵⁰ in order to metaphorically ‘get to the bottom’ of Shakespeare’s use of the seas in his dramas. Mentz ironically lampshades this conflation of words in his discussion of the ‘bottom’ of Shakespeare’s oceans when he writes, “[i]t’s to the bottom of Shakespeare’s ocean that this book takes you, except for one thing: we

⁴⁸Liam Lewis, “Noise on the Ocean Before ‘Pollution’: The Voyage of Saint Brendan,” *Interdisciplinary Studies in Literature and Environment* 29, no. 3 (2021): 6.

⁴⁹Ibid., 11.

⁵⁰Mentz, *Shakespeare’s Ocean*, x.

never get to the bottom. The deep sea's floor, as unreachable to early modern Europeans as the moon, is a place these plays never reach."⁵¹

One of the most influential depth studies in recent years arrives to the field from outside of premodern studies. Melody Jue's *Wild Blue Media: Thinking Through Seawater* provides a thorough reorientation of criticism's approach to the sea, its depths, and how critics discuss and conceptualize them at the most basic level. In her own words, "where *Wild Blue Media* differs from existing studies of oceanic literature is through its focus on interpretation within the depths rather than at the surface, which is most common in studies of seafaring literature."⁵² Jue uses her own experience as a diver as a point from which to explain her capacious re-conceptualization of human orientations towards the sea, as described in this chapter's introduction. To reiterate, she writes,

The practice of learning to dive has directed my attention to how our instinctive postures, embodied habits, and muscle memory are all adapted to the gravitational conditions of walking on land and breathing air (amid a range of abilities). Indeed, these terrestrial habits of movement and orientation are so ingrained as to be virtually invisible.⁵³

It is, perhaps, this very invisibility that allows for the terrestrial or surface bias of criticism. By considering the depths, we also question what has been hitherto invisible. As the various fields under the umbrella of ocean studies begin to do this, Jue points out the challenges they have faced in developing "a critical vocabulary specific to the ocean,

⁵¹Ibid., xiii.

⁵²Jue, *Wild Blue Media*, 17.

⁵³Ibid., 2.

in spite of a tendency toward terrestrial mimesis.”⁵⁴ This chapter presents my contribution to this ongoing challenge, in the form of my conceptualization and analyses of what I call the aphotic imaginary—the imaginative literary conceptualization of the deep sea.⁵⁵

The aphotic zone is the deep-sea zone where less than 1% of sunlight penetrates. There is insufficient light for photosynthesis, and yet strange and unique life flourishes there: creatures that bioluminesce, withstand great pressures, or develop their own benthic communities. Even mammals such as elephant seals and sperm whales will venture into the aphotic zone, should they want an unusual looking snack. Marine biologist Bruce Robison writes that, “[f]or most people these animals are out of sight and out of mind. They are also out of reach to all but a few scientists equipped with the latest technology.”⁵⁶ However, as Mentz has observed, “literary representations [...] reach into spaces human bodies cannot.”⁵⁷ For example, in the Middle English alliterative poem *Patience*, at what is arguably the central and most dramatic turn in the poem, the negative exemplum’s morally straying protagonist, Jonah, can be found the belly of a great sea-beast, plunging “Þur3 þe depe & in derk walterez” (263; “through the deep and dark

⁵⁴Ibid., 17.

⁵⁵Jue also notes that “[m]any of the neologisms developed to address the ocean environment—like hydrography, or seascape—are modified versions of terms that we use to talk about the land” (*Wild Blue Media*, 17). The term ‘aphotic’ is drawn from the oceanographic “aphotic zone,” a measurable ocean zone. The aphotic zone is thus named on account of the *lack* of something that the surface has: sunlight. As such, my terminology falls into this trap that Jue notes; since no better word exists to address this environment, to my knowledge, I deploy this terminology with full awareness of its shortcomings.

⁵⁶Bruce Robison, “Conservation of deep pelagic diversity,” *Conservation Biology* 23, no. 4 (2009): 854.

⁵⁷Mentz, *Shakespeare’s Ocean*, xiv.

waters”). In places such as these, premodern literature provides us with glimpses of their aphotic imaginaries: their conceptualizations of the deep-sea, imagined necessarily due to the impossibility of physical access.

Even now the deep-sea far exceeds our power to access it, in many cases even to view it. NASA Oceanographer Gene Feldman points out that today’s scientists have far more detailed maps of the surface of Mars than they do of the ocean floors.⁵⁸ But with this uncertainty, born from impossibility of access, comes limitless *potential*. This potential has been invoked by authors, philosophers, and theorists across time and genre. How do premodern writers imagine the aphotic deep sea across time and genre, and what do these imaginings reveal about the cultural narratives and ideologies perpetuated by these literatures and their subsequent reception and scholarly legacies? How do we, as modern critics, square the oftentimes symbolic nature of narratives about the deep sea with our awareness of the space as a lived environment, whose material circumstances the global network of capitalism and extraction affect, usually negatively?

Often, the glimpses of aphotic imaginaries that premodern literature give to us are sloughed away by subsequent criticism: the “depe” and “derk walterez” Jonah enters after being cast overboard in the negative exemplum *Patience* are merely a peripheral environment for the poem’s ‘true’ concern: Jonah’s trial within the belly of the whale. In this chapter, I attempt to locate some of these glimpses throughout two canonical pieces of medieval British literature. To my knowledge, there is no devoted study or survey of the deep sea throughout premodern literary texts; as such, this chapter does not—indeed,

⁵⁸Dan Stillman, “Oceans: The Great Unknown,” *NASA Education*. October 08, 2009. Accessed Oct 2022.

cannot—attempt to survey them entirely nor to track linear, related, or cumulative trajectories of thought concerning the deep sea. Margaret Cohen describes how, to explain their experiences of the deep-sea, “early dive naturalists used imaginative bricolage.”⁵⁹ Given this, this chapter seeks to excavate the potential material for such bricolages; it devotes itself to explicating some of these glimpses, which often occur across only a fleeting handful of lines. Depending on the contexts and narratives in which these glimpses occur, we find several models of engaging with the deep sea; these models in turn have varying implications and repercussions, and the argument I present here is only the first step in such excavations.

I began this chapter with an anecdote about William Beebe: when twentieth-century naturalists *did* finally reach the aphotic deep-sea zone, what they found was so unlike anything they had encountered before that the only satisfactory way to relate what they had seen was to fall back onto previous centuries’ poetic, mythic, and literary depictions of the deep ocean. Premodern literature engaged symbolically with a real, material environment that they could not reach; twentieth-century ocean explorers reached this material environment but figured it symbolically. Both displacements are done in service to certain cultural paradigms and ideologies, and thus their repercussions carry through to the crisis of environmental collapse and racism we face today. By tending to the premodern aphotic imaginary, what lessons can these texts and their glimpses teach us?

⁵⁹Cohen, “Denotations in Alien Environments,” 110.

In this chapter's next section, I will discuss the aphotic deep-sea spaces of both the Julian of Norwich's *Shewings* and the anonymous *Pearl-Poet's Patience*. Both late fourteenth century works—a mystic vision and negative exemplum respectively—visualize and engage with deep-sea spaces in ways that are creatively integrated into the religiosity of their respective genres and demonstrate a unique aphotic imaginary and environmental consciousness. In the section that follows, I will discuss how the potential generated by these imaginaries is ultimately figured in models of rhetorical extraction: Julian depicts the sea as a privileged auxiliary space to spiritual transformation and realization, while *Patience* depicts the sea as a site of a spiritual transformation that has material consequences outside the sea-space. This prefigures, in some ways, the continued tension between things that seem like scientific or technological innovation, and the varied lives and entities whose existences are figured as expendable for the sake of such advancements—topics I expand upon in my third and fourth chapters. In this way, Beebe's description of the aphotic deep sea indirectly follows the models laid forth by *Shewings* and *Patience*, which in some ways seek to expand environmental engagement and consideration while simultaneously undermining this potential via their own rhetoric. Despite these moments of environmental consciousnesses, both medieval texts ultimately engage the ocean via extractive rhetoric that seek to metaphorize and “make useful” oceanic materiality. Contemporary readers are thus forced to reckon with how imaginaries that seem to engage environments in creative and radical ways can simultaneously enact critically, socially, or environmentally exploitative paradigms like extractive logics that ultimately operate counter to equity and environmental interests.

Transformative Waters: Visions of Aphotic Space

As previously discussed, the many works of medieval literature that engage with the sea are content to stay on its surface. Some texts, like the Voyage of St. Brendan, afford glimpses into the deeper parts of the sea by looking down from the surface: peering into the water, St. Brendan sees the creatures who live in the deep. While fewer texts engage the deep sea from a submerged perspective, several of the ones that do are notably widely available and widely read by twenty-first century critics. However, within the flourishing criticism around these popular narratives, there is relatively little attention paid to the pivotal role these deep-sea environments play in these text's narratives and thematics. In this section, I will discuss the role that deep-sea imaginaries play in Julian of Norwich's *Shewings* and the anonymous Pearl-Poet's *Patience*, and how these engagements demonstrate the innovative environmental consciousness of these texts' respective creators.

Julian of Norwich was a late fourteenth century English anchoress about whom little is known; what *is* known arrives to us in the form of two first-person accounts (the latter an expansion of the former after two decades of reflection) of religious revelation that Julian experienced at the age of thirty. Bed-ridden by a near fatal illness, the anchoress stares at a crucifix affixed to her wall and begins to experience “a medley of visionary thoughts and images.”⁶⁰ Julian's interpretations and meditations on these

⁶⁰Nicholas Watson and Jacqueline Jenkins, eds, *The Writings of Julian of Norwich* (University Park, PA: Pennsylvania State University Press, 2006), 2.

visions ultimately contribute to a larger narrative “about the being and nature of God, humankind, and creation.”⁶¹ Nicholas Watson and Jacqueline Jenkins note that Julian’s *Shewings* represent “a speculative vernacular theology, not modeled on earlier texts but structured as a prolonged investigation into the divine, whose prophetic goal is to birth a new understanding of human living in the world and of the nature of God in his interactions with the world.”⁶²

With goals that revolve primarily around understanding, Julian’s *Shewings* are largely concerned with matters of vision and perception, especially in regard to how these affect Christian religious experience, as well as worldly and divine understanding. Julian recounts the visions she experiences from within the physical body that she calls her “deadly flesh” (2.1-2). While the short text, composed more immediately after her illness, contains more details about the illness itself, the long text written after two decades of reflection is nearly twice as long and contains much more of what Augustine would have called “intellectual vision,” Julian’s spiritual understanding of her experiences. Understanding the myriad potential natures of Julian’s vision and her two accounts has generated considerable attention: her vision is the avenue to her understanding of the world, which in turn depicts a detailed account of humanity’s place in the world, the compassionate nature of the Christian God, how his followers can best come to know him.

⁶¹Ibid.

⁶²Ibid. All quotations will be from the long text provided in *The Writings of Julian of Norwich*, ed. Nicholas Watson and Jacqueline Jenkins.

Julian breaks down her visionary experiences into “bodely” and “gostly” sights. At the outset of her *Shewings*, she expresses her desire for “a bodely sight, wherin I might have more knowinge of the bodily paines of our saviour” (2.10-11). Julian then recounts the failings of several key “bodely,” or physical senses, writing about how her “sight began to faile, and it was alle darke aboute me in the chamber as if it had ben night” (3.24-25), but for a narrow “comon light” (3.25-26) wherein she could see the crucifix brought to her by the priest called to administer her last rites. It is in this state that Julian begins to recount the “sixteen shewings” (1.1-2), revealed to her via a mix of bodily and ghostly sight. It is perhaps this juxtaposition—the religiously symbolic failure of sight and simultaneous proliferation of sight—that engenders James McIlwain’s observations about Julian scholarship’s persistent “speculation about the psychopathological states which might have engendered” her visions:⁶³ that is, the attention devoted to deconstructing the so-called authenticity of her divine revelations and how to square the deterioration of her eyesight and the onset of her “sicknes” (2.31) with her accounts. Carmel Bendon Davis likewise addresses the “polarized view of mystics and their texts as being either authentic in the experiences that they represent or as socially constructed phenomena with little evidence of spiritual value at their core.”⁶⁴ There is thus a preoccupation with what Julian sees, how she sees it, and if she really sees it at all. This preoccupation with authenticity diminishes Julian’s goal of transforming “individual

⁶³James T. McIlwain, “The ‘Bodelye syeknes’ of Julian of Norwich,” *Journal of Medieval History* 10 (1984): 167.

⁶⁴Carmel Bendon Davis, *Mysticism and Space: Space and Spatiality in the Works of Richard Rolle, the Cloud of Unknowing Author, and Julian of Norwich* (Washington D.C.: Catholic University of America Press, 2008), 3.

suffering embodiment into an exemplary written form.”⁶⁵ Bodily and spiritual experience are inextricably linked, and Julian’s position as anchorite uniquely situates her to traverse this relationship. Ultimately, I argue that thinking about Julian’s vision within the context of the deep sea allows readers to gain additional perspective on the narrative techniques she uses to conceptualize vision, as well as how intertwined visual and religious experience are related to environmental thought.

My consideration of the relationship between Julian’s anchoritic position, her rubric of visual and religious thought, and the deep-sea environment itself, is inflected by Augustinian tripartite vision, which is commonly considered alongside Julian’s *Showings*. Augustine’s exegetical commentary on the Book of Genesis breaks down vision into *visio corporalis*, “knowledge by means of the external senses,” *visio spiritualis*, “knowledge by means of the imagination,” and *visio intellectualis*, “the direct cognition of realities such as God [...] which have neither corporeal substance nor corporeal shape.”⁶⁶ How these three types of vision map onto Julian’s bodily and ghostly sights is not a settled matter. Even bodily and corporeal sight, which might seem like the cleanest match, are far from synonymous. Catherine Willits writes that “Julian intentionally avoids employing a consistent definition of bodily sight in *Showings*, electing instead to maintain a distinct ambiguity and multiplicity surrounding the term throughout the

⁶⁵Amy Appleford, “The Sea Ground and the London Street: The Ascetic Self in Julian of Norwich and Thomas Hoccleve,” *The Chaucer Review* 51, no. 1 (2016): 54.

⁶⁶Francis X. Newman, “St. Augustine’s Three Visions and the Structure of the *Commedia*,” *MLN* 82, no. 1 (1967): 59.

text.”⁶⁷ My goal in highlighting these two models of visions is thus not to draw reckless parallels between them, but to use their similar factors and their ambiguity to think through how the deep-sea environment in Julian’s second showing contributes both to visionary processes and the place of environmental thought.

What can be said of both Augustine and Julian’s models of vision is that, in some capacity, both deal with both physical sensory input and a more nebulous, intangible visionary input. Augustine’s intellectual vision necessitates “prophetic understanding” of a visionary experience⁶⁸ that is not inherent to experiencing vision but is granted by the Holy Spirit either as part of the visionary process or after retrospective deliberation. Intellectual vision is, in a sense, a privileged space. Like the deep sea itself, it is defined by the impossibility of unmediated access to it. As an anchorite, Julian exists in a privileged position where she can gain access to divine information, and thus to understandings of God, in a way that others cannot. Julian, both in her sickness and in her retrospective consideration of it, glimpses a space that exists beyond others’ capacity to see it. Amy Appleford, Carmel Bendon Davis, and others have discussed how Julian’s *Showings* perform this work via descriptive imagery: visceral scenes of a dark bed, cascading and vibrant blood and tears, a dried and decaying body, or a glimpse of the deep sea.

⁶⁷Catherine Willits, “The Obfuscation of Bodily Sight in the Showings of Julian of Norwich,” *Journal of Literary & Cultural Disability Studies* 8, no. 1 (2014): 85.

⁶⁸Jesse Keskiäho, “The Epistemology of Visions: The Reception of Augustine on the Three Visiones,” *Dreams and Visions in the Early Middle Ages* (Cambridge: Cambridge University Press, 2015), 146.

Hetta Elizabeth Howes has written about how water, as a medium, has characteristics that make it a flexible metaphor: it might serve as “a medium between the human and divine” or “an agent of transformation.”⁶⁹ Julian’s privileged position of spiritual access is figured as a position of environmental access. The deep sea becomes a site that Julian *can* experience within the context of her divine revelations. In her meditation on her first showings, Julian describes the nature of the various visions she has and will receive: “But this marvelous homelyhede may no man know in this life, but if he have it by specialle shewing of oure lorde” (7.45). The intimate knowing she describes—in the second showing, which I will discuss, knowing both the distant and inhospitable deep-sea space and the understanding of the divine it engenders—is characterized by impossibility of access *unless* by divine intervention. In the second showing, the water of the deep sea becomes a medium between Julian and the divine, an agent of intellectual vision, and metaphor for the nature of her visionary experience.

Though Julian makes this environment spiritually and metaphorically useful, which I will discuss further in the next section, the way she approaches its function demonstrates a certain level of environmental understanding. On the one hand, she uses the extremity of this environment to emphasize her rhetorical point: that faith can keep one safe even in the most inhospitable climes. If, in these environments, “God is with a man continually—he shoulde be safe in soule and body, and take no harme” (10.19-20). Despite this claim, Julian betrays the environmental understanding that she would not

⁶⁹Hetta Elizabeth Howes, *Transformative Waters in Late-medieval Literature: From Aelred of Rievaulx to the Book of Margery Kempe* (Suffolk: D.S. Brewer, 2021), 3.

truly, physically be able to survive this environment. Julian does not claim to have visited the deep sea in either bodily or ghostly sight. Rather, her “understanding was led downe into the sea groundes” (10.16). Her subsequent meditation on the space is filled with hypothetical language. She qualifies her assessment by saying it would apply “if a man or woman wher there, under the brode water” (10.18-19). She distances her own experience from the physical deep sea and hedgingly employs the figure of a hypothetical man or woman who was hypothetically under the broad waters. While this “imaginative voyage to an environment in which humans normally cannot survive” serves to emphasize her point that “sight” of God can allow environmental access that is far beyond “the natural capacity of the human body,”⁷⁰ it also emphasizes the inhospitality of this environment to the human body altogether by absenting Julian—supposedly the reader’s “exsample” (8.28) of a devout women who has privileged modes of accesses the reader does not⁷¹—from the physical aspects of this environment entirely.

Julian’s environmental consciousness extends into her brief description of the glimpse of deep sea she receives in her “understanding” (10.16). Her two-line description of aphotic topography describes “hilles and dales grene, seming as it were mosse begrowen, with wrake and gravel” (10.16-17). Julian’s environmental vision is characterized by two main images. The first are green hills and dales grown over with a moss-like substance. Perhaps understandably betraying her own “terrestrial bias,” Julian

⁷⁰Appleford, “The Sea Ground and the London Street,” 57.

⁷¹This conflation of religious and environmental access, which translates into a readerly example, is a similarity Julien has with Dante, as I discussed in the previous chapter.

portrays the undersea topography as virtually identical to that of the terrestrial world. In doing so she demonstrates what Melody Jue calls the “tendency toward terrestrial mimesis”⁷² that both authors and critics display when discussing the deep sea. Despite Julian’s terrestrial mimesis, her seafloor is far from impossible. While the algae that would make underwater topography seem “as it were moose begrown” typically thrive between 30-90 meters below the surface, they can photosynthesize with levels of light far below what humans need to perceive anything but darkness. Certain algae have been found almost 300 meters below the surface in the deep ocean in waters where only .0005% of sunlight penetrates.⁷³

In depicting an underwater world that resembles terrestrial climes, Julian avoids the trap of crafting an estrangement between human and ocean environment that consequently buys into the troubling, pervasive model through subsequent centuries of western thought that engages with the deep-sea as an ‘alien’ space, in accounts such as Beebe’s. In fact, the second main image that pervades Julian’s sea world is that of an environment negatively impacted by human activity. Julian’s sea floor is littered with “wreke” and “gravel.” While *gravel* denotes sediment such as sand that has environmental origins,⁷⁴ *wreke* denotes man-made debris and detritus. Julian cannot imagine a seafloor that is not littered with bits of sunken ships that mar the otherwise

⁷²Jue, *Wild Blue Media*, 17.

⁷³Ole Mouritsen, "The Science of Seaweeds." *American Scientist* 101, no. 6 (2013).

⁷⁴See MED: “*gravel, n. 1.*” *Middle English Compendium*, <https://quod.lib.umich.edu/m/middle-english-dictionary/dictionary/MED19281/track?counter=1&search_id=23374300>

green landscape. The word “wreke” is often used in figurative and symbolic contexts,⁷⁵ or else to describe the process of a sinking ship “going to wrak.”⁷⁶ While Chaucer’s *Man of Law’s Tale* uses the word to describe a literal wreckage,⁷⁷ his wreke sits on the shore. Julian’s wreke sits deep below the surface, in a locale that humans cannot physically access but that is affected by human actions all the same. Julian shows how human-environment encounters and exploitations can affect environments in ways that don’t acutely affect the environments humans occupy, but ripple outward into environmental spaces they cannot immediately see.

Julian’s environmental consciousness demonstrates a series of reasonable extrapolations. Shipwrecks were such a prevailing phenomenon through the fourteenth and fifteenth centuries that many countries, including England, passed various laws and Rights of Wreck to determine ownership of any debris that happened to float ashore.⁷⁸ Julian imagines what doesn’t float back to shore. To Julian, the ocean is not a horizontal surface to traverse for economic or nationalistic reasons. It is depth: what humans send

⁷⁵The 1500 *Dialogue of the Friend and the Fellow* reads, for instance, “A schyp oftentimes ys lyke to go to wrakke whyche afterward fortunably happeth to arryve at a goode porte”. And later, “Who may trust the welefare of a schyp whyche ys toward a wrakke and the ores be broken or the mast kyt or the sayle ouyral rent or the gouernayle vnproporcyoned?”

⁷⁶See for instance Lydgate’s *Troy Book*, “After her schippes wern y-go to wreke” (2.4487) and later, “Two hundrid of her shippes brak / Amonge rokkes and fully go to wrak” (5.940).

⁷⁷“The constable of the castel down is fare / To seen this wrak” (B.513).

⁷⁸See for instance: Rose Melikan, “Shippers, salvors, and sovereigns: Competing interests in the medieval law of Shipwreck,” *The Journal of Legal History* 11, no. 2 (1990): 163-182; Tom Johnson, “Medieval Law and Materiality: Shipwrecks, Finders, and Property on the Suffolk Coast, ca. 1380–1410,” *American Historical Review* 120, no. 2, (2015): 407-432.

out across the surface, if overcome by water, must sink down into the environments below.

In imagining this, Julian approaches the sea differently than her contemporaries like Chaucer, who sends Constance out across the expansive ocean surface, or the ever-popular St. Brendan, who peers into the sea from his boat. Julian's sea is expanse and depth: volume. Her sea-space "recognizes volume, matter, and emergence"⁷⁹ in a way that defies the "surface bias" of other medieval literatures and criticisms. The anonymous Pearl-Poet's *Patience* similarly engages the deep-sea environment as a central figure in its narrative. In contrast to Julian's physical absence within the sea-space, Jonah's physical experience is central to the sea-change he undergoes in the depths. Like Julian, Jonah's experience is characterized partially by religious experience and partially by ecological imagination.

Patience functions as a Biblical exemplum that largely follows from the well-known Jonah story retold in the Book of Jonah and elsewhere. As such, it is sometimes considered, perhaps unfairly, to be one of the poet's less provocative works, when compared to the likes of *Pearl* or *Sir Gawain and the Green Knight*. At the poem's beginning, Jonah receives a divine message to preach at Nineveh. Panicking at the idea of the violence he believes he will face there, Jonah decides instead to flee by sea to Tarshish, where he is convinced he'll be beyond God's gaze: "Watz neuer so joyful a Jue as Jonas watz þenne," the poet writes, "þat þe daunger of Drȝtyn so derfly ascaped; / He

⁷⁹Steinberg and Peters, "Wet ontologies," 248.

wende wel þat Wy3 þat al þe world planted / Hade no maȝt in þat mere no man for the greue” (109-112; “Of all Jews the most joyous was Jonas himself, / Who’d eluded the law of the Lord on that day. / He believed that the Lord, Who all lands had ordained, / Had no strength on that sea to bring suffering, woe!”). Jonah instead interprets the sea along the lines of the “void and empty abyss” of Genesis 1:2, as what David Toshio Tsumura has described as the “‘watery chaos’ that existed before creation.”⁸⁰ Though there is a vast array of interpretations about the relationship between the sea and Creation in Genesis, in the world of *Patience*, this is a misreading. Jonah’s ship is overcome, and he is tossed overboard by his shipmates to quell God’s anger. He lands in a whale’s dark mouth, and is dragged down into the ocean, plunging “Þur3 þe depe & in derk walterez” (263; “through the deep, and in dark waters”).

When this deep-sea episode is addressed by *Patience* scholarship, it is usually centered around the character of the whale, who—like Julian’s sea floor—is objectified and treated symbolically.⁸¹ One critical approach to the whale is to cast it as Jonah’s foil, such as when Ordelle Hill writes, “Jonah’s sin of disobedience is emphasized in contrast between him and the obedient whale.”⁸² One of the most popular interpretations is that

⁸⁰David Toshio Tsumura, *Creation and Destruction: A Reappraisal of the Chaokampf Theory in the Old Testament* (University Park, PA: Pennsylvania State University Press, 2005), 14.

⁸¹Paralleling Jonah’s internment in the ship’s bilge in which he stows away, and the whale’s belly in which he spends three days, John M. Bowers writes that “the whale’s belly replaces the ship’s bilge as an image of the spiritual condition into which a sad, sluggish soul descends” (“Patience and the Ideal of the Mixed Life,” *Texas Studies in Literature and Language* 28, no. 1 [1986]: 10). In this figuration, the whale’s stomach serves as a transformative space where Jonah “abides for three days, reflecting in the abyss on the Lord’s might, mercy, and measure” (Kent A. Hieatt, “Symbolic and Narrative Patterns in Pearl, Cleanness, Patience, and Gawain,” *English Studies in Canada* 2, no. 2 [1976]: 126).

⁸²Ordelle Hill, “The Audience of ‘Patience’,” *Modern Philology* 66, no. 2 (1968): 107.

Jonah's time within the whale is a prefiguration of Christ's three-day descent to Hell.⁸³ Another similar line of criticism shifts the interpretive emphasis slightly so that Jonah's "entombment" and regurgitation by the whale anticipates Jesus's Passion and Resurrection.⁸⁴ Sandra Pierson Prior marks Jonah's time in the whale's stomach as "exegetically distinctive, since it was one of the few Old Testament signs signalled out by Jesus for typological and allegorical import,"⁸⁵ while Thomas D. Hill adds that due to this, these types of allegorical and symbolic interpretations were "universally accepted by patristic and medieval exegetes,"⁸⁶ and I would add, subsequently not largely strayed from by modern criticism.

When the environment outside the whale is acknowledged, it is critically stylized as an divinely-imbued object that works as a God's proxy to redirect Jonah to Nineveh and reconcile him with his divine calling to preach to the people there.⁸⁷ Many critical

⁸³See 20-21n40 in Bowers for in-depth citations on this critical line.

⁸⁴Thomas D. Hill writes that "this typological parallel was part of the preaching of Jesus himself, it was, of course, universally accepted by patristic and medieval exegetes" (Thomas Hill, "God's 'Inquits' and Exegetical Speech Theory in the Middle English *Patience*," *Journal of English and Germanic Philology* 116, no. 2 [2017]: 183). This association lends itself to the popular figuration of the whale's stomach as a type of hell.

⁸⁵Sandra Pierson Prior, *The Fayre Formez of the Pearl Poet* (East Lansing: Michigan University Press, 1996), 85.

"Generatio mala et adultera signum quaerit. Et signum non dabitur ei nisi signum Ionae prophetae. Sicut enim fuit Ionas in ventre ceti tribus diebus et tribus Noctibus, Sic erit Filius hominis in corde terrae tribus diebus et / tribus noctibus" ("For as Jonas was in the whale's belly three days and three nights: so shall the Son of man be in the heart of the earth three days and three nights"; Matthew 12:39-40).

⁸⁶Hill, "God's 'Inquits'," 183.

⁸⁷For instance, Cecelia A. Hatt writes that "the wind and waves, plants and animals are all manifestations of God" (*God and the Gawain-Poet: Theology and Genre in Pearl, Cleanness Patience and Sir Gawain and the Green Knight* [Suffolk: D.S. Brewer, 2015], 144). Environmental actants are relevant insofar as they provide religious value.

interpretations discuss the sea only as part of their plot summaries, or else insofar as to invoke the idea that Jonah fled there due to his belief that it was beyond God's reach and wrath.⁸⁸ Kathleen Palti provides an interesting, if brief observation of the sea-space when she examines *Patience* alongside its Biblical referent. In the latter, Jonah is cast into the sea itself, where he floats long enough for the storm to subside and for God to summon the whale, while in the former, he falls directly into the whale's mouth and never touches the sea water. To Palti, this "indicate[s] just how disturbing the ocean depths are, to the extent that direct contact with the water is taboo."⁸⁹ However, she leaves this discussion and its implications there.

As the sea-space in *Patience* is the environment in which Jonah's drastic moral change occurs, it is worth examining the space itself further. What exactly is "disturbing" about the sea, to use Palti's language? What makes this site uniquely apt for the narrative action that occurs amid it? What *is* the power and the meaning of the sea, both including and beyond its role in what we might call Jonah's sea-change? The first step in approaching these questions is to reorient how we talk about *Patience's* sea in general. As I described above, most extant *Patience* scholarship casts the sea as an auxiliary medium that contains the whale, which it figures as a site of infernal trial. In this

⁸⁸Sandra Pierson Prior writes compellingly on this point in "'Patience'-Beyond Apocalypse," *Modern Philology* 83, no. 4 (1986): 337-348. This study also invokes some of the previously listed interpretations of the whale's stomach. Notably, these studies do not discuss Biblical or elemental details of the sea-space that offer up explanations for Jonah's interpretation of the sea's potential in this regard. Neither do they tend to discuss what aspects of the sea's materiality and the epistemological milieu surrounding it make it particularly believable that this space is somehow outside of divine influence; rather, they dismiss Jonah's actions as naive, hasty, or impatient.

⁸⁹Kathleen Palti, "The Bound Earth in *Patience* and Other Middle English Poetry," *Interdisciplinary Studies in Literature and Environment* 20, no. 1 (2013): 40.

figuration, every entity in the sea-space is an object under divine control that serves one purpose: to physically and spiritually redirect a repentant Jonah to his calling to preach at Nineveh. This hierarchization—which is a paradigm set down by the poem itself, as I will explain in greater detail in the next section—reproduces the anthropocentric belief that humans sit higher on the *scala naturae* than any sentient or non-sentient, organic or inorganic terrestrial entity, and that all such entities are subservient to human whim and wish.

In a utilitarian, anthropocentric model of the world, animals and environment are almost always *object*, operated upon, serving an end. In this model, Jonah's whale, for instance, exists only insofar as it enters his narrative and relates to Jonah, the subject. After he spits Jonah onto land (338), he is promptly forgotten by Jonah, and not even his descent back into the water is addressed. When their relational proximity ends, the whale ceases to exist. However, realistically we know this is not true of any sea creature: it would continue to exist, returning to the deep-sea and its own life once more. And what of the deep-sea itself, the material environment in which this whale lives?

One might be tempted to dismiss considerations of the material deep-sea water on the grounds that Jonah spends all of his time within the whale's belly. While this may be true, the same cannot be said of the poem's narrator, nor of us, its readers. Julian's lack of physicality extends to the sea itself: her vision is a snapshot of the deep sea that preserves the terrestrial temperature and pressure-scapes of her dark room and absents oceanic pressures and currents, like Beebe's bathysphere. *Patience* accounts for these deep-sea characteristics. Though Jonah is trapped inside the whale, the reader travels outside,

watching as the whale “swengez and swayues to þe se boþem / Bi mony rokkez ful roze and rydelande strondes” (254-5; “[the whale] hastens and whirls to the sea bottom / By many jagged rocks and surging sand banks”).⁹⁰ The whale “swengez and swayues”: the latter adjective denotes a whirling grace while the former indicates improbably quick movement for a creature of this size. Under the sea, gravity is subservient to the rules of displacement, and a creature weighing dozens of metric tons has powers of movement that even much smaller land mammals don’t. Like the whale, the underwater landscape moves in lively ways: rocks jut upward, stratified and rough, and “rydelande strondes”—eddies of sand—are carried by an underwater weather surge. These rough and lively topographies describe a different type of deep-sea environment than Julian’s “hilles and dales” (10.16). This verb that denotes their liveliness, “rydelande,” is employed only by the *Pearl*-Poet, here and in *Cleanness*: “þe rayn rueled adoun, ridlande þikke, Of felle flaunkes of fyr and flakes of soufre” (953).⁹¹ We know that the varying pressures of the deep sea cause proliferations of underground weather on the ocean floor: surges move vertically through pressure-scapes, and eddies and currents invisibly sweep the deep-sea sands into streams, like the ones imagined by the anonymous poet.

When engaging with their deep-sea spaces, both texts necessarily involve a measure of ecological innovation and intuitive understandings of physics. They develop creative strategies for dealing with the aspects of the deep sea that make it most

⁹⁰I have provided my own translation for these lines, as the Finch understandably forgoes some textual literalness for aesthetic and poetic continuity.

⁹¹See MED “[ridelen](#) v.(3).” *Middle English Compendium*, <https://quod.lib.umich.edu/m/middle-english-dictionary/dictionary/MED37468/track?counter=1&search_id=20492936>

inhospitable to life: namely in matters of oxygen, pressure, and sight. The oxygen problem is addressed in *Patience* via the bubble of the whale's belly that holds the air—albeit foul and reeking—that Jonah needs to breathe. The poem preserves the mediation of the whale's belly when the laws of physics demand but obscure its mediation when its exemplary purpose demands that Jonah feel the pressure of the sea in order to decide to proceed to Nineveh—a moment I discuss further in the next section. The air in the belly frees Jonah from the water's pressure, visual occlusion, and lack of air.

The problem of breathing and underwater pressure is solved in the *Shewings* due to the absence of Julian's physical body, while the problem of underwater sight is potentially addressed more complexly. Anyone who has opened their eyes underwater knows that a human eye requires a mediating agent to see below the surface with clarity. Julian's observations of the hills, dales, wreck, and gravel are sharp, crisp, and realized. Chelsea Silva discusses "intervening material obstructions"⁹² in Julian's gaze in terms of membranous occlusions on the eye, noting that while they may not have had academic knowledge of such impairments, "nonmedical writers certainly understood the ways that these material obstructions could be used in literary and theological context."⁹³ In regards to the relevance of this for underwater settings, nictitating membranes are "a transparent or translucent third eyelid present in some animals that can be drawn across the eye for protection and to moisten it while maintaining visibility [...] found in fish, amphibians,

⁹²Chelsea Silva, "Bed-Written: Middle English Medicine and the Ailing Author," PhD diss., (University of California, 2020), 4.

⁹³Ibid., 15.

reptiles, birds, and mammals”⁹⁴—though in land mammals such as cats and dogs, this third eyelid is mostly vestigial. The function of this membrane varies. In birds of prey, it protects their eyes from high-speed air dives, while in reptiles and water mammals, it slides over the eye to protect it and improve visibility underwater. In primates, including humans, this membrane “has dwindled away to a small vestigial structure.”⁹⁵ That said, there are several recorded cases of humans born with full nictitating membranes. While it is impossible to draw definitive conclusions, it is possible that Julian was thinking through the ways human sight might interact with sea water.⁹⁶ For instance, relatively simultaneous to her writing, Ibn Battuta recorded how Persian pearl-divers were using tortoise-shell diving goggles to improve human sight under water, while in the Pacific, Polynesian divers were using deep wooden frame goggles.

By virtue of clever literary workarounds, problems of aquatic physics in these texts are both realized and negotiated in complex ways. In addition to these negotiations and interactions with the ocean environment, both texts craft aphotic imaginaries that demonstrate different environmental consciousness: for instance, Julian imagines a seafloor marred by human litter, while the *Pearl-Poet* imagines lively landscapes and the underwater experience of large non-human animals. It is tempting to look with awe at the

⁹⁴Mallikarjun Heralgi et al. “Persistent unilateral nictitating membrane in a 9-year-old girl: A rare case report.” *Indian J Ophthalmol* 65, no. 3 (2017): 254.

⁹⁵*Ibid.*, 253.

⁹⁶This line of thought follows from Debapriya Sarkar’s urge for scholars of pre- and early modern eras to shift our analytical paradigms away from what was “thought” and toward “what was ‘thinkable’” (*Possible Knowledge: The Literary Forms of Early Modern Science* [Philadelphia: University of Pennsylvania Press, 2023], 21).

deep-sea imaginaries of these texts. Up until now, I have examined their aquatic environments in isolation from these works' larger contexts, morals, and lessons. In the next section, I will discuss how the promising aphotic imaginaries of these texts are ultimately undermined by their reliance on extractive logics and rhetoric.

“I desired more knowing”: Rhetoric of Deep-Sea Extraction

The aphotic imaginaries of the *Shewings* and *Patience*, while sparse, have conjured up glimpses of the deep sea that are not at all far removed from the still-very-small amount of knowledge we hold about that environment today. But in addition to considering how the aphotic deep sea is imagined, it is vital to consider how it is made meaningful by the poem's characters and readers: how is it exploited, manipulated, or employed?

The outcome of Julian's medley-like visions is *expressly* to produce quantifiable change within Julian herself, and via her, her readers. After the first sight, she recounts: “alle this our lorde shewde in the furst sight, and gave me space and time to beholde it. And the bodely sight stinted, and the gostely sighte dwelled in my understanding” (8.18-21). The meting out of visions are paced in such a way as to create a maximum, lasting impact on Julian; even after the ‘bodily’ sight fades, the ‘ghostly’ sight dwells in her understanding of the scenes she witnesses; physical experiences, sights, and places are extracted for spiritual understandings whose longevity will exceed those physical spaces themselves, which are left behind as soon as they have served their ideological purpose.

This becomes an important concept for the theme of extraction when Julian's understanding is led down into environmental climes. Her second vision, which houses

her deep-sea visit, begins with Julian growing frustrated that she cannot extract *more* understanding from her view of the crucifix positioned before her bed than she already does. She declares that she has seen “bodely, swemly, and darkely, and [she] desired mor bodely light to have seen more clerly” (10.8-9); vision failing, Julian exists in a perpetually aphotic state. The imperfect and partial visions she has already experienced have awakened a desire for a more ‘light’ by which to extract fuller meaning, fuller understandings of what she witnesses. This desire is met with a reply: “If God will shew thee more, he shal be thy light” (10.9-10). Religious dedication, devotion, experience, and response will be the means by which Julian can achieve the understanding she desires. Within the text, *this* is the sole avenue to greater understanding. In order to fulfill—or at least provide contextual meaning towards—this desire, Julian’s “understanding was led downe into the sea ground” (10.16).⁹⁷

Her actual vision of the deep sea can be generously counted at nine lines, and less generously at only two. As I discussed in the previous section, even these scant lines show a surprising environmental engagement that accounts for matter such as depth and volume. In absenting her physical self from the depths, Julian circumvents one of the most outstanding characteristics of the deep sea: pressure. Because of this, she does not experience the interruption of ingrained terrestrial habits that ocean studies scholars like Melody Jue describe as a consequence of submergence. The interrupt experienced by

⁹⁷Julian’s probable source for this encounter is Psalm 139:9-10: “Ne tradas me, Domine, a desiderio meo peccatori: cogitaverunt contra me; ne derelinquas me, ne forte exaltentur. / Caput circuitus eorum: labor laborum ipsorum operiet eos” (“If I take the wings of the morning, and dwell in the uttermost parts of the sea; / Even there shall thy hand lead me, and thy right hand shall hold me”).

Julian is more like the psychic interrupt experienced by Beebe in his pressure-controlled bathysphere, who reports that his experiences “were almost too much for any connected report or continued concentration.”⁹⁸ Julian’s psychic interrupt comes as a result of her vision’s brevity: in working through this interrupt, she engages extractive rhetoric and logic that follows from her experience of intellectual vision.

Julian herself notes the brevity of her “understanding’s” visit to the deep sea. She says that this “secounde shewing was so lowe and so little and so simple [...] I was sometime in a feer whether it was a shewing or none” (10.25, 27). Perturbed by the brevity of the showing, she does not have the impulse to find meaning in its simplicity but is anxious to reformulate the experience into something she can extract meaning from. This accords with Augustine’s formulation of intellectual sight, wherein “recognizing the nature of one’s visionary experience is not easy, but a matter of intellectual vision.”⁹⁹ Julian’s encounter with the deep sea seems to be an express result of twenty years of accumulated work on her intellectual vision: While the various parts of the first vision have corresponding sections in Julian’s short text, composed more immediately after her illness, her journey to the bottom of the sea appears only in the long text, composed much later after an intervening time of meditation and consideration of her visions. This conspicuous addition should draw our attention to the function that this environmental interlude is serving. Julian’s journey to the deep sea exists in two

⁹⁸Beebe, “Half a Mile Down,” 106.

⁹⁹Keskiäho, “The Epistemology of Visions,” 145.

realms: that of spiritual vision, which deals “with the likeness of things, not with the things themselves”¹⁰⁰ and that of intellectual vision, a process which formulates these experiences into meaning.

It is this type of formulation that brings Julian to the models of thought and conceptions about the nature of God that so many scholars term “radical.” However, the relationships between these types of vision also provides a rubric by which we can think about how non-material interactions with environments can still operate via extractive logics. Early modern maritime studies scholar Debapriya Sarkar has argued that literature that engages with the environment is a crucial archive for conceptualizing extractionism, and that when thinking about environmental engagement, our attention should focus not only on large-scale, landscape-wrecking environmental disasters, but on “myriad quotidian disasters.”¹⁰¹ These quotidian disasters might not look like disasters at all but take the form of seemingly innocuous environmental encounters. These encounters do not have immediate catastrophic effects but have a cumulative or retroactive effect.

Intellectual vision as formulated by Augustine and reinscribed by myriad subsequent figures, “is the highest form of vision and interprets the two lower ones, which deal in images.”¹⁰² This type of vision, as is inherent to Julian’s anchoritic status, is a privileged mode of interpretation granted by the Holy Spirit either as part of a

¹⁰⁰Ibid., 47.

¹⁰¹Debapriya Sarkar, “Extraction, Ecology, and Early Modern Poetics,” Presented at *Ecologies and Economics: Premodern Extractions. Oecologies*, November 5, 2021.

¹⁰²Keskiaho, “The Epistemology of Visions,” 146.

spiritual vision or in retrospect after an intervening period of deliberation,¹⁰³ as is the case with Julian. A vision, experienced either corporeally or spiritually, is raw material that must be mined and fashioned. If a mystic is granted intellectual vision, a showing such as Julian's vision of the deep sea may thus undergo a type of "rhetorical extraction" wherein the raw material of the vision is extracted, and that ore is formulated into a new and purportedly greater material. The spiritual truth gained in this process necessarily leaves behind slag; when these visions occur amid a place like the deep sea, that slag has correlatives to material, lived environments. The meaning these spiritual environmental encounters have is extracted and care for their material correlatives is cast away, forgotten and unmentioned after it has served its purpose.

After digressing for a while into a meditation on Christ's suffering and the vernacle, she somewhat ironically settles on the determination that "this vision was a learning to my understanding that the continual seking of the soule pleseth God full mekille [...] it is Gods will that we seke into the beholding of him" (10.57-58, 63-64). This extractive relationship sets up a paradigm in which the deep sea is merely a tool for human revelations concerning the divine, robbing that environment of its autonomy as its own entity outside of the human experience of Christian religiosity. Through the seawater, Julian can discern divine revelation. Its role is strictly one of utility; in Julian's text, there is no sea life to disrupt or extensive habitats to destroy but positioning the deep-sea space in this way nevertheless sets up precedent to approach and interact with the deep sea in strictly utilitarian ways. The "exsample" she wants her readers to take is

¹⁰³Ibid., 147.

one of seeking: she invites them into this environment with divine authority that undermines ecological autonomy. If a person can discern the shape of God by seeking after him in more distant and extreme environmental climes, this sets up a tenuous paradigm in which the human is always invited to invade a greater and greater variety of environments, each with their own autonomous ecosystems.

Julian's engagement with the sea is not extractive in the physical sense of the word: only her *understanding* is led to the sea-bottom. She does not touch, disrupt, or take anything in this imagined sea-space; the only verbs that denote her actions of any kind are "saw" and "understode" (10.16, 18), both non-tactile actions. The main model established by Julian's experience with the deep sea is that it can serve a utilitarian purpose within a larger narrative of religious experience, and that others should take this type of extractive logic "in exsample" (8.28).¹⁰⁴ To this effect, Peters and Steinberg have noted the ways in which "many writings dilute the sea, utilising it as a vehicle to make sense of socio-spatial, embodied, and political experience—in turn reducing the actual ocean to an abstraction,"¹⁰⁵ though in fact the sea is not an abstraction, but an active ecosystem. To approach and depict any environment—in this case, the deep sea—within such terms is *already* engaging in models of extraction. It calls to mind Rob Nixon's formulations of slow violence: "a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all...a

¹⁰⁴She asks that her readers forget the "wrech that it was shewde to" and instead take lessons she offers "as Jhesu had shewde it to you" (8.34, 37).

¹⁰⁵Philip Steinberg and Kimberly Peters, "The Ocean in Excess: Toward a More than Wet Ontology," *Dialogues in Human Geography* 9, no. 3 (2019): 18.

violence that is neither spectacular nor instantaneous, but rather incremental and accretive, its calamitous repercussions playing out across a range of temporal scales.”¹⁰⁶ This violence is wrought on the level of rhetoric that seeks to metaphorize and utilize environments with real, material correlatives that suffer for human intervention—as Julian herself demonstrates.

Rhetorical extractivism in literary environments can nonetheless have both ideological and material effects. Like Julian’s *Shewings*, for which the sea is a symbolic object to be extracted from in service of religious realization, *Patience* also depicts an extractive, utilitarian model of engaging with the deep sea. Contrary to Julian, Jonah physically visits the deep sea, but while there, the whale and sea both solely exist for Jonah to draw his own spiritual lessons from. Julian’s experience at the sea bottom is neutral, even benevolent. The absence of a physical visit to the sea preserves her from aspects that make the sea most inhospitable to human life, such as pressure. By contrast, Jonah imagines himself bound, wrapped, compressed by the pressure of the deep sea, his body captive:

And zet I sayde as I seet in þe sea boþem [...]
I am wrapped in water to my wo stoundez;
þe abyne byndes þe body þat I byde inne;
þe pure poplande hourle plays on my heued
To laste mere of vche mount, Man, I am fallen;
þe barrez of vche a bonk ful bigly me haldes.

Yet I said as I sat in the sea’s raging depths [...]
To my woe I’m awash in this water right now.
The abyss, Lord, is binding this body of mine;
It boldly bubbles above my poor head!

¹⁰⁶Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, MA: Harvard University Press, 2011), 2.

As a mere, earthly mortal, down mountains I fell!
Now each barrier binds me, each beach, and each shore.
(313, 317-321)

The reader understands Jonah's relationship to the sea to be mediated by the body of the whale. The whale serves as Jonah's own "common light" by which he is granted access to this space, and it is by virtue of the air bubble within the whale's guts that Jonah can withstand this environment.¹⁰⁷ And yet, his own reporting of this occurrence blurs and obscures this mediation. Jonah positions himself as directly experiencing the effects of the deep sea: "I seet in þe sea boþem," he declares, with no mention of a mediating agent—the whale, even before its formal exit, is momentarily forgotten. Jonah does not just sit on the sea-bottom as Julian does but is "wrapped"¹⁰⁸—the sea envelopes his body and Jonah's self-positioning shifts, no longer subject but object. He is clearly disturbed by his experience, by seeing aspects of himself become object to the ocean's subject: the water envelopes him, the abyss binds him, the waves roil over him. The poem uses this subject-object orientation as fodder to enact Jonah's sea-change, his realization that he oughtn't have run from his missionary calling. From within "þe dymme hert" of "þe depe se" (308; "the dim heart of the deep sea"), Jonah cries, "Now, Prynce, of þy prophete pité þou haue" (282; "O Prince of Your Prophet, have pity on me"). Addressing himself finally as 'prophet,' Jonah turns himself over entirely to missionizing: "Soberly to do þe

¹⁰⁷It should be noted that Jonah is not a passive or benign passenger, but more like a parasite who extracts from his host at the host's expense. The whale, for their part, seems agitated and in pain: "Ande euer walters þis whal bi wyldren depe, / þurȝ mony a regioun ful roȝe, þurȝ ronk of his wylle; / For þat mote in his mawe mad hym, I trowe, / þaȝ hit lyttel were hym wyth, to wamel his hert" (297-300; "The whale in water's wilderness swims, / Through the roughest of regions, enraged in his pride, / For that mote in his maw quickly made him—I think—, / As it stuck in his side very sick in his heart").

¹⁰⁸See MED, "[wrappen](#) v." 4a: "to immerse (oneself in a liquid medium)."

sacrafyse when I schal saue worþe” (334; “Once redeemed I will do what You deign”). In this way, the poem’s reorientation of subject-object actually reinforces the objectification of the deep sea: its agency is a farce, a mere tool to set Jonah back on his evangelizing mission. The potential for meaning making set up by the deployment of an aphotic imaginary, here, is in service to the poem’s conceptual and ideological interests, as the “depe” and “derk” waters are manipulated into a site used to re-inscribe Jonah’s evangelizing destiny. Like Julian, Jonah takes from the deep sea, using its material to extract their necessary meaning and then forgetting the environmental body altogether.

Like Julian, the anonymous *Pearl*-Poet’s narrative extracts meaning from its deep-sea space in service to religious transformation. In this case, the result of the transformation serves more explicitly missionizing ends. Jonah brings to Ninevah stories of their imminent destruction and devastation, such that “a hidor hem hent and a hatel drede / þat all chaunged her chere and chylled at þe hert” (367-77; “a terror took those townspeople there / That they changed, became cheerless, were chilled to the heart”). In this way he leverages his lessons found at the sea bottom against the people of Nineveh. Part of this is threatening devastation on the people, animals, and land there:

Sesez childer of her sok, soghe hem so nauer,
 Ne best bite on no brom, ne no bent nauþer
 Passe to not pasture, ne pike non erbes,
 Ne Non oce to no hay, ne no horse to water.
 Al schal crye, forlemmed, with alle oure clere strenþe;
 Þe turd schal ryse to Hym þat rawþe scale haue.

Take each babe from the breast, though he bawls out and cries.
 Take each beast from the broom sage; he’ll bite no grass,
 Nor will pass to a pasture with plants there. And from
 Water holes keep the horse, and from hay keep the ox.
 We shall howl in the height of our hunger at once;

Thus by Him will be heard every howl of pain!
(391-396)

Jonah takes his newfound authority, bequeathed as a result of his underwater spiritual transformation, and brings it down upon the people of Nineveh, affecting their material health and well-being. He becomes a godly agent seeking to—in his mind—‘purify’ the religio-racially coded peoples there. The deep-sea imaginary of this poem in effect operates only to this end, the glimpses of extra-human existence and environment undermined by the poem’s ultimate return to the threatening enforcement of its religious mission.

William Abberley writes: “Representations of the subaqueous not only express ideas about aquatic nature: they also indirectly reflect and engage with all manner of political, philosophical and aesthetic concerns.”¹⁰⁹ The aphotic imaginations I have discussed in Julian’s *Shewings* and *Patience* clearly represent imaginative ecological visions and interpretation of aquatic nature. However, as I have argued, these environments are ultimately engaged in ideologically extractive ways that bolster and reinscribe religio-political concerns. In these texts, environments are deserted after the key figure has extracted what they wish from it, with little thought for those who permanently call those environments home and who are ultimately figured as expendable. A seemingly innocuous deployment of this trope, such as Julian’s deep-sea revelations, can easily escalate to a model such as Jonah’s, in which this revelation is reasserted in the world above as conversionary violence—a theme that increasingly iterates itself across

¹⁰⁹Abberley, *Underwater Worlds*, 4.

my last two chapters. Thus, the deep sea, to borrow a phrase from Adam Miyashiro, can be “killed without being murdered,”¹¹⁰ visited again and again in premodern aphotic imaginaries, extracted endlessly to suit the ideologies of those who take from it.

Conclusion: Possible Futures for the Shape of Water

Water will conform to the shape of any container it is poured into; this is what makes it such a “flexible metaphor,” to repeat Hetta Elizabeth Howes’ phrasing. Just as these shapes do not, in fact, reflect anything about the true nature or shape of water, these texts and their distant ideological descendants in the accounts of naturalists such as William Beebe do not reveal any truths about the deep-sea environment itself. Rather, they reveal the ways that humans extract meaning from this space and the adverse ways that systems in power will fashion this extracted meaning into material consequence. After identifying these moments and the embedded ways they figure throughout literature and history, we might ask: are *other* models of engagement possible? To continue the prior metaphor: what would it look like, not to pour this water into a container of our own fashioning, but to take cues from this element as it is, in its great diversity of being?

Alexis Pauline Gumbs—who self describes as a “queer Black feminist love evangelist and a marine mammal apprentice”¹¹¹—recounts how, when confronted with “neutral” scientific marine guidebooks, she was “confronted with the colonial, racist,

¹¹⁰Adam Miyashiro, “Homeland insecurity: Biopolitics and sovereign violence in *Beowulf*,” *postmedieval: a journal of medieval cultural studies* 11 (2010): 385.

¹¹¹Gumbs, *Undrowned*, 12.

sexist, heteropatriachalizing capitalist constructs that are trying to kill me.”¹¹² This is because there is no such thing as scientific, literary, textual (and on and on) neutrality or objectivity. Because ditching subjectivity of perspective for some idealized ‘objectivity’ is both impossible and undesirable even if it *were* possible, Gumbs undertakes an experiment to adopt a new perspective entirely, “to humbly submit to the mentorship of marine mammals” at an environmental moment when doing so could not be more pressing.¹¹³

Through observing the movements, evolutions, and behaviors of marine mammals, Gumbs asks continual questions of herself and her readers. At one point, she notes an effect similar to the trope of the ocean as an inverse or alien world—discussed in my opening anecdote about William Beebe’s bathyspheric descent and partially subverted by Julian—though Gumbs’ interaction with this concept and the conclusions she draws from it are vastly different:

There is one species of *Lissodelphis* [right whale dolphin] in the northern hemisphere and one in the south. As above, so below. The guidebooks say there is no overlap in range, which means they never see each other. But I wonder. I wonder about the planet itself as a mirror. A sphere of parallel existence. Am I not participating in a dance with those beyond where I can touch, or know, or swim to? In my breathing, I am balancing the seen and the unseen, learning to cultivate a graceful way to be both ocean and sky.

¹¹²Ibid., 8.

¹¹³Ibid., 9. Concerning her methodology, she notes, “Movements for Black liberation, queer liberation, disability justice, economic justice, racial justice, and gender justice are core to the meditations that are included here. But these are still meditations. Instead of proposing a specific agenda or a predetermined set of instructions, these meditations open space for wondering together and asking questions towards a depth of engagement that is, yes, still emerging” (11). I hope my current exploration of medieval aphotic sea spaces engenders a similar ethos.

I am studying how to be in school with you. I time my
breathing to your heart to find the ocean. My heart will race
to meet your laughter: you are sky.¹¹⁴

A mirrored world or environment is not by necessity a challenge that demands “‘final answers,’ quick and definitive action—to douse flames, draw blood” as Toni Morrison has written.¹¹⁵ This is a stricture placed upon that world by those who interpret it and interact with it. When those who encounter such a space are in service to ideologies of colonialism, evangelism, conversion etc., these environments are misappropriated, maligned, objectified—extracted. But alternative perspectives and approaches are possible. One of the first steps is to excavate the default perspectives that have been taken for granted. In a moment eerily reminiscent of the tale of Jonah, Gumbs recounts when, off the coast of the only country where it is still legal to commercially hunt *Balaenoptera edeni*, the tropical whale, one particular whale enacts a small revenge:

Was it surprising when a member of the clade swallowed a white South African tour operator? (Not long enough to kill him, just long enough to change his outlook.) After the whale spit him back out, he said, “Everything went dark. I felt enormous pressure.” The tourist industry says this swallowing incident was obviously definitely a mistake on the part of the whale. I’m not saying you can’t trust those reports. I’m just saying that they come from the tourist industry [...] Tropical whales engage in direct and complex actions that you can’t explain away.¹¹⁶

¹¹⁴Gumbs, *Undrowned*, 48.

¹¹⁵Toni Morrison, “Grendel and His Mother,” in *The Source of Self-Regard: Selected Essays, Speeches, and Meditations* (New York: Alfred A. Knopf, 2019), 258.

¹¹⁶Gumbs, *Undrowned*, 68.

The whale does not disappear into nothingness when it spits its errant passenger back onto dry land, nor is he object to demonize, objectify, exterminate. The ways that humans engage with environments such as the deep sea, even on merely rhetorical levels, establish paradigms of extraction that have lasting cultural effects and, as those living in the twenty-first century know, contribute to extinctions, pollution, droughts, floods, and other environmental crises. In this chapter, I have tried to excavate what amounts to the relative ‘tourist industries’ operating within this small selection of medieval texts, as well as their depictions of and interactions with deep-sea environments, the extractive rhetoric these depictions participate in, and the potential ideological effects these systems of interactions have.

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Chapter 3

Air Travel and Hierarchies of Verticality in *Orlando Furioso*

“The vertical is not one of the dimensions of space, it is the dimension of power.”

—Michel Foucault (“The Force of Flight,” 170)

Introduction

This chapter primarily argues for the scientific influence on representations of literary air travel in Ludovico Ariosto’s 1532 *Orlando Furioso*, and the way that this form of travel results in a politically and imperially motivated hierarchy of access and power, wherein verticality is associated with the ability to enact the extractive view, as well as with religio-racial paradigms that animate the early modern European colonial enterprise. I want to begin, however, with a contemporary speculative work that takes place closer to home in both time and space, which speaks to how literary engagements with aerial and extraterrestrial space are related to terrestrial inequities, and to the echoes between these literary representations and contemporary space flight and environmental concerns in the twenty-first century.

Octavia Butler’s 1993 apocalyptic science fiction novel *The Parable of the Sower* begins a couple dozen miles inland of Los Angeles, in July 2024—one month and several dozen miles from the place where I write this chapter. The main character, 15-year-old Lauren Oya Olamina, writes about a space launch to Mars, in which a female astronaut died after her suit was compromised. The citizens of the fictional neighborhood of Robledo comment on how the failed mission highlights the earthly inequity of their

apocalyptic society: “All that money wasted on another crazy space trip when so many people here on earth can’t afford water, food, or shelter.”¹ Lauren, who eventually comes to found the religion Earthseed, whose destiny “is to take root among the stars,”² has a slightly different perspective. In a world beset by inequality and environmental collapse, she thinks “space exploration and colonization are among the few things left over from the last century that can help us more than they hurt us,” though she acknowledges that “[i]t’s hard to get anyone to see that, though, when there’s so much suffering going on just outside our walls.”³ When the alt-right president-elect Christopher Charles Morpeth Donner is elected, he immediately dismantles the “wasteful, pointless, unnecessary” space program that might help Earth’s citizens, and instead privatizes “[n]ear space programs dealing with communications and experimentation,”⁴ along with dismantling minimum wage requirements, environmental and worker protection laws, and incentives for employing unhoused persons. He turns to the vertical plane and the planets dispersed across it as a site of capitalist endeavor—a move he pairs with larger political edicts that concern a broad range of interdependent social systems.

Here, we see several tensions orbiting around discussions of space travel that speak to the long legacy of how power and inequity are indexed along the vertical plane, which this chapter will explore. Lauren’s neighbors see space travel as the realm of the

¹Octavia Butler, *Parable of the Sower* (New York: Open Road Integrated Media, Inc., 2000), 35.

²Ibid., 135.

³Ibid., 39.

⁴Ibid., 50.

elite, who are more inclined to divert money to a space trip than to provide resources for terrestrial citizens; thus, space travel indirectly exacerbates earthbound social inequities. Lauren also sees space as a cypher for earthly concerns, but she has given up hope on the terrestrial realm, too beset by corruption, prejudice, and climate catastrophe, and she looks to the stars for futurity. Donner sees space as a potential arm of the authoritarian late-capitalist regime he represents throughout the United States, subsuming the vertical realm into his religio-nationalist drive to “make America great again.”⁵

One of the most famous lines associated with real-world space travel is Neil Armstrong’s famous phrase, where he declares that the twentieth-century American moon landing represents “one giant leap for mankind”—this romanticized construction stresses the supposed universal and communal benefit of (American) space travel for *all* of humankind. Armstrong’s words position American space travel in terms of universalized representation, and Butler’s depiction speaks to privatization—to the twenty-first century reader, these multivocal significations of space travel will likely be familiar, as ascension into the aerial realm has largely been the purview of the economic and political elite. The private companies SpaceX and Blue Origin are founded by the billionaires Elon Musk and Jeff Bezos respectively. While both companies purport that they support environmental endeavors and partner with the government-funded organization NASA (National Aeronautics and Space Administration), what Yuri Nam identifies as the “inadequate regulation, research, and misguided priorities” by these private space

⁵Octavia Butler, *Parable of the Talents* (New York: Seven Stories Press, 1998), 24.

companies create outsized environmental impacts on Earth, which lead to the perpetuation and intensification of terrestrial environmental and economic concerns.⁶

The motivations of these tech-billionaire-founded companies' space ventures differ. Bezos wants to use extraterrestrial space to extract resources and energy,⁷ while Musk believes that remaining earth-bound will result in, to use his own words, "some eventual extinction event" that can be avoided if humans become a "a space faring civilization and a multi-planet species."⁸ Privatized space travel is thus rhetorically constructed as a reaction to perceived earthly need—either for extracted resources or an alternative home in an era of irreversible climate catastrophe. Sometimes, space travel is proposed as a magic-bullet solution, a place we can turn to immediately for solutions to terrestrial problems: in a 2017 address to the International Astronautical Conference in Adelaide, Australia, Musk claimed that his plan to colonize Mars with 1 million people would launch its first expedition in 2022, while the first fully manned missions would take place in 2024—neither mission has taken place, and both dates were proposed with no actual plan for how humans would survive on the red planet after they arrived there.⁹

⁶Yuri Nam, "One-Way Ticket to Mars: The Privatization of the Space Industry and its Environmental Impact on Earth and Beyond," *Northwestern Journal of Law and Social Policy* 19, no. 1 (2023): 156.

⁷See Kenneth Chang, "[Jeff Bezos Lifts Veil On His Rocket Company, Blue Origin](https://www.nytimes.com/2016/03/09/science/space/jeff-bezos-lifts-veil-on-his-rocket-company-blue-origin.html?_r=0)," *The New York Times*, March 8, 2016 https://www.nytimes.com/2016/03/09/science/space/jeff-bezos-lifts-veil-on-his-rocket-company-blue-origin.html?_r=0

⁸"Making Humans a Multiplanetary Species." *YouTube*, uploaded by SpaceX, 27 September 2016, https://www.youtube.com/watch?v=H7Uyfqj_TE8

⁹See Dave Mosher, "[SpaceX has published Elon Musk's presentation about colonizing Mars — here's the full transcript and slides](https://www.businessinsider.com/elon-musk-mars-iac-2017-transcript-slides-2017-10)," *Business Insider*, 25 October 2017. <https://www.businessinsider.com/elon-musk-mars-iac-2017-transcript-slides-2017-10>

Tickets for a few minutes high in the atmosphere on billionaire Richard Branson's Virgin Galactic's SpaceShipTwo cost \$450,000,¹⁰ roughly seven and a half times the average annual salary in the United States in 2023.¹¹ Tickets into orbit on a SpaceX rocket cost significantly more, at \$55 million each.¹² To put it simply, much like in *Orlando Furioso*, the higher you want to go, the more economically elite you must be. In the 21st century, space travel thus fulfills Butler's prophecies both by highlighting global inequity and becoming the privatized realm of the hegemonic billionaire class.

While it may seem anachronistic to begin this chapter with a discussion of a late twentieth-century science fiction novel and of the twenty-first century world of privatized space travel, I do so purposefully. In discussion Octavia Butler's archived materials, Shelley Streeby calls Butler "a radical Black feminist theorist, historiographer, and researcher across fields and disciplines."¹³ This focus on Butler as a historiographer in particular emphasizes how she "preserves pieces of the past and present but changes them as she constellates and annotates them with a speculative eye toward the future."¹⁴ When asked later in life about whether she saw her *Parable* series as prophetic, Butler

¹⁰Joey Roulette, "How much does a ticket to space on New Shepard cost? Blue Origin isn't saying," *The New York Times*, October 13, 2021, <https://www.nytimes.com/2021/10/13/science/space/blue-origin-ticket-cost.html>

¹¹Bella Wong, "Average Salary By State in 2024," *Forbes*, August 23, 2023, <https://www.forbes.com/advisor/business/average-salary-by-state/>

¹²Roulette, "How much does a ticket to space in New Shepherd cost?"

¹³Shelley Streeby, "Radical Reproduction: Octavia E. Butler's HistoFuturist Archiving as Speculative Theory," *Women's Studies* 47, no. 7, (2018): 720.

¹⁴Streeby, "Radical Reproduction," 720.

answered, “I hope they're not prophecy because I don't want to live in that world.”¹⁵

Though she famously called herself a “pessimist,” Butler was a keen observer of both her contemporary world and the historic social patterns that have shaped it, and used these observations to shape her speculative work.

Butler’s work represents a recent iteration of a longer historical and literary trend in which authors examine their contemporary cultural milieu and project these terrestrial hierarchies onto the stars, ranging from ancient texts such as Lucian of Samosata’s second century *Icaromenippus*, to Carolean ones such as Johannes Kepler’s 1634 *Somnium*, to Belle Époque texts like Jules Verne’s 1865 *From the Earth to the Moon* and 1870 *Around the Moon*, all the way to pre-Moon landing twentieth century ones, such as Arthur C. Clarke’s 1951 *Prelude to Space*. These projections come from various positionalities and thus have various effects: Butler, for instance, represents a powerful Black Feminist voice in science fiction, whose self-proclaimed pessimistic visions of the future act as a beacon of hope, making diverse groups of people feel like they are “part of history [...] part of the future, [...]their] ancestors' wildest dreams.”¹⁶ In terms of early modern representations of space travel, Ivana Bičak, who works at the intersection of early modern poetry and science, discusses Francis Harding’s 1679 “In Artem Volandi,”

¹⁵Laine Kaplan-Levinson, Laine. “Sci-Fi Writer Octavia Butler Offered Warnings and Hope in Her Work.” *NPR*, February 24, 2021.

¹⁶Kaplan-Levinson, “Sci-Fi Writer Octavia Butler Offered Warnings.” Bill Ashcroft writes that postcolonial science fiction seeks “alternate futures for the human race” and is “profoundly involved in future thinking [...] This vision almost inevitably involves an ethical examination of imperialism itself” (“Postcolonial Science Fiction and the Ethics of Empire,” in *Ethical Futures and Global Science Fiction*, ed. Zachary Kendal et al. (Cham, CH: Palgrave Macmillan, 2020), 165). *Parable* certainly participates in this type of project as Lauren looks to the stars for a home for Earthseed. However, as I go on to discuss, there is a parallel turn to the stars by imperial entities, who also map their concerns onto the aerial plane.

which posits that “If the rich were to inhabit heavenly spheres [...] the poor, unable to afford life in the clouds and sentenced to inhabit the earthly dregs [...] would also profit since the wealthy would necessarily leave behind their lavish houses and estates,” and thus “the rich would be able to experience [...] the purest heavenly air” while “the poor would conquer poverty and enjoy earthly bliss.”¹⁷ These speculations on extraterrestrial space as the exclusive realm of the wealthy strike an uncanny chord to the twenty-first century reader familiar with privatized space travel, though they also seem altogether too optimistic about the fate of “the poor” left behind on earth.

This early practical meditation on space travel, which projects earthly hierarchies and aspirations onto the aerial realm, is preceded by an even greater literary lineage of air and space travel. In the second century CE, for instance, Lucian of Samosata’s *Icaromenippus* described its title character, Menippus, affixing the wings of a vulture and an eagle to his arms for his own moon flight, hoping to avoid the pitfalls of Icarus’ doomed flight.¹⁸ While Lucian is admittedly a satirist, Menippus’ appropriation of the ‘technology’ of the birds’ wings nevertheless demonstrates how intellectuals were thinking about most likely avenues for aerial flight.

There is sustained critical attention to early modern literature that engages the possibilities of air travel and moon journeys in the later-sixteenth and seventeenth-century European context. These studies center texts such as Francis Godwin’s 1638 *The*

¹⁷Ivana Bičák, “Francis Harding’s ‘In Artem Volandi’ (1679) and the early modern art of flying,” *The Seventeenth Century* 31, no. 3 (2016): 341.

¹⁸Lucian of Samosata, *The Works of Lucian of Samosata, Volume 03*, trans. F. G. Fowler and H. W. Fowler (Urbana, IL: Project Gutenberg, 2004).

Man in the Moone, John Wilkins' 1638 *The Discovery of a World in the Moone; or, A Discourse Tending to Prove, That 'Tis Probable There May Be Another Habitable World in That Planet* and his 1640 *A Discourse Concerning a New World & Another Planet*, Cyrano de Bergerac's 1657 *L'Autre Monde: où les États et Empires de la Lunem*, Aphra Behn's 1687 *The Emperor of the Moon*, and Elkanah Settle's 1697 *The World in the Moon*, to name a few outstanding examples of literary or theoretical explorations of aerial travel and moon journeys in the period. As the medieval and early modern scholar and poet Mary Baine Campbell has written, these literary explorations mirrored scientific attention to air travel: both Johannes Kepler and John Wilkins "worked on their governments to fund research towards that end, Kepler having figured out the logic and rough mathematics of rocket travel."¹⁹ Historian David Cressy has written that seventeenth century European professionals from all stripes, be they religious officials, philosophers, or writers, became fascinated with the possibilities of the "new global geography and the new astronomical science of late Renaissance Europe."²⁰ Nicolaus Copernicus's *De revolutionibus orbium coelestium* shattered the common view of the cosmos in 1543 and is sometimes considered a potential origin point for the so-called "Scientific Revolution," while Galileo's telescopic innovations were made available in 1610's *Sidereus Nuncius* and 1632's *Dialogue Concerning the Two Chief World*

¹⁹Mary Baine Campbell, "Speedy Messengers: Fiction, Cryptography, Space Travel, and Francis Godwin's *The Man in the Moone*," *The Yearbook of English Studies* 41, no. 1(2011): 199.

²⁰David Cressy, "Early Modern Space Travel and the English Man in the Moon," *The American Historical Review* 111, no. 4 (2006): 962.

Systems.²¹ In England, there was even a manned flight program run by the Royal Society that flourished in the middle of the seventeenth century.²²

This period also saw a resurgence in popularity of Ludovico Ariosto's *Orlando Furioso*, leading to a popular English translation of the poem by John Harington in 1634. Ariosto's Italian language original was published in three versions, first in 1516 and then in its eventual completed form in 1532, eleven years before Copernicus's heliocentric hypothesis would reorient conceptions of earth, atmosphere, and space writ large. Ariosto's text, and the aerial and interplanetary travel contained therein, thus represent perhaps the last popular Ptolemaic air and moon journey in European literature.

Though the seventeenth century saw a boom in interest in air flight and space travel, Ariosto's contemporary world was also colored by this interest, as well as by considerations of what technologies might make this type of travel possible. Ariosto's literary invention, the hippogriff—a flying horse-griffin hybrid—is one negotiation of these possibilities, and it has correlatives in scientific writing. For instance, between 1486 and 1490, Leonardo da Vinci created the first designs for a flying machine.²³ Da Vinci's ornithopter took its greatest inspiration from the biology of winged animals—something it has in common with Ariosto's hippogriff—but he also produced lengthy meditations on concepts of lift, drag, and pressure in the realm of potential aerial flight through the early

²¹See Cressy, especially 966, for an extended discussion of the multiple scientific discoveries of the period that influenced conceptions of air travel.

²²For additional details, see Bičák, "Francis Harding's 'In Artem Volandi'."

²³For details, see John D. Anderson Jr. "The Early History of Aerodynamics: From Antiquity to da Vinci." *A History of Aerodynamics* (Cambridge, UK: Cambridge University Press, 2015), 14.

1500s.²⁴ Bičak writes that Da Vinci's drawings for his ornithopter were unavailable to the eventual seventeenth century Jacobean space program, "available only in manuscripts in private collections in Italy."²⁵ However, Da Vinci did share a patron with Ariosto: Isabella d'Este—historian of early modern science Mackenzie Cooley has written that Isabella was famously "a sponsor eager to influence the projects she patronized."²⁶ While there is no recorded relationship between da Vinci and Ariosto, they certainly both orbited in the same spheres of patronage as they each created their respective flying machines: da Vinci's, a diagrammed ornithopter, and Ariosto's, a genetically modified mythological creature he called a "hippogriff." That the European societies that gave root to the eventual Jacobean space program, which was seriously invested in the science of air travel in a post-Copernican, post-Baconian, post-Galilean world, also saw fit to translate and resurrect *Orlando Furioso*, perhaps denotes a retrospective recognition of generic and scientific attributes that would become culturally significant in an era more firmly sat within the typical temporal boundaries of the Scientific Revolution.

Orlando Furioso features two major moments of sustained air travel, undertaken by the characters Ruggiero and Astolfo on the back of a hippogriff. To the best of my knowledge, there is no study that examines the variable politics of access to airspace that are inherent in Ruggiero's and Astolfo's flights, nor the bearing this air travel has upon the resolutions of their narrative journeys. While there is a proliferation of literature about

²⁴Anderson Jr., "The Early History of Aerodynamics," 24.

²⁵Bičak, "Francis Harding's 'In Artem Volandi'," 335.

²⁶Mackenzie Cooley, *The Perfection of Nature: Animals, Breeding, and Race in the Renaissance* (Chicago: Chicago University Press, 2022), 82.

Ruggiero's circumnavigation of the globe and Astolfo's moon journey, most of it is focused around mapping the geographies of these journeys—an extremely fruitful endeavor, given Ariosto's contemporary society was newly contemplating what they perceived as expanded geographies in their real lives²⁷—or the symbolic narrative meaning of the moonspace.²⁸ Many address Ruggiero's lack of control over the hippogriff through the lens of symbolism, allegory, or fantasy,²⁹ rather than discussing the hippogriff's existence and control over its abilities as scientific or socio-political. \

Thus, my argument is multi-faceted: I will briefly discuss air in the early modern critical context, the extant scholarship and theory on the social dimensions of aerial verticality, and some genre-related intersections between science and literature that influence my reading. I use this situating framework to then argue that the hippogriff—an

²⁷See, for instance: Monica Farnetti, "Ariosto: Landscape Artist," in *Ariosto Today: Contemporary Perspectives*, ed. Donald Beecher, Massimo Ciavolella, and Roberto Fedi (Toronto: University of Toronto Press, 2003), 93-105; Ita Mac Carthy, "Ariosto the Traveller," *Modern Language Review* 102 (2007): 397-409.; Italiano Federico, "Translating the map: Carticity and transmediation in Ariosto's *Orlando Furioso*," in *Translation of Geography* (London: Routledge, 2016), 32-50; Alessandro Marignani, "'Il Piacer Ch'avea Di Gire / Cercando Il Mondo': Travel and Geography in *Orlando Furioso*," *Comitatus: A Journal of Medieval and Renaissance Studies* 52 (2021): 187-215; Daniel Leisawitz, "Ironie Geography in Ariosto's *Orlando furioso*," *Renaissance Quarterly* 75 (2022): 367-402.

²⁸See, for instance: Alexandre Doroszlaï, "Les sources cartographiques et le Roland Furieux: Quelques hypothèses autour de l' 'espace réel' chez l'Arioste," in *Espaces réels et espaces imaginaires dans le Roland furieux*, ed. Alexandre Doroszlaï et al. (Paris, France: Université de la Sorbonne Nouvelle, 1991), 11-46; Alexandre Doroszlaï, *Ptolémée et l'hippogriffe: La géographie de l'Arioste soumise à l'épreuve des cartes* (Alessandria, Italy: Edizioni dell'Orso, 1998); Daniel Leisawitz, "Ironie Geography"; Alessandro Marignani, "Il Piacer Ch'avea Di Gire"; Ladina Bezzola Lambert, "How Metaphors Matter: Astolfo's Lunar Journey in the *Orlando Furioso*," in *Imagining the Unimaginable: The Poetics of Early Modern Astronomy* (New York: Rodopi 2002); Ita Mac Carthy, "Ariosto the Lunar Traveller," *The Modern Language Review* 104, no. 1 (2009): 71-82.

²⁹See, for instance: Daniel Javitch, *Proclaiming a Classic: The Canonization of Orlando Furioso* (Princeton, NJ: Princeton University Press, 1991); Daniel Javitch, "The Advertizing of Fictionality in *Orlando furioso*," in *Ariosto Today: Contemporary Perspectives*, ed. Donald Beecher, Massimo Ciavolella, and Roberto Fedi (Toronto: University of Toronto Press, 2003), 106-125; Albert Russel Ascolti, *Ariosto's Bitter Harmony: Crisis and Evasion in the Italian Renaissance*. (Princeton, NJ: Princeton University Press, 2014).

animal I read as both mythological and highly scientific—is emblematic of the poem’s larger narrative concerns with both looking back into its ancient inspirations and medieval source texts and forward into the expansion of empirical science. The hippogriff is the most vital element in the poem’s air travels, yet the scientific dimensions of its literary existence have been hitherto ignored. Using Robert A. Heinlein’s formulation of the difference between “extrapolation” and “speculation” within the science fiction genre, I begin by giving serious consideration to the extrapolated “science fiction” of the hippogriff. Then, I move into discussing Ruggiero and Astolfo’s air travel upon the hippogriff, which opens a speculative vertical dimension to the *Furioso*’s famously expansive geographical breadth. I argue that the so-called “success” of the two men’s journeys hinges upon their ability to both embody an extractive view in the airspace and become productive entities within the logic of the text.

In essence, the two knights’ control over the new technology of the hippogriff becomes a barometer or litmus test, which judges how well they fit into certain “desired” identities. The hierarchization of Ruggiero and Astolfo within the vertical plane and the access they each receive to the airspace is indicative of larger contemporary religio-racial hierarchies that become integral to expanding religious and political imperial enterprises through the sixteenth century. Just as Jonah or Julien’s journeys to extreme ocean environments serve as a point of ideological extraction that shores up their religious authority in the world above, as I discussed in Chapter 2, variable points of access to airspace affects Ruggiero’s and Astolfo’s actions once they reach solid ground. I argue that access to variable planes of the vertical dimension translates directly into earthly

authority, as Astolfo mobilizes his successes in the air into a seemingly supernatural control over the elements, while Ruggiero becomes utterly helpless to them, forced to convert to Christianity to save his life.

I thus demonstrate how—in an era of seemingly expanding geographies—the vertical airspace is co-opted into frameworks that seek to identify extractable labor and translate a politics of access into terrestrial authority and environmental control. The poem thus positions extreme environments as extractable space that has a bearing on terrestrial authority, as I began to discuss in Chapter 2. By attending to these dimensions of the airspace and the larger significance of air travel and spatial exclusion, we can begin to see how the ideologies of extraction I have discussed throughout this dissertation morph through the early modern period, situated as it is on the precipice of colonialism, the expansion of empirical science, and the advent of extractive capitalism. This chapter thus caps off my discussion of ideologies of extraction across the centuries in three ascending, extreme environments: underground in the watery bowels of Dante's hell, deep in medieval ocean waters, and finally in the stratified early-sixteenth century airspace. This chapter also serves as a bridge, analyzing how environmental space is manipulated into larger early modern European concerns about knowledge, identity, and authority—I examine these thematics and their real-world consequences more fully in my final chapter.

“A new unheard-of means of transport”: The Science Fiction of Air Travel on Ariosto’s Hippogriff

The “matter” of early modern air is increasingly well documented in early modern scholarship. One segment of this scholarship concerns how premodern literature makes air visible or comprehensible to the human viewer. Valerie Allen has written about how medieval literature “make[s] the invisible visible” in a variety of contexts, including how “religious art of both west and east” depicts sacred figures within “an aureola, a cloud or bubble of air made visible.”³⁰ Steve Mentz makes air visible (and acknowledges when it cannot be made visible) by attending to three registers of early modern air: winds, whose power can be harnessed for economic purposes; breath, which introduced the transcorporeality of air both inside and outside the body; and “nothing,” or the airy void.³¹ Carla Mazzio links these discussions to more historically specific depictions of air by comprehensively discussing the history of early modern air and its “resistance [...] to *direct* visual perception”,³² including the negative affect created around an element that not only could not be harnessed, but could only be peripherally perceived via “indirection or metonymy.”³³ This second wide-ranging vein of scholarship concerning early modern

³⁰Valerie Allen, “Airy Something,” in *Elemental Ecocriticism: Thinking with Earth, Air, Water, and Fire*, ed. Jeffrey Jerome Cohen and Lowell Duckert (Minneapolis: University of Minnesota Press, 2015), 84, 86.

³¹Steve Mentz, “A poetics of nothing: Air in the early modern imagination,” *postmedieval: a journal of medieval cultural studies* 4, no. 1 (2013): 30–41. This vein of early modern scholarship responds to larger discussions of transcorporeality and materiality, embodied in works such as Stacy Alaimo’s *Bodily Natures: Science, Environment, and the Material Self* (Bloomington: Indiana University Press, 2010).

³²Carla Mazzio, “The History of Air: Hamlet and the Trouble with Instruments,” *South Central Review* 26, no. 1&2 (2009): 153.

³³*Ibid.*, 153.

air addresses common medieval and early modern concerns over miasma, the idea that bad air could transport infection or disease,³⁴ or early modern air pollution more broadly.³⁵ I leave it to these cited works to attend to the nuance and variety of discussions of these aspects of air in the early modern period.³⁶ What this body of scholarship highlights, however, is the immensity of air as a subject of artistic, scientific, and theological inquiry. I opened this chapter with an anecdote that introduced the ways in which twentieth and twenty-first century literary and scientific milieus engage space flight as a site on which a variety of contemporary human cultural concerns are projected;

³⁴For a small portion of this significant body of scholarship, see: Tom Koch, "Mapping the Miasma: Air, Health, and Place in Early Medical Mapping," *Cartographic Perspectives*, no. 52 (2005): 4-27; Lori Jones, "The Diseased Landscape: Medieval and Early Modern Plaguescapes," *Landscapes* 17 (2016): 108-123; Lindsey B. Panel, "Viperous Breathing: The Miasma Theory in Early Modern England." Ph.D. diss (Western Texas A&M University 2016), <http://hdl.handle.net/11310/103>; Eva Horn, "Winds, miasma, pollution: Pathologies of the air as an environing medium," in *Environing Media*, ed. Adam Wickburg and Johan Gärdebo (London: Routledge, 2022), <https://doi.org/10.4324/9781003282891>

³⁵See, for instance: William H. Te Brake, "Air Pollution and Fuel Crises in Preindustrial London, 1250-1650," *Technology and Culture* 16, no. 3 (1975): 337-359; Todd A. Borlik, *Ecocriticism and Early Modern English Literature: Green Pastures* (New York: Routledge, 2010); Steven Mosley, "Environmental History of Air Pollution and Protection," in *The Basic Environmental History*, ed. Mauro Agnoletti and Simone Neri Seneri (New York: Springer, 2014), 143-169; Leah Knight, "Breathing Green: Airs, Pollution, and the Green Solution," in *Reading Green in Early Modern England* (London: Routledge, 2014), 37-60; William M. Cavert, "Airs: smoke and pollution, 1600-1775," in *The Smoke of London: Energy and Environment in the Early Modern City. Cambridge Studies in Early Modern British History* (Cambridge, UK: Cambridge University Press, 2016), 32-40; Zümre Gizem Yılmaz Karahan, "Airy Agency in Early Modern English Drama: Ho Trilogy," *English Studies* 101, no. 5 (2020): 537-549.

³⁶Additional studies focused on air and atmosphere examine any combination of the above approaches in the later early modern or Victorian periods. See for instance: Gabrielle Walker, *An Ocean of Air: Why the Wind Blows and Other Mysteries of the Atmosphere* (New York: Houghton Mifflin Harcourt, 2008); Steven Connor, *The Matter of Air: Science and Art of the Ethereal* (London, UK: Reaktion Books, 2010); Jayne Elizabeth Lewis, *Air's Appearance: Literary Atmosphere in British Fiction, 1660-1794* (Chicago: University of Chicago Press, 2012); Ana Jones Abramson, "The Age of Atmosphere: Air, Affect, and Technology in Modernist Literature," Ph.D. diss., (University of California, Berkeley: 2016), <https://escholarship.org/uc/item/8kt2x5jh>; Derek P. McCormack, *Atmospheric Things: On the Allure of Elemental Envelopment* (Durham, NC: Duke University Press, 2018); Rowan Rose Boyson, "Air and atmosphere studies: Enlightenment, phenomenology and ecocriticism," *Literature Compass* 19, no. 1-2 (2022): e12654.

air in the early modern period serves a similar function with their own contemporary concerns.

In a practical sense, discussions of early modern air are related to theoretical discussions of verticality. Modern theorizations of verticality emerged in force in the 20th century, as industrialization created the ability to build higher buildings and to create airpower that moved warfare and commerce into the airspace. This type of airspace can best be summed up by Michel Foucault's observation about verticality in the context of prison space: "the vertical is not one of the dimensions of space, it is the dimension of power."³⁷ While examining the cultural background of skyscrapers, architectural critic Joseph J. Korom writes that to "build tall was defiant. It was risky and it was scary but inherent in these anxieties was the conquering of *height* itself."³⁸ Korom expressly connects verticality to human exceptionalism: technological power is needed to build high, but height is also a symbol of power. Political geographer Alison J. Williams turns to the inter-war period of the early twentieth century as a ripe place to begin assessing the cultural politics of verticality: in other words, how verticality interacts with terrestrial social systems, as I discussed in this chapter's first section. They write that the concept of "sky" denotes a culturally constructed space,³⁹ and that "airspaces can be thought of as

³⁷Michel Foucault, "The Force of Flight." *Space, Knowledge and Power: Foucault and Geography*, ed. Jeremy W. Crampton and Stuart Elden, trans. Gerald Moore (New York: Ashgate Publishing Limited, 2007), 170.

³⁸Joseph J. Korom, *The American Skyscraper, 1850-1940: A Celebration of Height* (Wellesley, MA: Branden Books, 2008), 15.

³⁹Alison J. Williams, "Reconceptualising spaces of the air: performing the multiple spatialities of UK military airspaces," *Transactions of the Institute of British Geographers*, 36 (2011): 257.

‘matter’ performed and enacted through iterative and citational speech and text acts of those in positions to affect change.”⁴⁰ While Williams also acknowledges the inevitable relationship between human culture and the airy environment, their theorization accounts for the way that humanity imposes cultural meaning onto this space via rhetorical acts of those in positions of power.

Geographer and political ecologist Bruce Braun also acknowledges the way that “vertical territory” becomes culturally constructed. However, he traces this phenomenon back to the 1800s and the early crystallization of the field of geology in the period, specifically the activities of the Geological Survey of Canada. Braun discusses the relationship between “*geological* ways of seeing nature” and the “social construction of nature,” and how this complex relationship “brings into view the 'verticality' of the state's territory.”⁴¹ Braun’s work highlights the activity of Canadian geologists several years after its coalition into the Dominion of Canada and its acquisition of its westernmost province, British Columbia. His work thus provides a link between concepts of expanding horizontal geographies and a desire to map—and perhaps, stratify or own—vertical airspace in order to accumulate imperial state power.

These extant works on verticality highlight the inevitable cultural, political, and even imperial concerns that become mapped onto engagements with vertical environments. The aerial environment becomes a plane onto which societies can both

⁴⁰Ibid., 259.

⁴¹Bruce Braun, “Producing vertical territory: geology and governmentality in late Victorian Canada,” *Ecumene* 7, no. 1 (2000): 7, 9, 13.

inscribe and reassert social and political power. They also all seriously engage the relationship between scientific or technological innovation alongside the phenomenon of society using the airy plane as a site on which to map larger socio-political concerns: I echo this two-pronged consideration, first in my discussion of the technology and science of the hippogriff, and then in my discussion of the socio-political vertical stratification of Ruggiero and Astolfo on the aerial plane, which they can only access at all because of the hippogriff's power. When considering the vertical plane in *Orlando Furioso* however, critics demonstrate a tendency to minimize serious discussion of the scientific or technological elements of flight that my chapter discusses. For instance, when discussing the poem's thorough description of the biology of the hippogriff, Renaissance scholar and poetic theorist Danial Javitch writes that the "insistence about the real existence of this fabulous creature [...] and the precise explanation of its hybrid features only serve to highlight its fantasticalness and, by extension, the fictive nature of the entire episode."⁴² Similarly, Italianist Daniel Leisawitz writes that the hippogriff as a creature is "completely fantastical, and yet one that the narrator insists is real."⁴³ The same type of approach is often taken to discussions of the aerial and moon spaces: early modern Italian literary scholar Ita Mac Carthy calls them "fantastic places" that are "not so much a cosmological reality"⁴⁴ but a site of allegory.⁴⁵

⁴²Javitch, "The Advertizing of Fictionality," 107.

⁴³Leisawitz, "Ironie Geography," 386.

⁴⁴Ita Mac Carthy, "Ariosto the Lunar Traveller," *The Modern Language Review* 104, no. 1 (2009): 71, 73.

⁴⁵See also: Leisawitz, "Ironie Geography."

The current chapter, however, is explicitly concerned with the science of air travel and the politics of verticality. This slight departure in emphasis from my previous chapters, which were focused on material aspects of environments, is designed to address ongoing ideologies of extraction that manipulate or appropriate extreme environments for the sake of terrestrial authority or control. This chapter continues in the spirit of these previous chapters by resisting the immediate allegorical or symbolic reading of ecological or environmental phenomena, instead giving serious interpretive weight to potential biological and scientific inspirations.

It is undeniable that the air travel of Ruggiero and Astolfo is speculative, but dismissing Ariosto's biological innovation of the hippogriff and the air travel it facilitates as what Albert Russel Ascolti calls "poetic fantasy,"⁴⁶ I argue, does an injustice to the potential of literary speculation to engage scientific paradigms. While air and air travel might sit on the edge of these discussions, it does not sit outside them. Air, Mazzio argues, leads us to a place where "the limits of instrumentality" are exposed and "become a manifest problem with which to be reckoned."⁴⁷ Ironically, while air is much less physically tangible than the material of my second chapter, sea water, it is arguably the subject of far greater "reckoning" in the early modern imagination: despite the limitations of human technology and instrumentality the element of air exposes, in a practical sense, air travel seemed much more likely to early modern thinkers than deep sea travel.

⁴⁶Ascolti, *Ariosto's Bitter Harmony*, 256.

⁴⁷Ibid., 162.

Considering this, I ask: what if we approached the aerial flight in *Orlando Furioso* not as fantasy, but as science fiction?⁴⁸

Nina Englehart writes that science fiction is, by definition, “set at a distance from the reader’s empirical experience”⁴⁹—a space conceptually related to what Mazzio identifies as air’s place at “the limit point of mediated knowledge.”⁵⁰ John Reider suggests that “the Copernican shift from a geocentric to a heliocentric understanding of the solar system provides a crucial point where the ancient plot of the marvelous journey starts becoming something like science fiction.”⁵¹ As a late representation of air travel in the Ptolemaic view of the universe, I argue that *Orlando Furioso* contains aspects of science fiction that anticipates this turn, further substantiating the poem’s popular translation later, in the Copernican world. What *Orlando Furioso* has in common with post-Copernican science fiction, however, is the new influence of colonial entry into the American continents.

In terms of early modern “science fiction,” especially that which is set onto a vertical plane, imbued as it is with registers of power, this becomes a key factor when considering the ideologies science fiction frameworks are employed toward. Reider

⁴⁸ For more on the fantastic elements of science fiction, see Brian Attebery, “The Fantastic,” in *The Oxford Handbook of Science Fiction*, ed. Robert Latham (Oxford UK: Oxford University Press, 2014), 127–138.

⁴⁹ Nina Engelhardt, “‘Real Flight and Dreams of Flight Go Together: High Technology and Imaginary Heights in Early Modern and Postmodern Science Fiction,” *Space and Culture* 23, no. 4 (2020): 383.

⁵⁰ Mazzio, “History of Air,” 153–4.

⁵¹ John Reider, *Colonialism and the Emergence of Science Fiction* (Middletown, CT: Wesleyan University Press, 2012), 1.

argues that “[e]mergent English-language science fiction articulates the distribution of knowledge and power at a certain moment of colonialism's history.”⁵² For Ariosto, a fan of Christopher Columbus’ journals, this articulation happens upon the vertical plane, as he imagines new global strata to access, new creatures that might facilitate this access, and how different types of people with different registers of authority might be granted access to this space. In terms of mapping science fiction projections of colonial ideology onto the vertical plane, it is helpful to consider Adam Roberts’ assertion that “the ur-form of the science fiction text is ‘a story about interplanetary travel.’”⁵³ Aerial travel, an originary SF form, becomes the register used by Ariosto to imagine contemporary distributions of knowledge and power. In terms of terminology used to discuss space/air travel, Roberts posits that “it misrepresents this sort of ur-SF to see ‘journeys to the Moon’ as belonging to a category separate from ‘journeys into the air’ more generally conceived. The Moon is seen by many writers as being ‘in the air’, in the same realm as the Sun, stars, clouds, and birds.”⁵⁴ For this reason, I often group Ruggiero’s “atmospheric travel” and Astolfo’s “moon travel” under the same term, “air travel,” undertaken throughout the same substance (at least initially), “air space.”⁵⁵

⁵² Ibid., 3.

⁵³ Adam Roberts, *The History of Science Fiction* (New York: Palgrave Macmillan, 2006), 50.

⁵⁴ Ibid., 23.

⁵⁵ At appropriate moments—particularly when Astolfo crosses the realm of fire, which early modern thinkers envision as sitting atop the air—I differentiate by using the terms moonspace or space travel.

Sherryl Vint writes that one primary critical vein in science fiction studies suggests that “SF embraces the *values* rather than the *facts* of science.”⁵⁶ She extrapolates, writing that by “embedding projected scientific breakthroughs or novel technologies within a full world, the best SF makes visible the considerable influence of the broad set of discourses, practices, and beliefs called ‘culture’ on science.”⁵⁷ In terms of considering *Orlando Furioso*’s air travel under the umbrella of “science fiction,” it thus behooves us to examine some recent work done on the intersection between scientific and literary thought in the early modern period. Claire Preston calls the fantastical “mythemes” of classical literature “improbable but fetchingly plausible moments that shape the story of empirical and technological discovery to conform to received patterns of narrative.”⁵⁸ This observation tracks startlingly well with the received role of the classics in the *Furioso*. Ladina Bezzola Lambert for instance discusses how travel in the *Furioso* “becomes creative even while depending on old and familiar material.”⁵⁹ Similarly, Alessandro Marignani writes that *Orlando Furioso* “intended to be innovative (even experimental) and at the same time to be deeply rooted

⁵⁶Sherryl Vint, “The Culture of Science,” in *The Oxford Handbook of Science Fiction*, ed. Robert Latham (Oxford UK: Oxford University Press, 2014), 307.

⁵⁷*Ibid.*, 310.

⁵⁸Claire Preston, *The Poetics of Scientific Investigation in Seventeenth-Century England* (Oxford, UK: Oxford University Press, 2015), 5.

⁵⁹Ladina Bezzola Lambert, “How Metaphors Matter,” 29.

in literary and cultural tradition,”⁶⁰ and that Ariosto himself was both “a classicist and a vanguard.”⁶¹

Not only was Ariosto deeply knowledgeable about the classical and medieval “mythemes” he draws from for his epic, he was also deeply knowledgeable about—as Marignani writes—how “scientific knowledge was enriched by new discoveries” and how the “epistemological coordinates of Western thought had themselves irreversibly changed” in his contemporary moment, irrevocably altering “the space of knowledge and the space of imagination.”⁶² Leisawitz observes that Ariosto reflects his knowledge of these changes in the “expansive and meticulous geography” of his epic.⁶³ However, Preston argues that the “literary” does not “occupy a merely modal relation to the primary empirical discourse, to promote the power of that ambition: it is inseparable from it.”⁶⁴ While Ariosto’s engagement with the dominant empirical discourse of his day is indeed reflected in the wide-ranging geography of the *Furioso*, I also want to stress what Preston calls the “mutually influential relationship between literary and scientific expression,”⁶⁵

⁶⁰Marignani, “Il Piacer Ch'avea Di Gire,” 189.

⁶¹Ibid., 191.

⁶²Ibid., 189. For the definitive studies in Ariosto’s knowledge of the new boundaries of exploration in his contemporary time, see: Alexandre Doroszlaï, *Ptolémée et l'hippogriffe* and Alexandre Doroszlaï, “Les sources cartographiques et le Roland Furieux.”

⁶³Leisawitz, “Ironie Geography,” 369 fn9.

⁶⁴Preston, *The Poetics of Scientific Investigation*, 17.

⁶⁵Ibid., 8.

to consider the ways in which what is usually considered “fantasy” in Ariosto’s opus may, in fact, be science fiction.

Debapriya Sarkar discusses the way in which early modern “writers and thinkers became fascinated by the capacious domain of the ‘possible’.”⁶⁶ Sarkar complicates traditional conceptualizations of the relationship between literature and science by positing that “knowledge is understood as that which is conceivable rather than verifiable or certain [...] premised not on what was ‘thought’ but on what was ‘thinkable’”⁶⁷—echoing and expanding on Preston’s formulation of what is “improbable but fetchingly plausible.”⁶⁸ I argue that literary air travel is the ideal site to approach via this epistemology, since in the early modern period it is by definition only “thinkable,” and yet it is also undeniably thought *about*.

When discussing the writing of the ancient Greek philosopher Plutarch, Roberts writes that “Plutarch’s fantasy is a way of doing science via elaboration and invention, which is to say, it is SF.”⁶⁹ As both a “classicist” and a “vanguard,” this is the type of science fiction enacted by Ariosto as well. Ariosto takes the “mythemes” of classical

⁶⁶Debapriya Sarkar, *Possible Knowledge: The Literary Forms of Early Modern Science* (Philadelphia: University of Pennsylvania Press, 2023), 1.

⁶⁷*Ibid.*, 21.

⁶⁸Preston, *The Poetics of Scientific Investigation*, 5.

⁶⁹Adams, *The History of Science Fiction*, 26. Interestingly, Adams definitively disagrees with including the *Furioso* under his collected list of “ur-SF.” He writes that “Astolfo does not genuinely travel to another planet: he journeys (with divine sanction, and under the chaperonage of Saint John) to the limit of the material realm” (35), which apparently is a disqualifying characteristic. On this point I vehemently disagree; I also do not confine the *Furioso*’s SF attributes solely to the air travel, but to the creation of the hippogriff as well, as I will go on to describe.

fantasy and transforms them into sixteenth-century science fiction via the figure of the hippogriff, the organic entity that enables Ruggiero and Astolfo's air travel. The hippogriff is introduced as the flying steed of Ruggiero's foster-father, the African sorcerer Atalante. Atalante had been Ruggiero's guardian since his "tenderest years" (IV.30).⁷⁰ After consulting the stars, Atalante foresaw that "by a traitor's hand [Ruggiero will] meet his death" (IV.29).⁷¹ Unbeknownst to Ruggiero, he built a fortress to keep his foster son safe and began to capture waylaid knights and ladies to keep Ruggiero company. The character of a "dwarf" tells Ruggiero's beloved Bradamante, a female knight, that when Ruggiero and another knight, Gradasso, came upon Atalante's castle with intent to liberate its captives, Atalante appeared "Astride a bird-like quadruped, a new / Unheard-of means of transport" (II.46).⁷² Ariosto's *il quadupede augello*,⁷³ translated here as "a bird-like quadruped," follows from the Latin *aucellus*, little bird. This diminutive form gives a sense of proximity to more recognized organic life forms. Ariosto continues to appeal to proximate comparisons and simile when describing the hippogriff's abilities. The man with dwarfism continues,

Little by little [the hippogriff] begins to rise,
Just as a crane from foreign lands will do,
Which, running rapidly at first, then flies,

⁷⁰Ludovico Ariosto, *Orlando Furioso Part One*, trans. Barbara Reynolds. Penguin Books, 1973. All English quotations are from Barbara Reynolds' two volume translations. Text will be cited in-paragraph by canto and verse number, with a corresponding footnote indicating volume and page number.

⁷¹*Ibid.*, 185.

⁷²*Ibid.*, 149.

⁷³Italian selections from: Ludovico Ariosto, *Orlando furioso*, ed. E. Sanguinetie M. Turchi (Milan, Italy: Garzanti, 1964), 44.

Leaving the ground about a yard or two;
Then in the freedom of the air it tries
Its wings, faster and faster, till from view
It's lost. So does the necromancer soar
As high as eagle ever flew, and more. (II. 49)⁷⁴

Here, Ariosto begins to describe the hippogriff by comparing it to another, more familiar—though notably still “foreign”—animal, the crane. Scholarship on early modern animal metaphors is prolific, but focused almost entirely on moments in which animal metaphors are used to describe humans. As Bruce Boehrer’s seminal work *Shakespeare Among the Animals: Nature and Society in the Drama of Early Modern England* shows, comparisons in this context cover a range of significations about the human cultural order, ranging from a generalized metaphorical commentary on “inward states and outward behavior” to specific religio-political commentary on “race, nationality, and ethnicity.”⁷⁵ Erica Fudge also addresses the way that early modern writers used animals as “humanity’s other” in complex ways, to explore the phenomenon of “being human.”⁷⁶ Notably, these representative works in early modern animal studies specifically concern how animals and animal metaphors become a signifier for aspects of human identity.

Ariosto’s animal similes here are unique in that they are used to describe the characteristics of a different animal species. Far from becoming a comparison used to

⁷⁴Reynolds, *Part One*, 150.

⁷⁵Bruce Boehrer, *Shakespeare Among the Animals: Nature and Society in the Drama of Early Modern England* (New York: Palgrave Macmillan, 2002), 26.

⁷⁶Erica Fudge, *Brutal Reasoning: Animals, Rationality, and Humanity in Early Modern England* (Ithaca, NY: Cornell University Press, 2019), 2.

reflect the “other”-ness of a human character, these animal-to-animal similes cast the “new, unheard of means of transport” within recognizable animal frameworks. Miguel de Asúa and Roger French have argued that “what Columbus ‘saw’ in the New World was informed by the late medieval worldview” of fantastic animals belonging to books Columbus kept in his library, such as *The Travels of Marco Polo*.⁷⁷ Indeed, the eventual air travel itineraries of Ruggiero and Astolfo are directly inspired by the journeys of both Christopher Columbus and Marco Polo respectively,⁷⁸ indicating Ariosto’s great familiarity with writings from both men. De Asúa and French continue that the proliferation of new animals discovered in the Americas also introduced serious consideration of the idea that “Old World fantastic creatures”⁷⁹ might not be fantasy, but a biological reality now conceivable within what European writers considered an expanded world geography.

By casting a “fantastic” creature like the hippogriff through the lens of animal simile, Ariosto provides his readers language by which to read the—potentially—biological reality of this creature. Ariosto has chosen his metaphors wisely. His first image is that of *la perigrina grue*⁸⁰—a bird from the family *Gruidae* (cranes), with the adjective *perigrina*, signaling traveling or migratory patterns, perhaps foreshadowing the

⁷⁷Miguel de Asúa and Roger French, *A New World of Animals: Early Modern Europeans on the Creatures of Iberian America* (New York: Ashgate Publishing, 2005), 5.

⁷⁸See: Doroszlaï, *Ptolémée et l’hippogriffe* and Doroszlaï, “Les sources cartographiques et le *Roland Furieux*.”

⁷⁹Asúa and French, *A New World of Animals*, 42.

⁸⁰Turchi, *Orlando furioso*, 45.

hippogriff's role as a global circumnavigator in cantos to come. The characteristic long legs of the crane necessitate that the animal "run," in a fashion, using the height afforded by its legs to begin to flap its wings, gathering speed before pushing off the ground with the power of its legs and slowly gaining altitude. This image Ariosto describes tracks well onto the idea of a hippogriff, with the long legs of a horse to provide it with the speed needed to facilitate its lift-off. Ariosto further describes how Atalante "turned his horse's head, / With pinions closed, it hurtled from above, / As when a well-trained falcon drops like lead" (II.50).⁸¹ Furthering his readers' understanding with recognizable metaphors, he describes the diving motion of a falcon, who presses *i vanni*,⁸² its wings, close to its body to increase its speed as it undertakes its characteristic "stoop dive," the high-speed strike that makes it the fastest bird in the world. These animal metaphors thus become grounding elements that instruct the reader's interpretation of an "unheard of" creature—even this phrase and its Italian original, *inusitata e nuova*,⁸³ unusual and new, suggest that this creature is more *possibility* than fantasy, on the precipice of discovery rather than a fanciful interpretation of ancient, mythological sources.

Ariosto seems to realize that his hippogriff may seem like a fantastic element and goes to further pains to discuss the creature as an ecological, biological reality. In addition to simply assuring his reader that "fiction is less marvellous than fact" (II.54),⁸⁴

⁸¹Reynolds, *Part One*, 150.

⁸²Turchi, *Orlando furioso*, 45.

⁸³Ibid., 44.

⁸⁴Reynolds, *Part One*, 151.

he discusses the creation of the animal through what we today recognize as the genetically complex phenomenon of selective breeding. Though no formal knowledge of genetics would circulate until Gregor Mendel's theories in the nineteenth century, Ariosto clearly demonstrates proficient knowledge of biological heredity. He describes how Atalante's

horse was not a fiction, but instead
The offspring of a griffin and a mare.
Its plumage, forefeet, muzzle, wings and head
Like those of its paternal parent were.
The rest was from its dam inherited.
It's called a hippogriff. Such beasts, though rare,
In the Rhiphaean mountains, far beyond
The icy waters of the north, are found. (IV.18)⁸⁵

Ariosto writes that the hippogriff is not *finto*, fake or artificial, but *naturale*.⁸⁶ Ariosto's formulation of the hippogriff aligns with what Robert A. Heinlin calls the "extrapolation" mode of science fiction, wherein a text "explor[es] a trend [...] continu[es] a curve, a path, a trend into the future, by extending its present direction and continuing the shape it has displayed in its past performance."⁸⁷ Ariosto takes a fantastic animal, the griffin, itself a cross between a lion and an eagle, and imagines the offspring that would result in its reproduction with a mare. As de Asúa and French have found, griffins were indeed one of the new species reported to have been "discovered" in Columbus's logs.⁸⁸ Thus, it

⁸⁵Ibid., 182.

⁸⁶Turchi, *Orlando furioso*, 86.

⁸⁷Robert A. Heinlein, "Pandora's Box," in *Turning Points: Essays on the Art of Science Fiction*, ed. Damon Knight (New York: Harper & Row, 1977), 238.

⁸⁸Asúa and French, *A New World of Animals*, 7.

is immensely conceivable that a reader of these logs might appropriate a creature formerly considered “fantasy” into new, extrapolated “science fiction” literary formulations that predict scientific possibilities resulting from these discoveries. Ariosto goes on to very specifically list which genetic traits have been passed on from each of the hippogriff’s parents, to facilitate the reader’s mental image of this new creature. Its plumage, forefeet, muzzle, wings and head are inherited from its paternal griffin: this means that, like an eagle, it is feathery especially in its wings and head and retains an eagle’s talons and beak, while it has the head shape, chest, and fore legs (therefore front body structure) of a lion. Its back, tail, rear legs and hooves are all those of its maternal parent, a horse.

In addition to dipping back into Ancient Greek lore for the hippogriff’s paternal ancestor, Ariosto does so again for his literary invention’s place of origin. He summons the image of the Riphean Mountains, a mountain range that the Ancient Greeks and Romans purported were north of Europe and Asia, at the northernmost edge of the knowable world. Ariosto’s description is consistent with this, as he describes a land that exists “beyond” the icy waters of the Arctic Ocean. While medieval Greenlanders certainly explored the waters above the two continents, the early sixteenth century saw the rest of Europe beginning to explore this region for the so-called “Northern Passage” to east Asia. English explorer Richard Chancellor, for instance, would not become the first to access the White Sea north of Russia until 1553, roughly two decades after the last version of *Orlando Furioso* was published. At the time of writing, the geographies north of Europe and Asia were still very much unknown. Writing as he was in what Marignani

calls “a world whose limits had exploded,”⁸⁹ it is easy to see how Ariosto might reasonably have chosen this location for his newly invented species.

Ariosto’s “technology” of flight, the hippogriff, thus sits at a critical balancing point between ancient literary inspiration and hyper-contemporary biological discovery. It is worth mentioning that Ariosto’s patrons had a vested interest in the biological science of breeding: an interest which could—and did—lead them into what twenty-first century readers would consider ethically reprehensible waters. The husband of Ariosto’s patroness, Isabella d’Este, was Francesco II Gonzaga, Marquis of Mantua. Cooley writes that Gonzaga prided himself on his carefully bred lineages of “Turkish horse,” selectively bred and prized for their “size, speed, and exotic origins.”⁹⁰ Breeding horses for selective traits was an ancient practice. The advent of chariot riding in Ancient Greece necessitated selective breeding for certain physical traits that humans could subsequently exploit for their own purposes.⁹¹ While Ancient Greek and Roman practices of selective breeding largely fell away between the fifth and thirteenth centuries, by the thirteenth century onward, Europeans had begun to again engage in what Sandor Bökönyi calls “conscious animal husbandry.”⁹²

⁸⁹Marignani, “Il Piacer Ch’avea Di Gire,” 189.

⁹⁰Mackenzie Cooley, *The Perfection of Nature: Animals, Breeding, and Race in the Renaissance* (Chicago: Chicago University Press, 2022), 86.

⁹¹See: Weronika Klecel and Elżbieta Martyniuk, “From the Eurasian Steppes to the Roman Circuses: A Review of Early Development of Horse Breeding and Management,” *Animals* 11, no. 1859 (2021), <https://doi.org/10.3390/ani11071859>

⁹²Sándor Bökönyi. “The Development of Stock Breeding and Herding in Medieval Europe” in *Agriculture in the Middle Ages: Technology, Practice, and Representation*, ed. Del Sweeney (Philadelphia: University of Pennsylvania Press, 2016), 54.

While Gonzaga's specific interest was that of the "Turkish horse," Cooley describes that in early sixteenth century Mantua at large, "all possible experiments were tried, in order to produce the most perfect animals."⁹³ The "ancient art of selective breeding" was appropriated for contemporary cultural concerns, and this practice in turn "influenced authors of books that theorized reproduction, taxonomy, and natural history."⁹⁴ It is easy to see how, in this patronage environment, Ariosto may have been compelled to draw upon ancient literary tropes, in combination with influence from contemporary geographical "discoveries" and contemporary experiments in heredity, to create his own literary-biological invention.

Ariosto's patron herself, Isabella d'Este, was inspired by her cultural climate in an extremely ethically compromised way. Isabella cultivated what she called her *raza delli nanini*, her "race of little dwarves" that she, in essence, enslaved in the Mantuan court. Cooley describes how, in a letter to a friend, Isabella describes a "carefully crafted human two-year-old, a gift that would demonstrate the wonders she was creating in the Gonzaga court of Mantua."⁹⁵ Isabella forcibly bred people with dwarfism for what she considered traits of "domesticity and infantility."⁹⁶ While Ariosto initially wrote for Isabella's brother Ippolito at the court of Ferrara, he lauds Isabella multiple times by name in the *Furioso*, would read portions of the early version of his work to her in court, and

⁹³Cooley, *The Perfection of Nature*, 77.

⁹⁴Ibid., 77-8.

⁹⁵Ibid., 82.

⁹⁶Ibid., 86.

maintained a long-term and lengthy correspondence with her for years, including sending new versions of every edition of *Orlando Furioso*.⁹⁷ As Lisa K. Regan writes, Ariosto's patronage at the initial writing of the *Furioso* was dubious at best, as Ippolito refused to employ him solely as a poet and used him continually for diplomatic work, a move that garnered "enormous resentment."⁹⁸ Ariosto's resentment and refusal to take on more diplomatic missions eventually resulted in Ippolito dismissing him; he was then hired by Isabella's uncle, Alfonso d'Este, where his state of patronage was somewhat more steady for three years before Ariosto was again dismissed in 1520 due to insufficient funds.⁹⁹ In this climate of unstable patronage, Regan thus suggests that Ariosto viewed Isabella as a "threshold patron," someone whose graces he actively nurtured in order to secure a patronage with the more affluent Mantuan branch of the family.¹⁰⁰

Isabella cultivated a *grotta* full of carefully curated works. Among these, unfortunately, were people with dwarfism, which she considered, as Cooley describes, "living exotica prized in a culture transfixed by the wondrous."¹⁰¹ Further, Isabella's "sense of entitlement to human bodies came from the animal culture that distinguished court life."¹⁰² Ariosto's literary-scientific creation, the hippogriff, is assuredly an

⁹⁷See Lisa K. Regan, "Ariosto's Threshold Patron: Isabella d'Este in the *Orlando Furioso*," *MLN* 120, no. 1 (2005): 50-69.

⁹⁸*Ibid.*, 52.

⁹⁹*Ibid.*, 52.

¹⁰⁰*Ibid.*, 50-51.

¹⁰¹Cooley, *The Perfection of Nature*, 85.

¹⁰²*Ibid.*, 86.

amalgam of—to borrow Sarkar’s term—“possible knowledge,” but it also possibly uses this knowledge to appeal to Isabella’s demonstrated fascination with what she considered “wondrous” creatures. Ariosto observes the geographic and biological possibilities of his contemporary moment and generates new possibilities within his imagined world of chivalric epic. However, the context of Isabella’s unethical and potentially eugenicist form of “selective breeding” in her court makes it impossible to divorce Ariosto’s “science fiction” from larger cultural conversations of what Cooley calls *razza-making* in sixteenth century Mantua. This speaks to what Sarkar acknowledges as “the awful side of possible knowledge,” wherein “the created worlds of poesy offer models that incite the destructive practices of colonization.”¹⁰³ As I will go on to explain in the next section, the flight offered by the creation of the hippogriff reflects burgeoning imperial hierarchization and nascent colonial racialization into the vertical realm. The new environments opened up to access by this creature are thus immediately subsumed into existing hegemonic cultural registers.

More modern science fiction self-consciously explores the limits of questions of medical and scientific ethics. It would be incorrect to assume that Ariosto does the same, but before attending to the actual air journeys of Ruggiero and Astolfo, I wish to briefly mention what comes of the hippogriff at the poem’s end. After it has served its narrative purpose in facilitating Astolfo’s access to terrestrial paradise and across the continents of Europe, Asia, and Africa, where he built a company to daunt “seven Africas”

¹⁰³Sarkar, *Possible Knowledge*, 21.

(XXXIX.25)¹⁰⁴ and slaughtered innumerable people *en masse*, he recalls a provision set by St. John. After Astolfo's primary goals had been accomplished, "St John had said that when he reached Provence / He must no longer ride the wingèd horse, / But lighten it of all accouterments / And set it free upon its chosen course" (XLIV.25).¹⁰⁵ Francine McGregor has written that the attention to bridling in late medieval romance onward "suggests that horses have developed rationality, will, and intelligence."¹⁰⁶ I will go on to more fully discuss the bridling of the hippogriff in the next section, as difference in bridling practice is important to the way the poem hierarchizes Ruggiero and Astolfo in the vertical airspace, but for now I wish to call attention to the larger ethical implications of bridling.

In the next century, Rene Descartes would propose the idea of the *bête-machine*, in which he proposes that animals are essentially an assemblage of mechanical pieces devoid of will, feeling, or consciousness. While the implications of bridling—that there is some rationality and intelligence that humans need to gain control over—certainly suggests the opposite viewpoint, the event of the hippogriff's divinely sanctioned release suggests the opposite even more starkly. Ariosto goes out of his way to close the narrative loop on the hippogriff's story when he just as easily could have let the animal fade into the narrative distance. Astolfo "must no longer ride" it, a turn of phrase that

¹⁰⁴Ludovico Ariosto, *Orlando Furioso Part Two*, trans. Barbara Reynolds (London: Penguin Books, 1977), 439.

¹⁰⁵Reynolds, *Part Two*, 585.

¹⁰⁶Francine McGregor, *Equine Medicine and Popular Romance in Late Medieval England* (Leiden: Brill, 2023), 71.

hints at the potentially oppressive circumstance the hippogriff recently found itself in, forced via its saddle and bridle—its “accouterments”—to enact the bidding of its riders. The hippogriff becomes free to pursue its “chosen course,” suggesting its ultimate right to autonomy. This conclusion to the hippogriff’s story compels the reader to ask questions about the ethics of phenomena like “selective breeding,” which does not create objects, but autonomous individuals with full and vibrant interiority.¹⁰⁷ Importantly however, the hippogriff’s freedom is conditional: only after it has been made narratively useful can it be released. Despite this cursory exploration of the rights of all creatures to freedom and autonomy, the poem ultimately exploits the hippogriff’s abilities to enact its politics of vertical access and its violent terrestrial aftermath. The poem thus undermines self-determination by demanding that characters—here, the hippogriff, and later, Astolfo and Ruggiero themselves, via the hippogriff—be ‘of use’ within larger narrative and cultural structures.

¹⁰⁷This is, of course, not to mention the clear eugenicist logic that discussions of “selective breeding” can lead one toward—a matter that Isabella d’Este’s actions engage with deeply. Part of the ethical slipperiness of such discussions lies in how easily they become tools of dehumanization and violence. Cooley suggests that Isabella’s personal writings meditate on how “selective breeding did not prohibit personhood, but complicated the line between exotic object and agentive individual” (83). This ambiguous inquiry into full personhood absolutely anticipates larger burgeoning colonial discourses of eugenics, which would proliferate in early America, as inquiries into genetics and heredity became tools to further the aims of white supremacist ideologies. However, this is also the inevitable cultural climate in which Ariosto was writing.

Stratified Access and Extractive Potential: Ruggiero and Astolfo's Air Travel

Francine McGregor has written that there is a “connection between equine bodies and physical distance.”¹⁰⁸ In Ariosto's sixteenth-century world of seemingly expanding physical distance, a new kind of equine body was needed to span it: that of the hippogriff, as I discussed throughout the previous section. The science of Ariosto's hippogriff aligns with what Heinlein has called “extrapolation,” a version of science fiction which builds on real-world knowledge and technology. The hippogriff opens a new plane to the human characters of *Orlando Furioso*: extrapolation thus bridges into a second primary form of science fiction, “speculation,” which “starts with a ‘What if?’—and the new factor thrown in by the what-if may be both wildly improbable and so revolutionary in effect as to throw a sine-curve trend [...] into something unrecognizably different.”¹⁰⁹ *What if* a new animal selectively bred from a mythological creature Columbus' journals describe as living in the Americas allowed humans to take to the air? The extrapolative science fiction of the hippogriff thus becomes the speculative science fiction of air, and even space travel.

The hippogriff thus, in practice, allows characters to achieve an “aerial view”: a perspective I have discussed through the lens of extraction in previous chapters. I have previously discussed Macarena Gomez-Barris' conceptualization of the extractive view,

¹⁰⁸McGregor, *Equine Medicine*, 71.

¹⁰⁹Heinlein, “Pandora's Box,” 239.

which “sees like a satellite from above,”¹¹⁰ as it organizes land into extractible data to “completely map and commoditize the landscape from above.”¹¹¹ In my first chapter, I discussed how Dante enacts this extractive view as he oversees the landscape of *Inferno*. In *Orlando Furioso*, the aerial extractive view becomes literalized as Ruggiero and Astolfo take flight, surveilling, cataloging, and quickly traversing the land below. In this section, I argue that Ruggiero and Astolfo’s aerial access becomes contingent upon their ability to make this extractive viewpoint productive: that is, to mobilize their aerial view into “extractible data” that facilitates the aims of Charlemagne’s religious and nationalistic war being fought in the background of the poem.

The inequities and religio-racial hierarchization inherent in the different levels of aerial access narratively granted to Ruggiero and Astolfo has not yet been discussed, to the best of my knowledge. Generally, the two flights are discussed in relatively equal terms, as aerial correlatives of the famous exploratory routes of Christopher Columbus and Marco Polo.¹¹² Many discuss the expansive geographies covered by the *Furioso* (aerial and otherwise) in terms of mapping. Monica Farnetti has written about how, as a boy, Ariosto would “survey the world from the observatory in Malo, just north of Vicenza, and diligently proceed to describe it” in his writings.¹¹³ This youthful interest

¹¹⁰Macarena Gómez-Barris. *The Extractive Zone: Social Ecologies and Decolonial Perspectives* (Durham, NC: Duke University Press, 2017), 97.

¹¹¹*Ibid.*, 98.

¹¹²See for instance: Marignani ““Il Piacer Ch'avea Di Gire,” Ita Mac Carthy, “Ariosto the Traveller,” and Doroszlaï, *Ptolémée et l'hippogriffe* and “Les sources cartographiques et le Roland Furieux.”

¹¹³Monica Farnetti, “Ariosto: Landscape Artist,” 102.

would reiterate itself as a deep knowledge of the “cartographical knowledge of his time,”¹¹⁴ evident in his expansive yet extremely precise geographical explanations throughout the epic. Federico Italiano argues that Ariosto’s knowledge of geography and its representation in the *Furioso* was so great that “his epic can justifiably be defined as a literary inventory of the globe, a gazetteer of the planet earth.”¹¹⁵ Using its literary form, it parallels what Daniel Leisawitz identifies as “strategies adopted by the leading mapmakers of the age”: these strategies “were both innovative and conservative: incorporating information regarding recent discoveries within a depiction of the world that still relied heavily on traditional authorities.”¹¹⁶ Indeed, this parallels the observations about Ariosto’s literary and generic style I discussed earlier, as he becomes both “classicist” and “vanguard.”¹¹⁷

Perhaps needless to say, the primary goal of what Italiano calls the “institution” of early modern European mapping “was not only to organize and reproduce the valuable geographical knowledge that was flowing in from the oceanic expeditions undertaken by Spanish vessels, but also to filter and regulate it politically and economically.”¹¹⁸ The extractive view is thus inherent in representations of mapping technology, which are predicated upon the idea that this knowledge will prove materially useful to the map’s

¹¹⁴Italiano, “Translating the map,” 32.

¹¹⁵Ibid., 34.

¹¹⁶Leisawitz, “Ironie Geography,” 373.

¹¹⁷Lambert, “How Metaphors Matter,” 29.

¹¹⁸Italiano, “Translating the Map,” 34.

viewer, fulfilling either their birds-eye cataloging of the land or their ground-based incursions upon it, often driven by desires for land or material. Not only does the *Furioso* reproduce this view, but its generic characteristics themselves contribute to the way it “sees like a satellite from above,”¹¹⁹ to commoditize the landscape. Monica Farnetti writes how Ariosto’s technique of “highlighting” and “following” the poem’s dozens of subjects “foreshadows the cinematic use of ‘panning’ and ‘tracking’ by several centuries. By alternating these two techniques through the narrator—and ideal camera lens—he vividly portrays the fabulous characters and warring heroes in their daring feats, as well as the poem’s many extraordinary panoramas.”¹²⁰ Ita Mac Carthy writes that “[m]ultiple locations and a vast narrative canvas are, in effect, essential to accommodate the mobility of the epic romance heroes.”¹²¹ The narrator’s panoramic, birds-eye view that maps the world’s geographies, and the “panning” technologies that facilitate this, are indispensable tools of the “epic romance” genre, embedding concerns about the extractive view within the structure of narrative itself.

Thus, there is a complex relationship burgeoning between narrative structure, mapping technology, and the extractive view. I wish to take the scholarly consensus about *Orlando Furioso*’s literary representation of contemporary mapping and consider its vertical geographies via what Valerie Traub calls “the spatial plotting of cartographic

¹¹⁹Gómez-Barris, *The Extractive Zone*, 97.

¹²⁰Farnetti, “Ariosto: Landscape Artist,” 93.

¹²¹Mac Carthy, “Ariosto the Traveller,” 398.

bodies.”¹²² Traub discusses how depictions of bodies were increasingly positioned along “perpendicular axes along map margins,”¹²³ and that their positioning along these axes revealed larger ethnographic concerns. Along map margins, bodies were “spatialized on hierarchical coordinates, ordered according to physical and cultural differences,” a spatialization which “accord[ed] with an increasing tendency to view bodies as potentially classifiable objects of an epistemology organized according to ethnographic and gendered imperatives.”¹²⁴ This vertical hierarchization necessitated that figures be “[e]xtracted from the landscape and resituated as a vital element in ornamental borders,” in a move that “evoke[s] and reveal[s] the power of submitting social relations to a spatializing grid.”¹²⁵

Though many people discuss how Ruggiero and Astolfo’s flights open a vertical dimension to the *Furioso*’s geographies,¹²⁶ I wish to add to this conversation by discussing this vertical plane and its aerial view through the lens of Traub’s conceptualization of early modern mapping’s marginal “spatializing grid”: the hippogriff effectively extracts the two knights, Ruggiero and Astolfo, from the romance landscape, classifying them in the air on vertical, hierarchical coordinates according to their

¹²²Valerie Traub, “Mapping the Global Body,” in *Early Modern Visual Culture: Representation, Race, and Empire in Renaissance England*, ed. Peter Erickson and Clark Hulse (Philadelphia: University of Pennsylvania Press, 2000), 58.

¹²³*Ibid.*, 59.

¹²⁴*Ibid.*, 57.

¹²⁵*Ibid.*, 76.

¹²⁶See, for instance: Farnetti, “Ariosto: Landscape Artist,” Leisawitz, “Ironie Geography,” Marignani, “Il Piacer Ch’avea Di Gire.”

usefulness to Charlemagne's wartime enterprise (and the larger, early modern colonial enterprise it represents). Traub's observation about how cartographic bodies are mapped via their "physical and cultural differences" also holds true in Ariosto's poem, as the two knights' "usefulness" largely depends on qualitative factors designated as "inherent" to their religious and racial identities.

For much of the poem, for instance, Ruggiero fights for the forces of his cousin Agramante, Charlemagne's primary enemy. Ruggiero is biracial: on his mother's side, he is the grandson of the Muslim African king Agolante (who is also Agramante's grandfather), while on his father's side he is a descendent of "the ancient blood of Troy" (III.17).¹²⁷ Throughout the poem, attention is drawn to the prophecy that Ruggiero's union with the Christian female knight Bradamante is destined to generate a line of powerful Italian rulers, which will eventually lead to the family of Ariosto's patrons, the d'Este's. While Ariosto continually stresses what Elizabeth Spiller calls the "venerable" aspects of "Ruggiero's blood,"¹²⁸ the attention to "genealogical identity [...] tacitly affirms [Ruggiero's] racial difference."¹²⁹ Spiller concludes that Ariosto seems to acknowledge that "too much attention to Ruggiero's blood could make him racially suspect."¹³⁰ At one point, the narrator makes an aside that Ruggiero's "father,

¹²⁷Reynolds, *Part One*, 162.

¹²⁸Elizabeth Spiller, "The conversion of the reader: Ariosto, Herberay, Munday, and Cervantes," in *Reading and the History of Race in the Renaissance* (Cambridge, UK: Cambridge University Press, 2021): 122.

¹²⁹*Ibid.*, 123.

¹³⁰*Ibid.*, 122.

grandfather, and all that side / Of his great race were Christians” (XXII.35).¹³¹ Ruggiero’s heritage is thus somehow both overdetermined, as Ariosto insists on the “venerable” aspects of his family tree, and elided, as he subverts too much discussion of the hero’s heritage to draw attention away from his biracial identity.

Duke Astolfo’s lineage, on the other hand, comes without such determinations. He is “a paladin / Of France,” cousin to Rinaldo and the eponymous Orlando and “next in / Line as king of England” after his father (VI.33).¹³² I argue that we can read these men’s position in the airspace, and their control over the hippogriff that allows them access to this space, as a sort of “spatializing grid” rubricated by their racial and religious difference. The men are extracted from their landscapes to be hierarchized on this grid and are further delineated by their ability to be economically and narratively useful—that is, their ability to enact an extractive view themselves. Through the rest of this section, I will trace these differences between Ruggiero and Astolfo’s control over the hippogriff, and how this affects both their ability to preserve a cogent extractive viewpoint and their ability to enact the extractive view themselves: factors which relate to their vertical hierarchization.

Though the hippogriff is Ruggiero’s by inheritance—his foster father Atalante was the hippogriff’s original owner—he immediately struggles to control the animal, and thus to control his own position in the airspace. Secretly, the magician Atalante charged the hippogriff with a scheme to remove Ruggiero from Europe, presumably to save him

¹³¹Reynolds, *Part One*, 676.

¹³²*Ibid.*, 229.

from the prophecy Atalante heard. After Bradamante breaks the spell on Atalante's castle and Atalante flees, Ruggiero mounts the hippogriff and "reaches out to take the bridle / Meaning to lead it / But that thought is idle" (IV.45).¹³³ Even before the bridle is in his hands, Ruggiero's attempt to control the flight of the hippogriff is doomed. Of the hippogriff's own accord, it "canters for a while, then all at once / It takes the air and lighter far it soars / Than a gerfalcon rises when the hood / Is lifted, as the falconer thinks is good" (IV.46).¹³⁴ The irony in this newest animal metaphor, of course, is that the image of consummate human control over animal flight, the hooded falcon, is used to stress how little control Ruggiero has over the flight of the hippogriff.

When Ruggiero first mounts the hippogriff, he "Looks down upon the earth but cannot land on it, / His mount flies on and carries him so high" (IV.49).¹³⁵ Inexplicably, considering the text's instance on Ruggiero's proficiency as a paladin, he is unable to handle the hippogriff's bridle and, in turn, control his own position in the airspace. Not only can he not dictate where he ends up on the vertical plane, but Ruggiero loses the ability to appropriately map the land below him—thus, he loses the ability to catalog and commodify the land via his extractive panoramic view. The narrator dictates how "every peak recedes from view so far, / He cannot see where plains or mountains are" (IV.49).¹³⁶ Ruggiero loses perspective on the world below, no longer able to parse variations in

¹³³Ibid., 189.

¹³⁴Ibid., 189.

¹³⁵Ibid., 190.

¹³⁶Ibid., 190.

landscape. Italiano argues that this moment is Ariosto's way of signaling to readers "that we are going to experience a radical change of perspective due to the altitude gained by means of the hippogriff."¹³⁷ However, when Astolfo later takes to the air, he has no such loss in perspective: "Thus every town and region he surveyed / Between the sea and Atlas' tree-clad spine" (XXXIII.100).¹³⁸ Megan Uppinder writes, "A good trope for beginning a discussion of colonialism in science fiction is that of surveillance. There is little more powerful than a ship in orbit around one's planet to signal discovery and control."¹³⁹ Unlike Ruggiero, Astolfo embraces the orientation of his birds-eye view and capitalizes on the hippogriff's ability to grant him the power of surveillance. Astolfo's ability to survey and catalog the land from above remains intact, asserting his ability to preserve an extractive view in a way Ruggiero cannot.

Ruggiero is helpless to command the hippogriff until the enchantress Logisilla "orders the construction of a bit / By which he may control and master it" (X.66).¹⁴⁰

Further, she

[d]emonstrates what he must do if he
Desires the hippogriff to rise on high,
Circle or swoop, or travel rapidly,
Or on raised pinions hover in the sky.
As on the earth a rider one may see
On all his expert horsemanship rely. (X.67)¹⁴¹

¹³⁷Italiano, "Translating the Map," 40.

¹³⁸Reynolds, *Part Two*, 304.

¹³⁹ Megan Uppinder, "Teaching Postcolonial Science Fiction," in *Teaching Science Fiction* ed. Andy Sawyer and Peter Wright (New York: Palgrave Macmillan, 2011), 167.

¹⁴⁰Reynolds, *Part One*, 332.

¹⁴¹*Ibid.*, 332.

Ruggiero, who the reader until now had been told was already an “expert horseman” “on the earth,” receives what Italiano calls “a seminar in flying” from Logisilla.¹⁴² After Ruggiero has undertaken this seminar, he is able to conduct a marvelous feat. Anticipating Ferdinand Magellan’s 1519-1522 circumnavigation of the globe—completed between Ariosto’s first and third versions of the poem—Ruggiero decides that “he will complete the circle like the sun” around the globe upon the hippogriff’s back (X.70).¹⁴³ He journeys in the air solely for “pleasure” (X.73)¹⁴⁴ Italiano notes how Ruggiero’s path forms “a zigzag and against the logic of an economical route [...] skim[ming] famous and less famous parts of Asia until Europe is reached.”¹⁴⁵ The trajectory taken by Ruggiero is an aerial rejection of—to read this moment quite literally—the economic interests of the poem’s French forces.

Of course, Ruggiero is not part of Charlemagne’s forces, but Agramante’s. However, the poem depicts him as unable to engage an extractive view even for his cousin’s wartime interests. Ruggiero then flies low over England, observing where the knight Rinaldo has gathered great numbers of reinforcements to bolster Charlemagne’s efforts against Agramante. From the air, Ruggiero engages an English paladin in

¹⁴²Italiano, “Translating the Map,” 41.

¹⁴³Reynolds, *Part One*, 333.

¹⁴⁴*Ibid.*, 334.

¹⁴⁵Italiano, “Translating the Map,” 41.

conversation, and for fourteen cantos, the English paladin explains the purpose of their gathered host in detail. Ruggiero memorizes every insignia he sees, and “all the British captains’ names he learns” (X.90).¹⁴⁶ However, rather than using the birds-eye view granted by his flight or mobilizing this information in any way, he decides instead “to astonish” the gathered forces and “to derive amusement from the game,” performing a series of tricks with the hippogriff before flying off to Ireland (X.91).¹⁴⁷ Quite inexplicably, none of this gathered intelligence is ever brought up by the knight again. Now in control of the hippogriff’s flight, he does not ascend high enough to lose his orientation, like when he had no control over the hippogriff. Instead, the flying knight dwells near the ground, traversing large horizontal swathes of land in his circumnavigation for mere “pleasure” and doing aerial tricks for earth-bound knights, rather than using the hippogriff’s technology for the benefit of his allies.

The low-atmosphere travel Ruggiero undertakes is not, ultimately, made economically or politically productive by the knight. He does not utilize his “birds eye view” for any larger purpose. In fact, eventually, after rescuing Angelica, Ruggiero “did not take the course, as he’d intended, / Of circumnavigating all of Spain, / But on a shore nearby instead descended” (X.113).¹⁴⁸ He brings “his daring flight” to a “halt,” intending

¹⁴⁶Reynolds, *Part One*, 90.

¹⁴⁷*Ibid.*, 338.

¹⁴⁸*Ibid.*, 344.

to rape Angelica (X.114).¹⁴⁹ This “erotic misfortune,” as Daniel Javich calls it,¹⁵⁰ is the episode that leads many to read Ruggiero’s flight on the hippogriff as a symbol or allegory for unstable passions and “the violence of the appetite”¹⁵¹: an observation certainly not unrelated to the ways in which Ruggiero is racialized through the epic. However, far before this episode, the reader sees how Ruggiero’s dubious control over his place in the vertical airspace is related to larger issues of economic and nationalistic productivity: Ruggiero cannot control the hippogriff that lends him his aerial view, nor can he render the land below into extractable data.

On the other hand, Astolfo intuitively and immediately both controls the hippogriff, which allows him unparalleled access in the air space, and uses this access to become materially productive. After Ruggiero’s attempted rape of Angelica, who uses a magic ring to turn invisible before he assaults her, the hippogriff “Shak[es] its bridle free” (XXII.25)¹⁵² and flies back to its home at Atalante’s castle, where Astolfo finds it. Unbeknownst to Ruggiero or Logisilla, Astolfo had observed Logisilla’s taming of the hippogriff: “He clearly saw how Logisilla then / Controlled it with a bridle, and with care / Had watched Ruggiero’s lessons in the air” (XXII.27).¹⁵³ The information Astolfo gained from observation—itsself a scientific methodology—allows him to duplicate

¹⁴⁹Ibid.

¹⁵⁰Daniel Javitch, *Proclaiming a Classic*, 38.

¹⁵¹Ibid., 38.

¹⁵²Reynolds, *Part One*, 674.

¹⁵³Ibid., 674.

Logisilla's actions of his own accord. Astolfo independently saddles the hippogriff and then "selected, from a large array / of bridles, one of which he judged the bit / Would best constrain the creature to obey" (XXII.28).¹⁵⁴ Unlike Ruggiero, who flies his hippogriff while laden with layers of armor, Astolfo decides that "if he is to travel through the sky, / He deems it wise to keep his luggage light" (XXII.15).¹⁵⁵ Immediately, Astolfo seems to intuitively enact measures of control over the hippogriff, and he exhibits some instinctive knowledge of the physics required for air travel.

The difference in the two knights' control over the hippogriff continues as Astolfo takes to the air. While Ruggiero was previously whisked away without the ability to ascend or descent, Astolfo moves "with caution" as he "slowly trie[s] the air" (XXIII.16).¹⁵⁶ Astolfo immediately has control over his position in the airspace that Ruggiero did not. As he realizes this, Astolfo simultaneously gains "height and courage" and jets off into the distance, until he "in an instant was no longer there" (XXIII.16).¹⁵⁷ Astolfo's instant control over his place in the airspace and the speed with which he moves through it produces, to borrow a phrase from Martin Dodge and Rob Kitchin, "complex and uneven geographies of mobility"¹⁵⁸ between the two knights. This early

¹⁵⁴Ibid., 675.

¹⁵⁵Ibid., 696.

¹⁵⁶Ibid., 697.

¹⁵⁷Ibid.

¹⁵⁸Martin Dodge and Rob Kitchin, "Flying through code/space: the real virtuality of air travel," *Environment and Planning A* 36 (2004): 195.

modern form of jet travel—which, the narrator observes, move Astolfo faster than any bird, over all of France in an instant, then Spain, the Balearic Islands, and across North Africa (XXXIII.96-98)¹⁵⁹—bring Astolfo into what Manuel Castells calls a “space of flows,” rather than a “space of places.” Castells formulates the space of flows as specific to the Information Age of the late twentieth century, but I argue that the reconfiguration of space, time, and information inherent in Astolfo’s travels operate in much the same way. Castells’ space of flows is a material space opened up by technology in which space and time are radically reoriented, as relatively instantaneous transport is facilitated by emergent technology.¹⁶⁰ Expanding on Castells’ idea, Dodge and Kitchin write that the space of flows is a “rapid long-distance transport that networks elites [...] and the new spaces produced through these flows.”¹⁶¹ Spaces of flows are privileged registers of space/time opened up by emergent technology: at their outset they represent uneven geographies of access, as only certain people gain access to a space of flows, and in turn, spaces of flows allow these “elites” to access new material spaces made available via this flow. Importantly, as Dodge and Kitchin write, this produces “radical transformations in space-time relations and facilitate[s] growth in capital and globalisation.”¹⁶²

¹⁵⁹Reynolds, *Part Two*, 303.

¹⁶⁰Manuel Castells, “An Introduction to the Information Age,” in *The Information Society Reader*, ed. Frank Webster (London: Routledge, 2004); 146-7.

¹⁶¹Dodge and Kitchin, “Flying through code/space,” 196.

¹⁶²*Ibid.*, 196.

We see Astolfo begin to navigate something like a space of flows in *Orlando Furioso* as he immediately uses the newly acquired organic technology of air travel, the hippogriff, to survey “every town and region” across the Mediterranean and North Africa (XXXIII.100).¹⁶³ This network leads him to the storied realm of Prester John—here called Emperor Senapo—in Ethiopia. The narration quickly makes the stakes of Astolfo’s visit clear: not only is Senapo’s court a Christian realm, but it is from where “so many things of value come” (XXXIII.105).¹⁶⁴ Astolfo wants Senapo’s wealth and men to fight for Charlemagne’s cause, using his new global reach to recruit inter-continental aid. He discovers that a curse has been placed upon Senapo: to save the emperor, Astolfo must once again access his space of flows and the privileged geographies they open.

After defeating a group of harpies which threaten Senapo’s court, Astolfo flies the hippogriff to the mouth of hell. He descends, briefly listening to a single story from one damned shade, in a clear (if irreverent) allusion to Dante’s *Inferno*. Astolfo’s ascent to the heavens happens far more quickly than Dante’s however: he is almost immediately chased from Hell by an “avenging fog” (XXXIII.44).¹⁶⁵ In the face of this corrupted air, he cannot further extend the vertical plane downward, but he does stop up the mouth to hell to prevent anyone from following in his footsteps, effectively preserving his rarified access. Instead, he extends the vertical plane drastically upward, “almost to the moon”

¹⁶³Reynolds, *Part Two*, 304.

¹⁶⁴*Ibid.*, 304.

¹⁶⁵*Ibid.*, 323.

(XXXIII.48).¹⁶⁶ Astolfo suddenly feels “disdain” for “solid earth,” and this disdain carries him vertically through the aerial network, accessing the most exclusive environment yet: terrestrial paradise, overseen by St. John, the “elect of paradise” (XXXIII.54).¹⁶⁷

Astolfo’s mastery over the space of flows opened by the hippogriff’s abilities is, admittedly, contingent: St. John stresses that “A will divine, O paladin, consents / That on the earthly paradise you tread” (XXXIII.55).¹⁶⁸ Like Dante before him, Astolfo’s privilege of access is facilitated by the divine sanction of God. And, like Dante, Astolfo is granted a guide who is tasked with meting out any information the knight needs about both the new space in which he finds himself and his overall mission in this space. Unlike Dante, who moves through his environments extracting knowledge for the sake of his salvation and, by extension, that of his readers, Astolfo does so “To rescue Christendom and Charlemagne / From present peril of the Infidel” (XXXIII.56).¹⁶⁹ Astolfo’s goals are religious, nationalistic, and markedly material. To perform this task, he must ascend even further in the vertical plane, to yet another place no human foot has tread: “the circle of the moon – / The nearest of the planets” (XXXIII.67).¹⁷⁰ While Ruggiero on the land

¹⁶⁶Ibid., 324.

¹⁶⁷Ibid., 325.

¹⁶⁸Ibid.

¹⁶⁹Ibid., 326.

¹⁷⁰Ibid., 328.

below is earth-bound, allied with Agramante's Muslim forces,¹⁷¹ Astolfo is depicted as the Christian elect, whose faith and technical mastery over air travel has opened up new vertical realms via an elite space of flows.

St. John takes Astolfo past the realm of the element of air entirely, through the "sphere of fire" (XXXIII.69)¹⁷² which sits atop the air in the classical hierarchy of the four elements. Several critics have discussed how the moon episode, in which Astolfo sees the earthly globe from afar and reckons with its proportions in the expansive universe, unsettles anthropocentric perspective and recognizable typologies.¹⁷³ I wish instead to discuss how Astolfo uses the privileged access gained from his navigation of a space of flows to further enact his extractive view, which began when he first took to the air and began cataloging the land below him. Once again like Dante before him, Astolfo is constantly "Asking to be enlightened by his guide" (XXXIII.76)¹⁷⁴ about the places he passes through. However, unlike Dante, whose extraction is intangible, to fulfill the task set for him by St. John, Astolfo must sort through the materials on the moon until he finds Orlando's "wits," which the earth-bound hero has lost. Astolfo's ability to perform

¹⁷¹The text persistently labels Agramante and his forces as "Saracen." For more on how critical reproduction of this term erases the Islamophobic violence of premodern European source material, see Shokoofeh Rajabzadeh, "The depoliticized Saracen and Muslim erasure," *Literature Compass* 16, no. 9-10 (2019): e12548.

¹⁷²Reynolds, *Part Two*, 69.

¹⁷³For representative examples, see: Ita Mac Carthy, "Ariosto the Lunar Traveller," Ladina Bezzola Lambert, "How Metaphors Matter."

¹⁷⁴Reynolds, *Part Two*, 331.

this task are of primary importance to the narrative at large, seeing as they would solve the problem posed in the work's very title, *Orlando Furioso*.

Astolfo discovers that every intangible thing on earth becomes a tangible object on the moon. Intangible entities which I have discussed through the lens of extraction in previous chapters—knowledge, memories, desires—become physical *things* in the moonspace.¹⁷⁵ To take these entities from this environment is thus no longer an *ideological* type of extraction, but a material one. The moonspace crystallizes what was previously intangible into an extractable object economy.¹⁷⁶ Wits appear as “A liquid thin and clear [...] Distilled in many vases, large and small, / Which must (so volatile the fluid is) / Be tightly corked” (XXXIII.83).¹⁷⁷ Astolfo is able to take back his own wits that he has lost in life so far, breathing them in. The largest container contains Orlando's wits—the size directly proportional to what he has lost—and is “less easily attained” (XXXIII.87),¹⁷⁸ but Astolfo nevertheless quickly succeeds at gathering what he has come to take.

¹⁷⁵ This has led to a popular reading of the moonspace not as a “real” environment, but as a mirror for Earth, what Clare Carroll calls “a realm of otherness” that “takes the form of a metaphorical landscape that reveals earthly madness” (*The Orlando Furioso: A Stoic Comedy* [Tempe, AZ: Medieval and Renaissance Texts and Studies, 1997, 183]). While my larger analysis highlights my general thoughts on the metaphorization of landscape, it is worth noting that imagining landscapes that mirror reality is a generic attribute of science fiction narratives, especially ones that deal in constructions of empire. For instance, Patricia Kerslake writes: “with the curiosity of the sentient, [humans] are always fascinated by our reflection and SF provides mirrors that stretch to either end of our existence [...] SF produces instead an unending succession of literary experiments, each one examining a small part of a much larger image” (*Science Fiction and Empire* [Liverpool: Liverpool University Press, 2007], 2).

¹⁷⁶ This also calls to mind Sherryl Vint's description of science fiction as a genre that “has the power to literalize metaphor” (*Science Fiction: A Guide for the Perplexed* [London: Bloomsbury Academic, 2014], 5).

¹⁷⁷ *Ibid.*, 332.

¹⁷⁸ *Ibid.*, 333.

Access to vertical dimensions of air and space, I argue, is the nexus upon which a variety of significations hinge. Due to their varied levels of control over their hippogriff, Ruggiero and Astolfo become hierarchized within the physical airspace—itsself a vertical extrapolation of expanded contemporary terrestrial geographies—in ways reminiscent of the vertically hierarchized depictions of racialized religious figures, such as the “cartographic bodies” that Valerie Traub has observed alongside the margins of early modern maps. This hierarchization speaks to larger European Christian cultural logics of whose national and religious allegiances allow access to new technologies of travel and new spaces of flows that open networks between elite people and spaces. Further, Ruggiero and Astolfo’s ability to access airspace is delineated by their ability to capitalize on their aerial view to enact an extractive view: Ruggiero apparently can (or does) not, while Astolfo ascends into the moonspace where all abstract things have become an object economy, allowing him to extract from the space what was previously intangible.

These factors have, in some ways, allowed Astolfo to “conquer” the elements, while Ruggiero has become both physically and metaphorically grounded. In the concluding section of this chapter, I look at the conclusion of these two men’s plots, and how these factors manifest in their terrestrial actions and the narrative resolutions of their stories.

Conclusion: Authority Over the Elements

I began this chapter by discussing Octavia Butler's *Parable of the Sower* and subsequent real-world politics and ethics of space travel: both, as I discussed, bring into high relief how human negotiations of aerial environments and vertical planes (conceptually, scientifically, and materially) have immense consequence on existing social hierarchies on earth. It is thus fitting that I end this chapter by examining how this phenomenon iterates itself in the narrative resolutions of the two flying knights in *Orlando Furioso*, after Astolfo joins the rest of the characters on solid ground.

Astolfo descends into the terrestrial environment with none of the descriptive flair of his ascent. However, once on solid land on the continent of Africa, he unleashes intense destruction upon the land via a newfound powerful and extremely precise control over the environment. Astolfo performs two miracles, explained by his "firm belief in God" (XXXVIII.33).¹⁷⁹ After praying atop a large hill, Astolfo rolls "rock after rock" down the mountain face: "The rolling stones no natural law obeyed, / For, as they tumbled down the slope, they grew / A rounded belly, legs, a neck, a muzzle / (And how they did it still remains a puzzle)" (XXXVIII.33).¹⁸⁰ With his actions, the phenomena we observed in the moonspace wherein intangible objects become materialized into an object economy that Astolfo can manipulate becomes manifest on Earth as well. He has

¹⁷⁹Reynolds, *Part Two*, 418.

¹⁸⁰*Ibid.*, 418.

complete mastery not only over element and environment, but the Great Chain of Being itself, as he transforms the base but lively material, stone, into living horses.¹⁸¹

Astolfo has, in essence, conquered “natural law” to—with divine sanction—make the world around him maximally productive to Charlemagne’s imperial enterprise. This transformation in natural material parallels and facilitates a transformation in men: “Ten times eight thousand, ten times ten, plus two / that day from infantry to cavaliers / he changed; then Africa they scoured all through, / Burning and sacking, taking prisoners” (XXXVIII.35).¹⁸² This transformation results in multiple thousands of men’s military identities changing from the foot-bound infantry to the horse-mounted cavalier. He now outstrips the abilities of both natural law via his transformation, and earthly lord or king via his mass military outfitting. In addition to making tens of thousands of cavaliers, Astolfo uses his ability raise a vast navy:

Then, filling both his hands, he quickly tore
Innumerable leaves from many plants—
Palms, laurels, olives, cedars; to the shore
He carried them without a backward glance
And on the water threw his precious store.
O grace with which God to men so rarely grants!
O wondrous miracle which from the leaves
Arose, soon as they floated on the waves! (XXXIX.26)¹⁸³

¹⁸¹For more on the relationship between stone and liveliness in early modern thought, see for instance: Kellie Robertson, “Exemplary Rocks,” in *Animal, Vegetable, Mineral: Ethics and Objects*, ed. Jeffrey Jerome Cohen (Washington D.C.: Oliphaunt Books, 2012), 93-123; Tiffany Jo Werth, “A Heart of Stone: The Ungodly in Early Modern England,” in *The Indistinct Human in Renaissance Literature*, eds. Jean E. Feerick and Vin Nardizzi (New York: Palgrave Macmillan, 2012), 179–203; Lex Hermans, “Consorting with Stone: The Figure of the Speaking and Moving Statue in Early Modern Italian Writing,” in *Push Me, Pull You: Imaginative, Emotional, Physical, and Spatial Interaction in Late Medieval and Renaissance Art*, eds. Sarah Blick and Laura Gelfand (Boston: Brill, 2011) 117-145; Jeffrey Jerome Cohen, *Stone: An Ecology of the Inhuman* (Minneapolis: University of Minnesota Press, 2015).

¹⁸²Reynolds, *Part Two*, 418.

¹⁸³*Ibid.*, 439.

These leaves become a massive fleet, whose varieties of ships “Reflect the different fronds of different trees” Astolfo tears the leaves from (XXXIX.27).¹⁸⁴ Like the stones before them, the leaves’ ultimate destiny is to be transformed into something more imminently “of use” to Charlemagne’s empire: only in their displacement from nature are they deemed valuable. Like Jonah in my previous chapter, who mobilized his deep-sea descent into forced conversion and religio-racial violence in the world above, so too has Astolfo with the power gained from his vertical ascent. Astolfo’s ability to engage and perform the extractive view throughout his privileged access, which carried him first to terrestrial paradise and then to the moon, grants him seemingly unconditional authority to manipulate environmental material into military force. Astolfo’s enactment of the extractive view was not confined to seeing “like a satellite” from above and commoditizing his objects of observation, nor to simply “taking” material objects from environments like with Orlando’s wits on the moon; he actively transforms the material landscape into “extractable data” to facilitate the wartime effort.

If Astolfo, by virtue of his “successful” ascent on the vertical plane, has gained control over the elements, Ruggiero’s “failure” makes him utterly subjected to them. Still allied with his cousin’s army, Ruggiero’s ship is overcome by a tempest that drowns his compatriots and very nearly himself: “With arms and legs Ruggiero means to strive / Towards that dry, though rocky, piece of land. / Blowing the waters back, which would

¹⁸⁴Ibid., 439.

deprive / Him of his breath, he battles for the strand (XLI.22).”¹⁸⁵ Ruggiero enters a battle with the waves. Unlike Astolfo, who demonstrates supernatural control over the elements, Ruggiero feebly tries to blow back the waters that seek to overtake his own air in the form of breath. This helplessness to the elements follows from Ruggiero’s “inability” to navigate the vertical plane of the airspace. Importantly however, this “inability” is one that is imposed onto Ruggiero by the text’s larger cultural, political, and religious concerns as an early modern Italian text that retrospectively depicts an epic narrative surrounding the wartime efforts of a medieval Carolingian emperor. As Ruggiero struggles in the water, he realizes that the elements have been levied against him in a kind of forced conversion: “He fears that Christ is now baptizing him, / Not in that water, clean and pure, which saves, / Which he was slow to seek (by his own fault), / But in this flood so bitter and so salt” (XLI.47).¹⁸⁶ This saltwater-immersion baptism becomes, to an extent, a revenge baptism foisted upon Ruggiero for being “slow to seek” conversion by his own “fault.” If Astolfo’s Christian identity and his position as God’s elect facilitated his ascent into the airspace upon the hippogriff, and what was gained in these privileged aerial spaces gave him command over the elements below, within the logic of the text, Ruggiero’s Muslim faith is directly tied to his subjection to the elements. Religiosity thus striates Ruggiero and Astolfo upon the vertical plane, as ascension in the poem’s aerial realm is governed by a strict politics of access. Ruggiero never capitalizes on his aerial view and loses it entirely when he deserts the hippogriff to

¹⁸⁵Ibid., 481.

¹⁸⁶Ibid., 487.

try to rape Angelica—an Islamophobic dramatization of the supposed lack of temperance and self-control of non-Christian characters. Ruggiero’s salvation from the elements is contingent upon his conversion. He promises that “If ever he set foot on land again, / He would become a Christian there and then” (XLI.48),¹⁸⁷ which he follows through with after he arrives on dry land: this anticipates Charlemagne’s subsequent victory over Agramante’s forces.

From the outset of the poem, discourse about the elements—both the creation of beings that travel through them, and humankind’s control over them or subjection to them—has been interwoven with two related social systems: that of burgeoning scientific discourse and that of expanding colonial and imperial enterprise, including the enactment of the extractive gaze and religious incentives like forced conversion. Like the twenty-first century privatized space travel I began this chapter with, which has outsized environmental impacts on the terrestrial world, so too do the vertical journeys of Ruggiero and Astolfo have outsized impact in their narrative world; Astolfo’s supernatural feats lead to the transformation of Charlemagne’s army and to greater wartime violence, and Ruggiero’s conversion at the hands of the elements anticipates Charlemagne’s victory over Agramante and his people writ large.

Through *Orlando Furioso*, the reader bears witness to the ways these three hubs of scientific innovation, element and environment, and colonial enterprise are interdependent and enmeshed. The “science fiction” setting in which these factors are used to hierarchize Ruggiero and Astolfo in *Orlando Furioso* upon the vertical plane

¹⁸⁷Ibid., 488.

shows how literature imagines these intersections, the forms of “possible knowledge” they engage, and the way this knowledge can be used to uphold empire and subjugate people. These observations anticipate my discussion of ecophobia in my final chapter, where these same themes manifest in proto-scientific travel literature, popular drama, and centuries of academic criticism.

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Chapter 4

Extraction and Ecophobic Rhetoric in

José de Acosta's *Historia* and William Shakespeare's *The Tempest*

Introduction

In my first and second chapters, I discussed the medieval rhetorical origins of extractive logic in which the human is always invited to invade and exploit a greater and greater variety of environments, acting as a metaphorical “dark tourist” who is invited—often by divine decree—to extract religious revelation or moral meaning from the environments they travel through. In my third chapter, I began to discuss how this paradigm morphs in the age of increasingly global colonialism. In this chapter, I continue to examine this trajectory of extractive ideology as premodern European literature increasingly engages topics pertaining to colonial endeavors in the Americas. To discuss this, I engage with the concept of ecophobia as proposed by Simon C. Estok. Estok defines ecophobia as “an irrational and groundless hatred (often fear) of the natural world that is as present and subtle in our daily lives and literature as homophobia and racism and sexism.”¹ This chapter examines the culmination of a logic inherent in the definition of ecophobia itself: how, as Estok writes, rhetoric and “metaphor wor[k] in producing and perpetuating material practices that hurt people (and the environment).”² By adopting this lens, we thus

¹Simon C. Estok, *The Ecophobia Hypothesis* (Oxford, UK: Routledge, 2018), 10.

²Simon C. Estok, *Ecocriticism and Shakespeare: Reading Ecophobia* (London: Palgrave Macmillan, 2011), 90.

see finally the devastating material consequence set up by centuries of ideologies of extraction through premodern European literature.

Estok's extensive work on ecophobia demonstrates both the pervasiveness of ecophobia in early modern and twenty-first century media genres and the way that "the origins of our current environmental crises are deeply rooted" in ecophobic discourse.³ Thus, he concludes, "there really is no way forward until we come to serious understandings of how ecophobia got us to where we are."⁴ An apprehensive, ecophobic relationship with nature often—but not always—manifests as subtle or overt fear, but regardless of its manifestation, Estok writes that it "is all about frustrated agency."⁵ This frustrated agency follows from a Western, Christian paradigm in which the human's point of origin is also a site of "the most obvious instantiations of ecophobic discourse," in which Adam is given "divine authority to control everything that lives."⁶ When people encounter environmental phenomena that clearly challenges their supposed control, the subversion of this control in material reality produces an ecophobic impulse that is perpetuated through literature and media on the level of rhetoric. Harald Fisher-Tiné's edited collection *Anxieties, Fear and Panic in Colonial Settings: Empires on the Verge of a Nervous Breakdown* describes the relationship between fear and colonial control via what he and Christine Whyte call "the seemingly paradoxical effects of the asymmetries

³Simon C. Estok, "Introduction: Theorizing Ecophobia, Ten Years In," *Special Cluster: Revisiting Ecophobia. ISLE: Interdisciplinary Studies in Literature and Environment* 26, no. 2 (2019): 380.

⁴Ibid., 380.

⁵Estok, *The Ecophobia Hypothesis*, 10.

⁶Estok, *Ecocriticism and Shakespeare*, 5.

characteristic of the *situation coloniale*,” in which the “power” of colonial class is motivated by “anxiety, fear, and *angst*.”⁷

An early modern text that is often approached via discussions of fear, control, and authority is William Shakespeare’s *The Tempest*. A text often juxtaposed with *The Tempest* is Jesuit missionary José de Acosta’s 1589 *Historia natural y moral de las Indias*,⁸ however unlike *The Tempest*, Acosta’s text has not been fully interrogated for its own ecologies of extraction and ecologies of fear.⁹ Early modern European travel narratives provide a fertile ground for examining legacies of ecophobia as the travel narrative genre begins to shift in response to colonial interests in the “New World,” which, of course, only seems new to those colonizing it. Mauro José Caraccioli writes that sixteenth-century Spanish travel narratives did not “merely exten[d] the epic chronicles of religious conquest and manly virtue that characterized the Spanish Reconquista,” and thus the medieval genre of Spanish narrative.¹⁰ Rather, they sought to

⁷Harald Fisher-Tiné ed., *Anxieties, Fear and Panic in Colonial Settings: Empires on the Verge of a Nervous Breakdown* (Cham, CH: Springer International Publishing, 2017), 1-2.

⁸For an extensive accounting of Acosta’s prominence in the genre of Spanish travel narrative and the extensive research done on his influence in the field, see Orlando Betancor, “Mastering Nature: José de Acosta’s Pragmatic Instrumentalism,” in *The Matter of Empire: Metaphysics and Mining in Colonial Peru* (Pittsburgh: University of Pittsburgh Press, 2017), 151-216, esp. 153-4.

⁹For work on the relationship between Acosta and *The Tempest*, see for instance: David Norbrook, “‘What Cares These Roarers for the Name of King?’: Language and Utopia in *The Tempest*,” in *The Politics of Tragicomedy*, ed. Gordon McMullan and Jonathan Hope (Oxford, UK: Routledge, 1992), 1-20; William M. Hamlin, “Men of Inde: Renaissance Ethnography and the *Tempest*,” *Shakespeare Studies* 22 (1994): 15-44; Ricardo Castellás, “From Caliban to Lucifer: Native Resistance and the Religious Colonization of the Indies in Baroque Spanish Theater,” *Hispanófila*, no. 182 (2018): 41-54; Sophie Chiari, “The I/Eye of the Storm: Prospero’s *Tempest*,” in *Shakespeare’s Representation of Weather, Climate and Environment: The Early Modern ‘Fated Sky’* (Edinburgh: Edinburgh University Press, 2019), 217-255.

¹⁰Mauro José Caraccioli, “Narratives of Conquest and the Conquest of Narrative: Writing the New World,” in *The Politics of Natural History in the Early Spanish Empire* (Gainesville: University Press of Florida, 2021), 16.

use the genre of natural history to “craft a historiography of New World nature”¹¹ according to what Caraccioli identifies as a new type of “missionary science” largely concerned with comparative analysis, experimentation, and interpretation.¹² Ivo Kamps and Jyotsna Singh write that in early modern travel narratives, the “*act of seeing* functions as an important structural device, whereby our travelers interpret and record European cultural encounters.”¹³ Observation and recording of the environment thus track alongside larger cultural projects. Kamps and Singh further the connection between seeing and the types of extractive logics I focus on, writing that “seeing, with its assumptions of *knowing* and *possessing*, becomes an act fraught with meaning and power,” wherein the traveler is possessed of the sole “empirical” perspective.¹⁴ In previous chapters, I have described this positionality as a literary correlative of extractive tourism.

Caraccioli further writes that this “science of domination is inextricable from Spain’s grand narrative of imperial ascendance” in the colonial era.¹⁵ As a genre of writing, early modern travel narrative is deeply concerned with the same questions of agency, control, and fear that ecophobia is concerned with; indeed, ecophobic rhetoric is

¹¹Ibid., 14.

¹²Ibid., 15.

¹³Ivo Kamps and Jyotsna Singh, “Introduction,” in *Travel Knowledge: European “Discoveries” in the Early Modern Period*, ed. Ivo Kamps and Jyotsna Singh (New York: Palgrave Macmillan, 2001), 3-4.

¹⁴Ibid., 4. Here, Kamps and Singh follow Mary Louise Pratt’s formulation of the European travel narrative writer as a “seeing-man” with a “landscanning” eye (Mary Louise Pratt, *Imperial Eyes: Travel Writing and Transculturation* [New York: Routledge, 1992], 7, 78).

¹⁵Caraccioli, “Narratives of Conquests and the Conquest of Narrative,” 15.

often deployed in these narratives to wrangle unfamiliar environments into registers of imperial control. We must also acknowledge that despite the colonial fiction of the *terra nullius*, this project of imperial control would come to affect millions of Indigenous peoples across the Americas, who were subjected to extreme physical, sexual, and emotional violence, conversion, relocation, internment, and genocide whose repercussions continue through the twenty-first century. As such, this turn in travel writing indicates a “more complex master narrative”¹⁶ that began to spread throughout Europe, whose repercussions continue to be felt today.

The popularity of Spanish travel narrative, particularly Acosta’s, across Europe led to Edward Grimstone’s 1604 English translation of Acosta’s highly influential Spanish language narrative *The Naturall and Morall Historie of the East and West Indies*.¹⁷ As other European countries undertook their own colonial endeavors in the Americas, this new type of Spanish travel narrative “played a decisive role in the emergence of a modern, scientific worldview across Europe” and “blazed a trail that

¹⁶Ibid., 16.

¹⁷The first two books of this narrative, which concern “naturall” history, were written in Latin by Acosta on-site in what is now called Peru. He subsequently translated both into Spanish so they could be more widely read and composed the other books of “natural” history, as well as all of the books on “moral” history in Spanish after returning to Spain from Peru. The entire narrative was completed in the 1590s and was later translated into English by “E.G.”—thought to be Edward Grimstone. Since this chapter considers the relationship between Acosta’s and Shakespeare’s texts, my textual references are drawn from Grimstone’s 1604 translation rather than Acosta’s 1589 Spanish version. While this chapter quotes and references Grimstone’s translation, I will attribute the authorship in-text to Acosta. This chapter is focused on legacies of ecophobic rhetoric as they appear in travel narrative, the early modern English play *The Tempest*, and subsequent academic criticism of *The Tempest*: therefore, it seems most fitting to reference the version of Acosta’s text that would have been most readily available to the early seventeenth-century English public watching *The Tempest*: Grimstone’s translation precedes the play by about six years. In terms of its adherence to the Spanish language original, Clements R. Markham calls Grimstone’s translation “on the whole, credible and trustworthy” (José de Acosta, *The Natural and Moral History of the Indies*, ed. Clements R. Markham. Hakluyt Society, 2010, xiv).

others would soon follow.”¹⁸ Acosta’s text and Grimstone’s translation bear the hallmarks of this scientific worldview in what Geraldine Barnes calls “catalogue format” description,¹⁹ where individual chapters themselves contain detailed list-like descriptions, subsequent chapters catalog comprehensive aspects of land, animals, and peoples,²⁰ and the beginning of Grimstone’s translation contains a detailed, alphabetized index of noteworthy subjects with accompanying page numbers for easy consultation.

To begin analyzing how ecophobia presents itself in Acosta’s text, I expand upon different registers of ecophobia proposed by Estok. In 2018’s *The Ecophobia Hypothesis*, Estok urges critics to look at “every aspect of ecophobia,” emphasizing that “sometimes it is the little things that show it” and thus his book attempts to look “at the little and the big.”²¹ In 2011’s *Ecocriticism and Shakespeare: Reading Ecophobia*, he discusses ecophobia’s “implicit and explicit connections [...] conceptual intertwinings [...] and their implications.”²² Estok does not expand at length on how we might read these “explicit” and “implicit” registers of ecophobia, nor define these terms and the potential differences between them. This chapter builds on his framework by identifying specific

¹⁸Caraccioli, “Narratives of Conquest and the Conquest of Narrative,” 18, 20.

¹⁹Geraldine Barnes, “Traditions of the Monstrous in William Dampier’s New Holland,” in *Travel Narratives, the New Science, and Literary Discourse, 1569-1750*, ed. Judy A. Hayden (Surrey: Ashgate Publishing Limited, 2012), 89.

²⁰For example, “That the naturall Historie of the Indies, is pleasant and agreeable. CHAP. 1,” “Of the windes, their differences, properties, and causes in generall. CHAP. 2,” “Of certaine properties of windes which blowe at the new worlde. CHAP. 3,” and so on.

²¹Estok, *The Ecophobia Hypothesis*, 12.

²²Estok, *Ecocriticism and Shakespeare*, 3.

instantiations of “explicit” and “implicit” ecophobia.²³ As I conceptualize it, explicit ecophobia iterates itself as “big,” catastrophic environmental phenomena: I turn to tempest and shipwreck, two related phenomena with thematic roots in antiquity. Josiah Blackmore, whose book *Manifest Perdition: Shipwreck Narrative and the Disruption of Empire* represents a seminal text in shipwreck studies, writes that this ancient theme shifts in the context of sixteenth century colonization to become a “distinct mode of narrative in which shipwreck functions as the sign and break in the ideological fastness of reigning forms of historiographic discourse.”²⁴ I discuss how Acosta’s text addresses tempest and shipwreck in an explicitly ecophobic way, drawing on themes that denote anxieties of rupture in European authority and its colonial endeavor. This explicit ecophobia uses environmental rhetoric in an attempt to weave the history of the Indigenous peoples of Abya Yala²⁵ into these moments of rupture while denying their self-proclaimed histories.

²³This is not an attempt to binarize or categorize ecophobic impulses, but rather to begin theorizing what Estok calls the “obvious yet under-utilized” (“Introduction,” 381) discussions of ecophobia within the larger umbrella of ecocriticism and environmental humanities. Rather than disclosing additional categories of ecophobia, I hope this framework invites additional nuance to these categorizations. Further, this language echoes that of “implicit” and “explicit” bias and racism but does not seek to draw a parallel between these paradigms; while ecophobia is related to racism, the phenomena should be afforded their own due attention. Implicit and explicit biases often denote harmful or racist attitudes or language toward another person or group that is unconscious and conscious respectively. This differs from what I am calling explicit and implicit ecophobia, in which the former refers to obvious, large-scale disaster and environmental phenomena and corresponding rhetoric, and the former refers to environmental language and phenomena that masquerades as innocuous, whose phobia is implied or disguised.

²⁴Josiah Blackmore, *Manifest Perdition: Shipwreck Narrative and the Disruption of Empire* (Minneapolis: University of Minnesota Press, 2002), xx-xxi.

²⁵As a Spanish Jesuit missionary, Acosta primarily uses colonial placenames such as Peru, the West Indies, and New Spain. This chapter attempts to attend closely to rhetoric that explicitly and implicitly perpetuates the colonial project. Surely, many Indigenous names for the lands now called Central and South America have been lost. Some scholars mindfully use the Indigenous name “Turtle Island” to refer to the lands now called “North America.” Following this, this chapter purposefully refers to South America by one of its

By contrast, implicit ecophobia appears in seemingly “little” expressions of fear and anxieties of control. In Acosta’s discussion of maíz, what masquerades as “objective” sorting, cataloging, and observation actually represents an implicitly ecophobic categorization of the flora and fauna of Abya Yala, as well as associated cultural practices. Here, I follow critics such as Rebecca Earle, who discusses the relationship between foods of the Americas and the colonial body, and Gitanjali Shahani, who discusses how “food comes to be inscribed with racial character” in the early modern period, and further, how this association provoked “discomfort” and “anxieties” about “polluting the [colonial] body politic itself.”²⁶ Like the explicitly ecophobic rhetoric of tempest and shipwreck, this implicit ecophobia uses environmental rhetoric about maíz to hierarchize both people and planet under a colonial European framework.²⁷ Together, these two forms of ecophobia show how environmental rhetoric is used to construct, fix, and market ideological projects inherent to European colonialism.

As it is deployed in Acosta’s narrative, these registers of ecophobic rhetoric are concerned with anxieties of control. In a colonial context, these ecophobic

Indigenous names, Abya Yala. Janssen Felipe da Silva says that the name Abya Yala “is a way of confronting the name Latin America, which was given by the invader [...] Its use is the affirmation that we, those who work with epistemology in the Global South and Latin America and with decolonial thinking, accept it as a confrontation” (Fábia Prates, “[What do Abya Yala and Pindorama mean?](#)” *Contemporary And América Latina*, April 12, 2023). Where possible, I use Indigenous tribal names rather than settler names (i.e./ Tawantinsuyu rather than Inca).

²⁶Gitanjali Shahani, *Tasting Difference: Food, Race, and Cultural Encounters in Early Modern Literature* (Ithaca, NY: Cornell University Press, 2020), 5, 6, 91.

²⁷I intend these examples to be “case studies” of explicit and implicit ecophobia at work, rather than exhaustive or preeminent examples of such. To my knowledge, this chapter presents the first theorization of these sub-categories. I hope the current study invites scholars to further explore examples of these terms and the types of environmental rhetoric they describe, both in premodern genres and without.

preoccupations concern when Orlando Betancor calls the “inalienable right to circulate and pursue knowledge” in any environment on the face of the globe, an right to absolute control that “presupposes the use of violent force in the face of any resistance to the free circulation of” colonial forces.²⁸ After analyzing explicit and implicit ecophobia in Acosta’s *History*, I examine how this rhetoric clearly iterates itself in *The Tempest*, as environmental control is layered over colonial control: the magician Prospero manipulates the airy spirit Ariel to “command” the elements that wreck the Italian nobles’ ship, and Prospero’s ecophobic, colonial anxiety bridges into his treatment of the play’s two enslaved characters, Ariel and Caliban. Finally, I discuss how these constructions are perpetuated within early Romantic-era *Tempest* criticism.

In discussions of ecophobia, the concept of “fear” should be appropriately defined. For instance, in their response to Estok’s work, Rayson K. Alex and S. Susan Deborah discuss what they call “Indigenous Reverential Eco-fear,” or IRE.²⁹ Alex and Deborah want to “make clear” that “a fear of unpredictability in nature in and of itself is not a phobia and is not irrational,” but that there is “a point at which it can become so.”³⁰ Fear and related concepts are thus culturally contextual and should be discussed as such. The type of ecophobia discussed throughout this chapter specifically iterates itself within colonial contexts: a purposefully manipulated fear that speaks to larger anxieties about

²⁸Betancor, “Mastering Nature,” 117.

²⁹Rayson K. Alex and S. Susan Deborah. “Ecophobia, Reverential Eco-fear, and Indigenous Worldviews,” *ISLE: Interdisciplinary Studies in Literature and Environment* 26, no. 2 (2019): 423.

³⁰*Ibid.*, 425.

control and hierarchization. It is also distinct from the rational fear that humans have developed as a survival mechanism through hundreds of millennia of evolution: the aversion to the scent of rotting or curdled foodstuffs or the recoil from a brightly colored snake or spider. Estok writes that these “rational” fears in and of themselves are not ecophobia, “but they can certainly lead into it. Novels, films, and other narratives that exploit these fears, that nurture and coddle them, and that magnify and pervert them to sell a story or a product or a politician: that’s ecophobia.”³¹

Far from being a mere evolutionary impulse, ecophobia is a system of socially contextual, marketed “fear” that is exploited, exaggerated, and rhetorically manipulated, often to “sell” an idea, person, ideology, etc. As a purposeful rhetorical strategy exercised in literature, ecophobia is thus often evoked to craft a larger ideological argument, as nature and the effects it engenders are manipulated and categorized to reinforce other social hierarchies. To this point, Estok notes that “racism, misogyny, homophobia, and speciesism are thoroughly interwoven with [ecophobia] and with each other and must eventually be looked at together.”³² Moments of ecophobic rhetoric naturally intersect with discussions of myriad social hegemonies, and so critical discussions of ecophobia must address these systems. In this chapter, I do not discuss ecophobia in early modern travel narrative and genre in isolation, but also across a morphing body of academic criticism from the Romantic era onward. By attending to these interwoven facets of ecophobic rhetoric, can enlighten our discussion of contemporary ecophobia in the

³¹Estok, *The Ecophobia Hypothesis*, 8.

³²Estok, *Ecocriticism and Shakespeare*, 3.

twenty-first century, thereby exposing what Kyle Whyte calls the “insidious loops”³³ that this rhetoric perpetuates across the centuries.

Explicit Ecophobia: Tempest and Shipwreck

Jose de Acosta’s advertisement to the reader situates his book in a way that will seem familiar to any twenty-first century scholar in the Western academy: by identifying a perceived hole in the literature that he alone can fill. According to Edward Grimstone’s 1604 English Translation, the text reads,

Hitherto I have not seene any other Author which treates of the causes and reasons of these novelties and wonders of nature, or that hath made any search thereof. Neither have I read any booke which maketh mention of the histories of the antient Indians, and naturall inhabitants of the New World. (3)³⁴

Acosta uses several words which indicate how he perceives his role as a travel writer: he seeks the “causes” and “reasons” of what he observes. If these causes and reasons are not immediately apparent, he intends to “search” for them. This empiricism presents an early form of experimental science that he identifies as unique to him, as he attests that he has not seen any other author perform these tasks. Acosta goes a step further by pointing out

³³Considering the prevalence of this rhetoric in colonial travel narrative, as I will go on to discuss, I borrow this phrase from Kyle Whyte, where he defines “insidious loops” as “the pattern of how historic settler industries that violated Indigenous peoples when they began are also implicated many years later in further environmental violence” (“Settler Colonialism, Ecology, and Environmental Injustice,” *Environment and Society* 9, no. 1 [2018]: 138).

³⁴All citations from: José de Acosta, *The naturall and morall historie of the East and West Indies Intreating of the remarkable things of heaven, of the elements, mettalls, plants and beasts which are proper to that country: together with the manners, ceremonies, lawes, governments, and warres of the Indians*, trans. Edward Grimston, 1604. *Early English Books Online Text Creation Partnership*, <<https://quod.lib.umich.edu/e/eebo/A22928.0001.001/>>, accessed 29 March 2024.

that he has never seen a book that presents and “disproves” what he considers a counterargument to his explanations—the accounts that the Indigenous peoples through Abya Yala give of their own history, which he will later take pains to present and then refute. By engaging in the scientific processes of cause and reasoning, search and experimentation, and counterargument and rebuttal, Acosta effectively moves travel writing from an accounting of an “experience of wonder”³⁵ to a place of imperial and empiricist inquiry.

Orlando Betancor writes that Acosta’s *Historie* “was considered a monument to modern science even by Enlightenment skeptics of Catholic superstition and Spanish despotism,”³⁶ and writing concerning his legacy often stresses his preeminent “place in the development of modern scientific methods and networks.”³⁷ Mauro José Caraccioli acknowledges how “the Spanish encounter with the lands, peoples, and creatures of the New World played a decisive role in the emergence of a modern, scientific worldview across Europe”³⁸—thus showing the relationship of environmental narrative and rhetoric with larger cultural projects. In translating and consulting Spanish travel writing, “North European thinkers from Francis Bacon to Alexander von Humboldt relied heavily on the empirical repository collected by agents of Imperial Spain,” even as they “deemed [Imperial Spain] as incapable of civilized rule, and ill-suited to be the intellectual center

³⁵Caraccioli, “Narratives of Conquest and the Conquest of Narrative,” 15.

³⁶Betancor, “Mastering Nature,” 182.

³⁷Ibid., 154.

³⁸Caraccioli, “Narratives of Conquest and the Conquest of Narrative,” 18.

in a shifting geopolitical landscape.”³⁹ In their approach to Spanish travel writing, Northern European authors, thinkers, and translators take issue with the *Spain* of it all, rather than with the substance of the observations Spanish travel writers made. For his part, Acosta helped inaugurate a distinct kind of narrative work that made “the New World into an object of inquiry and source of riches.”⁴⁰

This positioning of Acosta as an objective observer of “New World” environments and phenomena exemplifies the aims of the early modern travel writing genre writ large. Arthur L. Little Jr. writes that “as ‘scientific’ evidence became increasingly the official, or real, proof of the day [...] there developed a need for more such scientific histories.”⁴¹ That is, cultural privileging of information gained by perceived objectivity and scientific methods also infused genres such as historiography, which used methodologies like listing and cataloging of landscape, animals, and people to create “scientific histories” that detailed the land with encyclopedic breadth. There was a special demand from European audiences for histories that discussed the landscapes of the American continents in this way. Little identifies George Best’s *Discourse* and Richard Hakluyt’s *Principall Navigations* as two such histories in the English travel writing milieu, but the popular translation of Acosta’s *Historie* in England also indicates

³⁹Ibid., 19.

⁴⁰Betancor, “Mastering Nature,” 155.

⁴¹Arthur L. Little Jr., *Shakespeare Jungle Fever* (Stanford: Stanford University Press, 2000), 76.

this “need,” as foreign language histories were translated into English for circulation alongside original English-language travel narratives.⁴²

Wallace Cleaves writes that the “practice of research as a colonial construct is fundamentally implicated in some of the earliest and most profound attempts to construct a mythic medieval past in what would become North America.”⁴³ Within the context of Abya Yala as well, colonial “research” like the kind undertaken by Acosta focused on using what Acosta considers a process of scientific reasoning, combined with environmental rhetoric and imagery, to dismiss Indigenous accountings of the origins of their own people in favor of a hypothesis that creates a mythic genealogy for them that aligns with what Acosta considers legitimate.⁴⁴ In Book 1 Chapter 25, “What the Indians Report of Their Beginning,” Acosta writes, “It is no matter of any great importance, to know what the Indians themselves report of their beginning, being more like vnto dreames, then to true Histories” (79). Even though Acosta’s advertisement to the reader preemptively lauds himself for being the first to “maketh mention of the histories of the antient Indians, and naturall inhabitants of the New World” (3), therefore the first to ostensibly portray a holistic accounting of the history of the region, in practice he

⁴²In addition to Grimstone’s English translation of Acosta’s text, there were also several Spanish editions as well as Italian, French, Dutch, German, and Latin editions printed between the late sixteenth and eighteenth century, with most appearing in the early seventeenth century. For more, see Theodore Hornberger, “Acosta’s ‘Historia Natural y Moral de Las Indias’: A Guide to the Source and the Growth of the American Scientific Tradition,” *Studies in English*, no. 19 (1939): 139-162, esp. 141.

⁴³Wallace Cleaves, “From Monmouth to Madoc to Māori: The Myth of Medieval Colonization and an Indigenous Alternative,” *English Language Notes* 58, no. 2 (2020): 25.

⁴⁴It is important here to recall ecophobia’s formulation of the relationship between control and fear, in which the desire for and practice of colonial control is motivated by fear and anxieties of authority. As I discuss through this chapter, Acosta’s narrative attempts to control the depiction of a collective’s history, often by manipulating environmental rhetoric or imagery. This attempted control over groups of people thus parallels an attempted control, manipulation, or mastery of environments.

immediately betrays his subjective and quite limited view of what constitutes a legitimate history identified through “scientific” means. Acosta demonstrates a disregard for Indigenous oral traditions, pointing to their ‘lack’ of textual histories as evidence of a ‘lack’ of knowledge, which he blames for his own difficulty to “set downe” their history:

It is easier to refute and contradict the false opinions conceyved of the Originall of the Indians, then to set downe a true and certaine resolution; for that there is no writing among the Indians, nor any certaine remembrances of their founders: neyther is there any mention made of this new world in their bookes that have knowledge of letters. (77)

Because “there is no writing” among the Indigenous peoples of what he calls Peru and the Quechua call Aymara, Acosta claims that their own accounts of their histories are “more like vnto dreams.” This is the basis for Acosta’s counterargument and rebuttal: he states explicitly his intention to “refute and contradict the false opinions conceyved” of by the Indigenous population of Aymara.

In Cleaves’ discussion of the English colonist and occultist John Dee, he notes how Dee exhibits an “internal ‘response bias’ in which he privileges only the research findings that support the outcome he desires [...] It is a curious and specious argument, but certainly of a kind that many modern researchers continue to make.”⁴⁵ Acosta engages just such a response bias, privileging his own methodology of historical accounting. Acosta writes that rather than his privileged “bookes, or writing [...] they vse counting with their *Quipocamayes*, the which is particular vnto them. But which

⁴⁵Ibid., 26.

reckoning all they can report is not past 400. Yeeres” (80). Taking what is “particular vnto” his own people as the universal standard of record keeping, Acosta dismisses the practice of the “*quipucamayoc*, keepers of the colorful, knotted cords (*quipus*) on which Andeans kept their records.”⁴⁶ In practice, *quipucamayoc* used *quipus* to record “wills, land deals, and other transactions in alphabetic Nahuatl, Yucatec Maya, and other languages.”⁴⁷ *Quipu*, the “textual practice of reading, braiding, and weaving threads”⁴⁸ likely date back to roughly 2,500 BCE and were used by both high officials and local leaders to record everything from economic data to histories.⁴⁹ *Quipu* in turn

gave rise to a multitude of other practices (dancing, painting images, oratory, making libations, praying, singing, playing music) and regional textual forms (cloth and braid, glyph and song) that stem from common weaving elements. All of these diverse practices are generated from predetermined additive sequences based in cloth. As communication media, such textual practices reproduce the modes of production of Andean societies grounded in particular territories.⁵⁰

As such, *quipu* and their keepers, the *quipucamayoc*, are engaged in a complex, nuanced, and thousands of years old recording practice that Acosta dismisses out of hand.

⁴⁶Kathryn Burns, “Making Indigenous Archives: The Quilcaycamayoc of Colonial Cuzco,” *The Hispanic American Historical Review* 91, no. 4 (2011): 666.

⁴⁷Ibid., 668.

⁴⁸Denise Y. Arnold and Juan De Dios Yapita. *The Metamorphosis of Heads: Textual Struggles, Education, and Land in the Andes* (Pittsburgh: University of Pittsburgh Press, 2006), 20.

⁴⁹“Quipu.” *Britannica*, <<https://www.britannica.com/technology/quipu>>

⁵⁰Arnold and De Dios Yapita, *The Metamorphosis of Heads*, 20.

Acosta's main argument with the *quipucamayoc* seems to be that their conclusion about their origins differs from Acosta's, therefore cannot possibly be correct—exemplifying the “response bias” Cleaves identifies in Turtle Island contexts. Acosta says he has “found them so farre vnable to give any reason thereof, as they believe confidently, that they were created at their first beginning at this new world, where they now dwell” (80). Acosta's unmovable assumption is that the Indigenous people of Turtle Island and Abya Yala, like himself and the peoples he is familiar with, “came from the first man” (80), Adam, and thus cannot be truly Indigenous to Aymara.

This insistence would remain constant among colonial “research” through the twentieth-century, re-iterated as a secular colonial idea called the “Clovis First Hypothesis,” which decreed that humans arrived in what is now called North America “approximately 13,000 to 13,500 years ago” during the last Ice Age,⁵¹ despite centuries of Indigenous folks across diverse tribal nations maintaining that their people have been on their land since time immemorial. Cree-Métis archaeologist Paulette Steeves deconstructs the colonial logic of the Clovis First Hypothesis in great detail.⁵² She discusses the hitherto dismissed archaeological sites that suggest human presence on Turtle Island and Abya Yala in the Pleistocene era, which stretches from 2.58 million to

⁵¹Steve Moyer, “The First Americans.” *National Endowment for the Humanities* 35, no. 2 (2014), <<https://www.neh.gov/humanities/2014/marchapril/feature/the-first-americans>>

⁵²See: Pauline Steeves, *The Indigenous Paleolithic of the Western Hemisphere* (Lincoln: University of Nebraska, 2021). Though I discuss only one aspect of Steeves' multi-faceted work, she addresses all manner of problematics with the Clovis First Hypothesis and the field of colonial anthropology writ large—ranging from its dating to the way it homogenizes a diverse group of peoples to its historic rejection of Indigenous knowledge.

11,700 years ago.⁵³ Steeves' work uses Indigenous archeology and methodology to establish that "Indigenous people have been here in the Western Hemisphere since time immemorial, they have always known this."⁵⁴ The *quipu* Acosta encounters, and his accounting of what Indigenous people report of their own beginning—"that they were created at their first beginning at this new world, where they now dwell" (80)—also suggest such a thing.

As Acosta's "response bias" and colonial criteria are not satisfied, he endeavors to undertake a process of deductive reasoning to arrive at his preconceived conclusions, using environmental imagery of tempest and shipwreck to create an alternative history for the Indigenous peoples he encounters. Much of the first book is filled with his accounting of various hypotheses concerning where all the people and animals on this "new" world came from, and how they arrived. Acosta is perhaps most famous for being the first to suggest that they arrived via Asia on a land bridge: "the new world, which we call Indies, is not altogether severed and disioyned from the other world: and to speake my opinion, I have long beleaved, that the one and the other world are ioyned and continued one with another in some part" (67). This hypothesis would eventually be "scientifically" supported by the aforementioned, now-debunked Clovis First Hypothesis. This specific

⁵³Steeves discusses the colonial problematics of traditional archeology at length. Of using Indigenous research methods, she writes: "Archaeology has the potential when applied in decolonizing frameworks to address historical erasures in work that rewrites histories, which then become the basis of an informed historical consciousness. Histories that are written from an Indigenous perspective challenge Western--centered simplifications, erasures, silencing, and distortions of the Indigenous past" (*Indigenous Paleolithic*, 18). For details on Steeves' "Indigenous archeology and Indigenous method" see 19-25.

⁵⁴Ibid., 187. Steeves additionally has an Open Access website and database that presents her findings in detail, called "[The Indigenous Paleolithic](#)."

conjecture ends up being Acosta's favored hypothesis. He also considers, though he finds it less likely, that humans may have arrived via sea.

Of the various possibilities that would result in that, his favored hypothesis is that people "came to the *Indies* [...] by shipwracke and tempest of weather" (64). There is little to support this particular environmental imaginary except for Acosta's previous knowledge about colonial experiences with tempest and shipwreck. In particular, tempest and shipwreck are two events that threaten the colonial enterprise in the "new" world, and thus threaten the very "authority of the European subject."⁵⁵ As a form of large-scale, often catastrophic environmental phenomena, they fall into the realm of "explicit ecophobia" and can allow us to recognize how imaginaries of environmental fear are invoked as a way to negotiate colonial anxieties of agency and control. Acosta ultimately attempts to redeem colonial control, authority, and supremacy by weaving a tale of shipwreck into his possible origin story for peoples in what are now called the Americas.

Though shipwrecks and the tempests that anticipate them are an ancient narrative trope, Josiah Blackmore writes that this narrative type changed significantly during the "expansionist campaigns" of early modern Iberia.⁵⁶ In this context, "shipwreck represents on a first symbolic level the breaking apart of the ship of state as an economic entity and as the agent of imperialism and colonization."⁵⁷ It is here that we begin to see the relationship between the ecophobic representation of shipwreck and the extractive view.

⁵⁵Blackmore, *Manifest Perdition*, 33.

⁵⁶Ibid., xx.

⁵⁷Ibid., 44.

In order to understand the anxiety that underwrites the threat of shipwreck, it is important to address the role of the ship as an “economic entity,” as Blackmore writes, within the extractive colonial enterprise. Arturo Warman writes: “Vast riches, born of violence, flowed freely between the New World and the Old since the time of discovery [...] Plentiful American land and labor allowed for the production of those goods that were craved.”⁵⁸ Early modern travel writing like Acosta’s transformed “the New World into an object of inquiry and source of riches.”⁵⁹ As the land was systematically assessed and its materials were quantified and qualified, extracted labor from Indigenous peoples and eventually enslaved African peoples was used to extract these materials. The first half of Book 4 of Acosta’s *Historie* largely focuses on recording the details of various metals and gems found on Abya Yala and southern Turtle Island. In Book 4 Chapter 2, “Of the abundance and great quantitie of Mettall at the West Indies,” he writes that the lands hold a “diversit[ie] therefore of mettalls, which the Creator hath shut vp in the closets and concavities of the earth, is such, and so great, that man drawes profit and commoditie from everie one of them” (206). Further, the “principall end of mettalls” for the “life of man” is that he “must worke and labour according vnto the reason and capacitie which the Creator hath given him” (205-6). This rhetoric officially binds extraction of labor to extraction of material. Acosta remarks particularly on how Indigenous folks “vse no other

⁵⁸Arturo Warman, *Corn and Capitalism: How a Botanical Bastard Grew to Global Dominance*, trans. Nancy Westrate (Durham, NC: University of North Carolina Press, 2003), 15.

⁵⁹Betancor, “Mastering Nature,” 155.

mettalls, as copper, and yron” and “vsed no gold nor silver to trafficke or buy withall” (210), further justifying, in his mind, colonial extraction.

In his attempts to observe and catalog what he considers a failure to appropriately mine metals and make them useful to human trade and activity, Acosta remarks that while the Indigenous peoples he encounters use gold and silver for ornament, “no man digges it and refines it” (211). In Acosta’s paradigm, as Betancor explains, mined metals are “understood as imperfect, amorphous, and plastic matter that must be corrected (*beneficiada*), in order to refine them into a more perfect and perennial form.”⁶⁰ Acosta’s sustained attention to mining practice has a dual purpose: to establish the religious and cultural necessity of extracting and refining metals, and to refine or transform Indigenous communities into forced laborers performing this work for the Spanish enterprise, the result of which “determines both the success and failure of the universal Catholic monarchy.”⁶¹ As Betancor points out, Acosta’s lingering comments on extractive mining and refining are placed within a book on natural history rather than moral history, revealing how “providential order of the natural world is directly related to the evangelical enterprise and the administration of a secular colonial government.”⁶² Acosta’s cataloging of these practices in his chapters on natural and providential order is

⁶⁰Ibid., 183.

⁶¹Ibid.

⁶²Ibid., 188.

thus a literal attempt to “naturalize” extractive practices and gain divinely-sanctioned control over Indigenous environments.⁶³

It is Acosta’s view that these materials have been placed in their respective geographical locations by a divine hand, and it is likewise divinely sanctioned to extract these materials for colonial purposes. Indigenous peoples have not used these materials sufficiently to “trafficke or buy withall” (210). In Acosta’s hands, these materials become marketable goods to the European consumer, and within that context, ships become vital to this colonial enterprise of cataloging, extracting, refining, marketing, and disseminating these materials back to the European consumer. A shipwreck, by extension, is a direct threat to this imperial vision. Josiah Blackmore writes that the “breakage, rupture, and disjunction”⁶⁴ introduced by shipwreck “troubles the hegemonic vision of empire evident in the accounts of the canonical actors of colonialism.”⁶⁵ As we see in Acosta, an entire colonial identity and enterprise can be conceptualized against the backdrop of material extraction; the threat of shipwreck thus threatens this identity and the supposed authority it conveys in totality. Blackmore writes that shipwreck “effects a forced abdication of knowledge on the part of the writer who would otherwise construct an authority of the European subject moving through (and dominating) extra-European spaces.”⁶⁶ The fear of shipwreck—the collapse of an entity carrying the extracted

⁶³Though I ultimately tie Acosta’s focus on mineral extraction back to shipwreck, Estok notes: “Any kind of commodification of nature must be inherently ecophobic” (*Ecocriticism and Shakespeare*, 38).

⁶⁴Blackmore, *Manifest Perdition*, xxi.

⁶⁵Ibid., xxi.

⁶⁶Ibid., 33.

material of colonial enterprise—becomes a metonym for anxieties about colonial control and authority writ large.

It is worth noting at this point that Acosta is unique among his contemporaries for commenting on the brutality and injustice perpetrated against Indigenous communities by the Spanish Empire. For instance, though he extols the necessity of extraction and refinement of mined materials, he also describes the “inhumane working conditions” inside the mines.⁶⁷ Ultimately though, Acosta “justifies the infernal violence materialized in the mining business in the name of the administration and evangelization of the Indies,”⁶⁸ undermining his cursory exploration of sympathy toward the wellness and autonomy of Indigenous peoples. Similarly, when exploring his hypothesis that people arrived on the Abya Yala and Turtle Island via sea using the art of navigation, he asks his reader, “Why might not this well be? Must we believe, that we alone, and in this our age, have onely the Arte and knowledge to saile through the ocean?” (52). Despite this bit of self-reflexive reckoning, Acosta ultimately jettisons it from his narrative as quickly as it enters, declaring instead: “But to say the truth, I am of a contrary opinion, neither can I persuade my selfe, that the first Indians came to this new world, of purpose, by a determined voiage” (53). In an era where tempest and shipwreck so greatly threaten the colonial ship and the enterprise they represent, purposeful navigation to the Americas by Indigenous people is not a hypothesis Acosta is willing to entertain. Entertaining such a

⁶⁷Betancor, “Mastering Nature,” 152.

⁶⁸Ibid., 154.

possibility would indeed run counter to the larger project of his *Historie* as a whole, which uses the pretense of empirical reasoning to rubricate the people, plants, and materials of the “new” continents under the guise of objectivity, while in fact reasserting colonial Europe’s claims of cultural, political, and religious supremacy. Despite his brief digression into rhetorical questions that seem to de-exceptionalize the colonial European endeavor, Acosta cannot ultimately admit that people he considers “barbarous and vncivill” (78) could perform acts of purposeful navigation that Europeans, until relatively recently, could not.

Instead, he claims that Indigenous peoples can only have arrived “against their wills, driven by the furie of the winds [...] by shipwracke and tempest of wether,” (62, 64). Acosta repeats a disavowal similar to his dismissal of the *quipu*’s function as a historical record, participating once again in the long tradition of European colonists denying Indigenous Americans sovereignty over their land and history by marketing fictional origins built on nothing but colonial—and in this case, evangelical—fantasy. For Acosta, a Jesuit missionary, the phenomena of tempest and shipwreck are entwined with religion. In Book 1 Chapter 17, he discusses the adamant stone, an ancient mythological stone thought to assist navigation by sea. Acosta disparages men who look to the adamant stone to save their ships from tempest and wreck, writing,

I take more pleasure and content [...] to praise the power and greatnes of the Almightye, and reioyce in the contemplation of his admirable workes, and to say with Solomon, speaking vpon this subiect, *O father whose providence governes and maintaines a peece of wood, giving it an assured way vpon the sea, and in the midst of the swelling waves, to shew, that in the like sort, thou canst save and deliver man from all perill and shipwracke.* (56-7)

Acosta constructs tempest and shipwreck as an environmental threat which the Christian sailor can only be delivered from by God, should he be so inclined.⁶⁹ On the flip side, the non-Christian sailor lacks this protection and is therefore at the whims of fearful environmental phenomena like the “perill” of “swelling waves.” While colonists find an “assured way vpon the sea” from Europe to the Americas and subvert the fearful, unpredictable tempest and wreck by appealing to “the power and greatnes of the Almighty” (most of the time, at least), the Indigenous peoples of America are a “barbarous people,” he reports, who “contented not themselves to have gods onely, but they had goddesses also” (354-5), thus have no one to “deliver” their ships safely.

As scholars of shipwreck studies like Josiah Blackmore make clear, the fear of shipwreck is tied to the “imperialistic, textual agenda” of early modern colonists.⁷⁰ Blackmore notes that “there is a problematic relationship between the claims shipwreck authors sometimes make (such as the affirmation of European superiority over the inferiority of indigenous populations, a mainstay of expansionist thought) and the evidence of the narratives.”⁷¹ The overwhelming “evidence” is that tempest and shipwreck were marketed as a fearful specter to the colonial imaginary, and that the fate of a ship carrying its extracted goods operated as a microcosm of the colonial project at

⁶⁹This calls to mind my discussion of Julian of Norwich’s deep-sea vision in Chapter 2, wherein she claims that faith in God can keep humankind safe in any extreme environment, even the deepest parts of the ocean.

⁷⁰Blackmore, *Manifest Perdition*, xxi.

⁷¹*Ibid.*, 41.

large. Since shipwreck was unavoidable, it thus unavoidably upsets “the imperative of order and the unifying paradigms of ‘discovery’ or ‘conquest’”⁷² that animate the colonial project. Acosta’s use of environmental rhetoric of tempest and shipwreck to fallaciously explain the origins of Indigenous peoples on Turtle Island and Abya Yaya attempts to implicate Indigenous people in this same rupture that threatens the colonial enterprise, mapping the metonym of shipwreck onto their own societies. In Acosta’s hands, the explicit ecophobia of tempest and shipwreck becomes a weapon of deny autonomy, as he manipulates environmental rhetoric to justify his extractive and ecophobic relationship with original American peoples, their histories, and their continent.

Implicit Ecophobia: Maíz

If tempest and shipwreck are large-scale environmental phenomena that produce anxieties of rupture in the colonial enterprise, colonists approach the indigenous foods of Abya Yala with an implicit ecophobia that denotes anxieties of rupture on the level of individual bodies. Rebecca Earle discusses how food interacts with another unavoidable factor colonists had to negotiate: climate. As one of the six non-naturals that affected one’s humoral disposition, the climate or “air” of the Americas was a foremost consideration among all European colonists.⁷³ Indeed, Acosta spends the entirety of the second book of his *Historie* and the beginning of the third discussing the climate and

⁷²Ibid., xxi.

⁷³Rebecca Earle, *The Body of the Conquistador: Food, Race, and the Colonial Experience in Spanish America, 1492-1700* (Cambridge, UK: Cambridge University Press, 2012).

climatic phenomena of what he calls “the burning zone,” the equatorial “torrid zone” ancient geographers took to be uninhabitable, but colonists found were quite inhabited in actuality. However, as Earle writes, “A change in climate could thus be managed through careful attention to diet, but the converse could not be said for a change in diet.”⁷⁴ The foodscape of Abya Yala was dominated by foods unfamiliar to colonists, like cassava and maíz.

As another of humoralism’s non-naturals, food could substantially alter one’s humoral disposition, therefore one’s character and identity on a fundamental level.⁷⁵ As such, Earle contends that “we cannot understand the nature of early modern colonialism if we do not attend to the multi-layered importance colonisers ascribed to that most quotidian of activities, eating.”⁷⁶ Eating, unlike the fraught ship voyage with its looming and fearful threat of tempest and wreck, is indeed “quotidian” by contrast, yet fraught nonetheless. Earle writes, “Far from being an enterprise based on an unquestioning assumption of European superiority, early modern colonialism was an anxious pursuit,” particularly in regard to how an “unfamiliar environment [...] might alter not only the customs but also the very bodies of settlers.”⁷⁷ As Estok has noted, ecophobia is fundamentally about “society’s deepest misdirected fears and anxieties,”⁷⁸ which are then

⁷⁴Rebecca Earle, “‘If You Eat Their Food’: Diets and Bodies in Early Colonial Spanish America,” *The American Historical Review* 115, no. 3 (2010): 696.

⁷⁵Earle, *Body of the Conquistador*, 25.

⁷⁶Ibid., 3.

⁷⁷Ibid., 3.

⁷⁸Estok, “Introduction,” 381.

mapped and marketed onto environmental objects or phenomena. Critics such as Earle and Gitanjali Shahani write persuasively on the connection between colonial anxieties and early modern foodstuffs. Here, I work within this lineage of criticism and frame it more explicitly within the context of ecophobia. Using theories of ecophobia to speak to these relationships highlights certain rhetorical work and hierarchizations that follow from implicit ecophobia and reiterate themselves across *The Tempest*.⁷⁹

An important aspect of Acosta's use of implicit ecophobia in his descriptions of maíz can be better explained alongside Homi Bhabha's iteration of "colonial mimicry": "the desire for a reformed, recognizable Other, as a *subject of difference that is almost the same, but not quite*."⁸⁰ This phenomenon of being "almost the same, but not quite" introduces an ambivalence between an entity which "does not merely 'rupture' the [colonial] discourse, but becomes transformed into an uncertainty which fixes the colonial subject as a 'partial' presence."⁸¹ As previously discussed, shipwreck serves as a moment of explicit ecophobia which ruptures the narrative of colonial authority and enterprise. When discussing food, writers like Acosta occasionally impose a type of "colonial mimicry" onto colonized peoples, which does not merely rupture, but transforms and exposes the colonial identity as one of uncertainty. Therefore, the

⁷⁹For the relationship between ecophobia, veganism, and meat in the twentieth and twenty-first centuries, see Simon Estok, "Animals, Ecophobia, and Food," in *The Ecophobia Hypothesis* (London: Routledge, 2018), 92-118. In *How to Make a Human: Animals and Violence in the Middle Ages*, Karl Steel expands upon the medieval European relationship between animal butchery and human identity formation, including anxieties of identity.

⁸⁰Homi Bhabha, "Of Mimicry and Man: The Ambivalence of Colonial Discourse," *October, Discipleship: A Special Issue on Psychoanalysis* 28 (1984): 126.

⁸¹*Ibid.*, 127.

“question of the representation of difference” via this colonially imposed form of mimicry is “always also a problem of authority,”⁸² just as the disruption of the colonial ship is also a problem of authority.

Acosta’s first sustained description of maíz reads thus:

I do not thinke that this Mays is any thing inferiour to our wheat, in strength nor substance, but it is more hote and grosse, and engenders more bloud, wherevpon they that have not bin accustomed therevnto, if they eat too much, they swell and become scabbed. (254)

This description is situated in the *Historie*’s fourth book, which reflects on “Mettalls, Plants, and Beasts” (203).⁸³ Acosta’s description of maíz immediately situates it within the realm of European humoral discourse, thus nesting his account of indigenous American foods within his purportedly objective, scientific catalog. Like many of Acosta’s descriptions, it seems at first to take a more moderate view than his contemporaries, who mark maíz as “alien and unchristian” at best and “demonic anti-bread”⁸⁴ at worst. Acosta declares that what he calls “Indian bread” (253) is not “inferior” to “our” wheat—that is, the European wheat grain from which is made both bread and Host. If we peer through Acosta’s “moderate” description and re-read this passage with an eye toward implicit ecophobia, we see his experience of maíz as an encounter with an

⁸²Ibid., 130.

⁸³This description resides in the same section as Acosta’s dissertation on mining. His logic in linking these three entities in a book on “Naturall” histories is thus: “mettalls be plants hidden in the earth, so we may say, that plants be living creatures fixed in one place” (204). All three of these are goods that are commodified and cataloged, therefore, in Estok’s logic, the entire book is rife with ecophobia in a broad sense, and—I might add—with logics of extraction.

⁸⁴Earle, *Body of the Conquistador*, 152.

uncanny, almost familiar food that, when compared to European wheat, is “almost the same, but not quite.”

Despite Acosta’s claim that maíz is not “inferior” to bread, Earle comments on how the

uncertainty over whether these foods were like bread, or were on the contrary something fundamentally different from bread, may be seen in the linguistic inconstancy of José de Acosta’s comment that his chronicle would show “what sort of bread there is in the Indies and what they use in place of bread.”⁸⁵

Acosta imposes a type of “mimicry” onto maíz, declaring that, though it seems like wheat, it is more humorally unstable and volatile. The colonial consensus was that Indigenous Americans were either phlegmatic or melancholic, while Spaniards like Acosta were choleric.⁸⁶ With one of the two “cold” humoral dispositions, the Indigenous peoples of Abya Yaya were “accustomed” to consuming maíz, which is “hote” and “grosse.” To the choleric European body however, maíz is dangerous, injurious, and something to be wary about if not downright fearful toward.

Earle writes that colonial concerns over the humoral make-up of indigenous American foods “spoke directly to Europeans’ worries about the physical integrity of their bodies, and about the maintenance or dissolution of the most fundamental of colonial divisions: that between the bodies of the colonizers and the colonized.”⁸⁷ To

⁸⁵Ibid., 153.

⁸⁶Earle, “If You Eat Their Food,” 691.

⁸⁷Ibid., 713.

return to Bhabha's theorization of colonial mimicry, this almost-but-not-quite wheat threatens not only to "rupture" but to "transform" the colonial body. This instability in colonial identity implicitly reveals anxieties of authority in which the purportedly "civilized" body of the colonizer is not only *not* inherently superior to colonized, racialized, and marginalized subjects, but consumption of certain plants may reveal the hidden fear that this body is not fixed or authoritative, *at all*. Thus, the very environment of Abya Yala itself threatens colonial self-construction.

When it comes to food, the early modern humoral body, and "discourses about human difference, it becomes clear that fluidity, rather than fixity" defined one's body, and as Earle writes, "this fluidity had striking implications for the coherence of colonial ideology."⁸⁸ It is this fluidity in the face of a new environment that engenders colonial "phobia." Even Acosta's brief and relatively moderate description of maíz reveal the cracks and weak points in the European colonists' self-construction, and thus, the contradiction inherent in the colonial project as a whole. Reading Acosta's description for this implicit ecophobia, we can see how ecology and race-making are deeply intertwined projects, to the point that consumption of maíz becomes a site of potential compromise for the self-fashioned white Christian European body—especially given Gitanjali Shahani's observations that the early modern period marks a moment in which "food comes to be inscribed with racial character."⁸⁹

⁸⁸Earle, *The Body of the Conquistador*, 5.

⁸⁹Shahani, *Tasting Difference*, 5.

The “mimicry” Acosta assigns to maíz reveals not only anxieties surrounding the physical European body, but the religious one as well. Acosta entwines his discussion of maíz with his discussions of “idolatry,” adding another layer to the “colonial mimicry” he is ascribing to this staple food. It is important to note here that maíz has a powerful place in Indigenous cultures independent of Acosta’s ecophobic stylings: one point that Acosta *is* correct on is that maíz “is found almost in all the kingdoms of the West Indies” (254) and has a place of primary importance among them. In *Our Sacred Maíz Is Our Mother: Indigeneity and Belonging in the Americas*, Roberto Cintli Rodríguez recounts how “all maíz-based peoples of the Americas have stories of how maíz came to them.”⁹⁰ Rodríguez writes that Cuna Kaqchikeles elders Franciso Pos and Irma Tzirin Socop say, “the corn is viewed as Mother Maíz, Qanan Ixim, in the K’iche’ language and culture, because our sustenance depends on her, because her existence is the reason to be happy and to have hope in life.”⁹¹ For Cuentepec elder Paula Domingo Olivares, maíz “cannot grow without human care and human beings cannot grow without maíz. It is our Indigenous belief. ‘We are men and women of maíz.’”⁹² These accounts establish a spiritual, mutualistic symbiosis between both species, human and maíz. According to Rodríguez, Mayan and other Indigenous Mesoamerican calendrical systems begin “June 16, 3122 BC, or Hun Nal Ye, [which] marks the ‘First Seed of Maíz’,”⁹³ and many

⁹⁰Roberto Cintli Rodríguez, *Our Sacred Maíz Is Our Mother: Indigeneity and Belonging in the Americas* (Tucson: University of Arizona Press, 2014), xxiv.

⁹¹Ibid., 26.

⁹²Ibid., xvi.

⁹³Ibid., 29.

Indigenous creation stories account for the gift and care for maíz⁹⁴—the staple grain thus becomes the cornerstone for multiple aspects of society. While the ecophobia I discuss in Acosta’s descriptions of maíz is categorized in the framework of this chapter as *implicit*, his erasure of the rights of Indigenous people to self-determine with regards to their own religion, history, food, land, and bodies is not implicit, nor innocent.

In Book 4 of the *Historie*, as previously discussed, Acosta discusses the “naturall” history of maíz, alongside other plants, metals, and animals. He briefly describes in this book how “Mays serves the Indians, not only for bread, but also for wine” (255), as maíz is made into a corn beer called *chicha* via a brewing and fermenting process. The anxieties around whether maíz was like wheat was particularly significant “because of the central place that wheat bread occupied in Catholicism through its role in Holy Communion: wheat bread was the substance that became the body of Christ.”⁹⁵ Acosta’s testimony describes maíz becoming—or mimicking, in his reckoning—not only the “body” of Christ, but the “blood” as well, as it’s fashioned into *chicha*. In this book of “naturall” history, Acosta’s description stops here, but he returns to the relationship between maíz and “idolatri” as he turns to “morall” histories, demonstrating how he uses environmental rhetoric to bridge natural and moral topics.

Acosta hierarchizes various forms of idolatry based on their perceived proximity to European cultural and philosophical lineages. He compares the Nahuatl-speaking Mexica people, whom he refers to as Mexicans, and the Tawantinsuyu people, whom he

⁹⁴Ibid., xviii.

⁹⁵Earle, *Body of the Conquistador*, 149.

calls Incas, writing that the Mexica's "Idolatrie hath bin more pernicious and hurtfull then that of the Inguas, as wee shall see plainer heereafter, for that the greatest part of their adoration and idolatrie, was imployed to Idols, and not to naturall things" (337). For Acosta, the Tawantinsuyu people have committed a lesser crime by worshiping things of an "elementarie nature, as the moone, starres, sea, and land" (335). While this is clearly unchristian and heretical to Acosta, there is some hope of what he considers redemption, seeing as "even as the Greekes and Latins have forged "Idolls" of "naturall" phenomena (337). Acosta reasons that, for the Tawantinsuyu, like the ancient Greeks and Romans that early modern Europeans considered part of their own philosophical and cultural lineage, this reverence for nature is a promising sign, as "God hath created all these things for the vse of man" and thus, "they should consider how much more faire the Creator is, seeing that he is the Author of beauties and makes all things" (338).⁹⁶

For Acosta, a more pernicious form of idolatry is that of the Mexica, who worship what he calls "Idols":

The Divell hath not beene contented to make these blinde Indians to worshippe the Sunne, Moone, Starres, Earth and Sea, and many other generall things in nature, but hee hath passed on further, giving them for God, and making them subject to base and abiect [idols], and for the most part, filthy and infamous. (339)

In Acosta's hierarchy, this form of idolatry occupies a lower position than that of the Tawantinsuyu, as the "Divell" has presented a "God" that is "further" from recognizable

⁹⁶This negotiation of diverse Indigenous American cultures into lineages of European culture and mythology is a popular type of negotiation undertaken by colonial writers. Indeed, this logic is the basis for both Acosta's shipwreck and land bridge hypotheses discussed in the previous section. For more on these types of myths, see Cleaves.

forms of environmental “idolatry” that Acosta can negotiate into his European religious and philosophical frameworks. Here, we can begin to see how discussions of nature and elementality are weaponized in a hierarchization based in colonial logic, which sorts racialized peoples into forced competition with one another based on their perceived proximity to European standards of religiosity. These dichotomies say little about these Indigenous peoples themselves, but much about the colonial constructions.

In this book on “morall” histories, Acosta goes on to loop his discussion of maíz into the framework of what he considers the basest form of idolatry. In the chapter tellingly titled, “In what maner the Divell hath laboured in Mexico to counterfaite the feast of the holy Sacrament and Communion vsed in the holy Church,” he discusses the process of utilizing maíz in the construction of figures of worship:

[They] mingle a quantitie of the seede of beetes with rosted Mays, and then they did mould it with honie, making an idoll of that paste, in bignesse like to that of wood, putting insteede of eyes, graines of greene glasse, of blue, or white; and for teeth, graines of Mays [...] Virgins came out of their convent, bringing peeces of paste compounded of beetes, and rosted Mays, which was of the same paste whereof their idoll was made and compounded [...] They called these morcels of paste, the flesh and bones of Vitziliputzli. (393, 395)

Acosta classifies this as a direct mimicry of his own Christian sacrament, noting his “wonder to see the divell so curious to seeke to be worshipped and revered in the same maner that Iesus Christ our God hath appoynted and also taught, and as the holy Church hath accustomed” (397). Figures made of maíz, delivered by virgins and

consumed as the body and blood of the Nahua deity Huītzilōpōchtli, in “the same maner” as the wheat-based communion is eaten as the body of Christ in the Catholic sacrament.

We have traveled with the meanings of maíz to arrive at what Acosta perceives as of a type of inverse Eucharist. For Acosta, the staple crop maíz provokes colonial fear and anxiety surrounding “mimicry” not only for maíz’s humoristic qualities that threaten the body of the European colonist, but due to its key role as a tool for the “devill” to establish a mock-Eucharist. Acosta, more than other Spanish missionaries and colonists, accepts and acknowledges that “the Spanish Empire is founded on unjust conquest and violence.”⁹⁷ Ultimately though, this does not outweigh his goals as a Jesuit missionary, which are evangelization and conversion. Throughout his *Historie*, he uses explicit and implicit ecophobia in ways that reveal anxieties about the rupture and transformation of the colonial body (both the state body and the individual body), and to establish the extent of the supposed “pride, envy, deceipts, and ambushes of the Divell” (429), which ultimately—to him—justify the violence of the colonial project. Throughout, he uses environmental and ultimately ecophobic rhetoric that denote fear and anxieties of control in order to establish these paradigms. While maíz does not wield the transgressive force that a tempest or shipwreck does—indeed, while some might see it simply as another commodifiable and extractable feature of the ‘new’ land—is demonstrates the flexibility of ecophobia as a critical tool, able to read the ideological investments of both more overt and more subtle ecophobic moments.

⁹⁷Betancor, “Mastering Nature,” 151.

In the next section, I turn to *The Tempest*, where I consider the oft-discussed colonial constructions of Prospero via these registers of ecophobia apparent in Acosta's narrative. While Acosta attempts to naturalize these discourses with his self-styled objectivity and proto-scientific ethos, drama also attempts to invisibilize ecophobia, embedding its rhetoric within cultural paradigms that are subsequently echoed by centuries of academic criticism. By unpacking the naturalization of these discourses across time and genres, we can more readily reckon with the way ecophobia underlies twenty-first century academic and popular discourses.

The Tempest and its Critical Afterlives

When we turn to *The Tempest*'s famous opening scene of eponymous shipwreck, we see how the spectacle of the storm encodes ecophobic anxieties central to the colonial enterprise at the play's outset. The play's oft quoted and infamous first scene opens with auditory effects meant to invoke the fear of a potential wreck: "a tempestuous noise of thunder and lightning heard" (1.1 stage direction). We join a ship's crew as they fight to maintain control of their vessel as it struggles through the "roarers" of a howling storm. In the audio-visual context of the Shakespearean playhouse, the theatre audience would hear a clamor of fireworks and thunder-sheets, used to produce the auditory overwhelm characteristic of the eponymous tempest.⁹⁸ While it is impossible to know whether

⁹⁸For more on the noise effects in this line, see: Leslie Thompson, "The Meaning of 'Thunder and Lightning': Stage Directions and Audience Expectations," *Early Theatre* 2 (1999): 11-24; Michael Neill, "'Noises, / Sounds, and Sweet Aires': The Burden of Shakespeare's 'Tempest'," *Shakespeare Quarterly* 59, no. 1 (2008): 36-59; Keir Elam, "A Tempestuous Noise: on the Acoustics and Vocalics of Storms," in *Revisiting The Tempest: The Capacity to Signify*, ed. Silvia Bigliazzi and Lisanna Calvi (New York: Palgrave Macmillan, 2014), 137-150.

Shakespeare wrote the 1611 play to be performed in the indoor space of Blackfriars, constructed for the King's Men fifteen years prior, the improved acoustics of Blackfriars' wooden walls would certainly enhance the sensory overwhelm intended by the stage effects. Additionally, Michael Neill writes that this opening direction is "one for which there are very few precedents," as most contemporary directions focused on the "visual" rather than the auditory, perhaps creating an even greater emotional affect within the audience.⁹⁹ The message is clear: we are at the storm's mercy. The characters confirm as much when the highest-ranking human character in the play, Alonso, King of Naples, asks, "Where is the Master, boatswain?" (1.1.12), and the Boatswain quickly replies, "Do you not hear him?" (1.1.13). Human authority and the divine right that authenticates it is subverted in the heart of the storm. The Boatswain cries out to the Italian noblemen aboard:

If you can command these elements to silence
and work the peace of the present, we will not hand a rope
more—use your authority. If you cannot, give thanks you
have lived so long.
(1.1.20-23)

The boatswain's sarcastic remarks rhetorically invoke the supra-human power of the elements to draw attention to the limits of what traditional authority and state power can control. The boatswain invokes and manipulates rhetoric that alludes to the noblemen's courtly roles as councilors to the king and leaders of nations: their "command" and "authority" to "work the peace" is mockingly called into question. Behind this dig lies a suggestion that one's life and well-being hinges—at least in this moment—on this very

⁹⁹Neill, "Noises," 37.

ability to exercise control over the elements. Amid this tempestuous noise and water, command over the elements is essential to continued life, and human-made hierarchies of authority and control are anxiously qualified. While the boatswain's mockery is rhetorical, meant to quiet the argumentative Italian nobles, the consequences of his words are profoundly literal for a crew in rough storm-tossed waters, on the precipice of capsizing: authority, control, and the fear that their absence brings is a matter of life and death.

At the play's outset, this exchange foregrounds the blurry space between rhetorical and literal control, and importantly, it does so using the language of environmental fear. Earlier in this chapter, I discussed the phenomena of shipwreck, and its narrative and rhetorical role in the explicit ecophobia of Grimstone's 1604 English translation of *The Naturall and Morall Historie of the West Indies*. The 1611 *Tempest* also uses a dramatized shipwreck as a narrative tool. Unlike the types of ships discussed in Acosta's texts, which carry large groups of people place-to-place (and more implicitly regarding the colonial ship, mined goods), the wrecked ship in Shakespeare's *Tempest* carries a wedding party leaving Tunis for Italy after a marriage between the Tunisian king and Claribel, daughter of Alonso, King of Naples. While there is perhaps something to be said about the imperial politics of this marriage, Patricia Akhimie identifies travel in the play as the means by which Italian characters access what they envision as *terra nullius*, thus engaging the play in "in a larger discourse and debate about the availability of land

for ownership, the value of agricultural labor, and the value of laborers themselves.”¹⁰⁰

The play’s ship is thus one that “transports the English ideology of cultivation overseas,”¹⁰¹ preserving the ship’s colonial, metonymic status, albeit in a slightly different way, and thus also engaging the rupture in colonial authority and enterprise that shipwreck suggests.

The Italian noblemen aboard feel and deny this rupture. Antonio, who has usurped the dukedom of Milan from his brother Prospero and therefore perhaps has most cause to fear the subversion of his ill-gotten authority, refuses to accept that this elemental force has so suddenly overwhelmed their human capabilities. Even as the boat goes down, he insists, “We are cheated of our lives by drunkards” (1.1.51). Resisting the destabilization of colonial authority the wreck denotes, he insists the boatswain and other sailors are the ones who have doomed them, by not acquiescing to the authority of the noblemen aboard and appropriately guiding the ship in a way that would protect their lives.

In short order, the play’s audience finds out that, while Antonio is not *right* about the cause of their wreck, neither is he entirely wrong, as the tempest which has wrecked their ship is not a “natural” weather phenomenon, per se. As Miranda laments the sight of the wrecked ship from shore, her father Prospero—Antonio’s brother—tells her,

The direful spectacle of the wrack, which touched
The very virtue of compassion in thee,
I have with such provision in mine art
So safely ordered that there is no soul—
No, not so much perdition as an hair

¹⁰⁰Patricia Akhimie, *Shakespeare and the Cultivation of Difference: Race and Conduct in the Early Modern World* (New York: Routledge, 2018), 177.

¹⁰¹*Ibid.*, 155.

Betid to any creature in the vessel
Which thou heard'st cry, which thou saw'st sink
(1.2.26-32)

Prospero is certainly “breaking apart the ship of state” to recall Blackmore’s phrase—indeed, as he goes on to explain in the long-winded personal history he recounts for his daughter, the King of Naples Alonso, and his own brother Antonio, both aboard, conspired to displace Prospero and Miranda from the Milanese dukedom, and they were barely saved by a Neapolitan man Gonzalo, also aboard. Prospero has used his “art” to command the tempest to wreck the men in recompense.

However, it is Prospero’s “art” that has produced the spectacle of the wreck, not any material “power.” Firstly, Prospero’s wreck is all artifice in a literal sense, as he tells Miranda that the entire scene was a spectacle and in reality, the ship remains safe. Second, he has no direct power to manipulate environments or elements, but enslaves, manipulates, and abuses the spirit Ariel; Prospero’s true “power” is that of imposed colonial control. The man-made wreck of *The Tempest* attempts to subvert the usual rupture of shipwreck: no intangible, fearful, or unpredictable force controls the storm, but Prospero himself and his carefully laid plans. Though Prospero seems to rupture the “ship of state,” no nobleman’s life is *actually* threatened by this wreck, effectively defanging this “transgressive” natural force. The play’s eponymous *Tempest* is, at its very outset, already mediated by colonial power. Both Prospero and Shakespeare have, in effect, snuck one over on their audiences, conjuring the specter of environmental fear before revealing that it was all a construction of their art, seemingly shoring up their authority.

That said, this subversion of the usual rupture represented by shipwreck remains rife with ecophobia. Authority and control are tightened and flaunted—even Prospero calls it a “spectacle”—when most threatened. Prospero’s ultimate command over what Angélica Madeira calls the “elemental discord” of tempest and shipwreck¹⁰² hearkens back to what Brian Deyo calls “one of the most obvious instantiations of ecophobic discourse,” which “can be found in the book of Genesis.”¹⁰³ Estok also discusses this “constitutional moment in Western history,” which “has control as its key issue: the biblical imperative about human relations with nature gives Man (a man, actually: Adam) divine authority to control everything that lives.”¹⁰⁴ Here, “a man,” Prospero wields a form of “divine” authority himself, controlling the spirit Ariel and the tempests he conjures. Estok continues, “the more control we seem to have over the natural environment, the less we actually have”¹⁰⁵; Deyo adds that “the idea of a providential natural order mitigates against anxieties concerning nature’s unpredictability.”¹⁰⁶ Prospero *does* have control, but he does not “actually” have control over nature; he negotiates this instability by instead gaining control (via enslavement) of two of the island’s rightful denizens, effectively exercising his colonial influence to mitigate

¹⁰²Angélica Madeira, “Shipwreck narratives: between History and Literature. Reflections on História Trágico-Marítima (Tragic-maritime History),” *Limite* 12, no. 2 (2018): 106.

¹⁰³Brian Deyo, “Tragedy, Ecophobia, and Animality in the Anthropocene,” in *Affective Ecocriticism: Emotion, Embodiment, Environment* (Lincoln: University of Nebraska Press, 2018), 200.

¹⁰⁴Estok, *Ecocriticism and Shakespeare*, 5.

¹⁰⁵*Ibid.*, 5.

¹⁰⁶Deyo, “Tragedy, Ecophobia, and Animality,” 200.

anxieties that threaten his own colonial body (as with Acosta, this applies to both his state body and his individual body).

Lying tacitly beneath Acosta's descriptions of metals, shipwreck, and maíz, beneath the Boatswain's remarks, and beneath Prospero's man-made storm, is this thematic of control, which is central to ecophobia and often the motive behind ecophobia rhetoric: the invader's incentive to control a new land, its inhabitants, and their religion; to control what is perceived as "objective" or scientific observation and to market the information distributed to his home country and continent; a Boatswain's attempts to control inexperienced passengers who wield the ineffective trappings of state authority; an old man's attempts to regain his place in "civilized" society and the people he will gladly enslave to do so. Ecophobia underwrites all of these moments, as rhetoric is manipulated to evoke and market "fear" of environments, people, and elements.

Suparna Roychoudhury suggests that Shakespeare wrote in "a period of paradigmatic change, disciplinary reorganization, and general intellectual and epistemic expansion."¹⁰⁷ These changes are clearly and explicitly expressed in genres like Acosta's form of travel literature, with its overt attempts at "objectively" organizing new information, and the wide translation history of his *Historie* that suggests an immense popular appetite for consumption of these narratives. To that effect, Carla Mazzio's coda to Sophie Chiari and Mickaël Popelard's *Spectacular Science, Technology and Superstition in the Age of Shakespeare* draws attention not only to "what drama may have

¹⁰⁷Suparna Roychoudhury, *Phantasmatic Shakespeare: Imagination in the Age of Early Modern Science* (Ithaca, NY: Cornell University Press, 2018), 201.

done to science,” but to “what science may have done to drama” in an age when “Shakespeare ‘made visible’ the powers, limitations and metaphorical potential of scientific objects, ideas and practices [...] expos[ing] the already dramatic social and psychological stakes of early modern science.”¹⁰⁸ Indeed, to reiterate several salient points in the definition of ecophobia: it is not a “rational” fear but a fear of “frustrated agency”¹⁰⁹ that is mapped onto environmental phenomena and marketed to consumers of ecophobic narratives via language and rhetoric. In this way, while ecophobia iterates itself in “objective” proto-scientific writing like Acosta’s *Historie* as he attempts to mitigate anxieties of colonial authority and identity, it is certainly, to borrow Mazzio’s phrase, “already dramatic” and thus suited to theatrical representations as these negotiations move into the realm of popular drama.¹¹⁰

While Prospero’s ecophobic anxieties of authority and control are certainly on display in his control of the storm, nowhere are they clearer than in his treatment of Ariel and Caliban. When the play introduces Ariel and Caliban in Act 1 Scene 2, reading for

¹⁰⁸Carla Mazzio, “Coda: Scepticism and the Spectacular – On Shakespeare in an Age of Science,” in *Spectacular Science, Technology and Superstition in the Age of Shakespeare*, ed. Sophie Chiari and Mickaël Popelard (Edinburgh: Edinburgh University Press, 2017), 239.

¹⁰⁹Estok, *The Ecophobia Hypothesis*, 10.

¹¹⁰While considering the mutually informing discourses that link early modern genres such as travel narrative, science writing, and drama is fundamental to the logic of this chapter, the theorization that justifies this linkage is ultimately beyond its scope and, further, is explored with great expertise elsewhere. For more on this, see: *South Central Review* 26, no. ½ (2009_); Peter D. Usher, *Shakespeare and the Dawn of Modern Science* (Amherst, NY: Cambria Press, 2010); Dan Falk, *The Science of Shakespeare: A New Look at the Playwright's Universe* (New York: St. Martin’s Publishing Group, 2014); Iolanda Plescia, “The Language of Science in Shakespeare’s Time” in *Shakespeare and the New Science in Early Modern Culture*, ed. Maria Del Sapio Garbero (Pisa: Pacini Editore, 2016, 347-370; Sophie Chiari and Mickaël Popelard, eds. *Spectacular Science, Technology and Superstition in the Age of Shakespeare* (Edinburgh: Edinburgh University Press, 2017); Jennifer Park, “Shakespeare, Race, and Science: The Study of Nature and/as the Making of Race,” in *The Oxford Handbook of Shakespeare and Race*, ed. Patricia Akhimie (Oxford, UK: Oxford University Press, 2024), 373-394.

ecophobia shows how Prospero appropriates elemental rhetoric to create ecophobic constructions that reinscribe his colonial control and thus betray the anxiety underwriting it. In doing so, much like Acosta uses ecophobic rhetoric to hierarchize the Tawantinsuyu and Mexica people via what *he* considers their proximity to white, European, Christian identity, Prospero's constructions use elemental hierarchy to negotiate Ariel and Caliban as proximate, to varying degrees, to Prospero's own white, Christian, European identity. I argue that ecophobic rhetoric, here, becomes weaponized in Prospero's project to legitimize his control while situating an elemental competition between the two enslaved characters, Ariel and Caliban, and as he ultimately seeks to elide and invisibilize his own orchestrating hand in the very system he has created.¹¹¹ Finally, importantly, this normalized, ecophobic rhetoric permeates early scholarly discourse around these characters, creating—to again borrow Kyle Whyte's phrase—"insidious loops" of discourse in some spheres of *Tempest* criticism, beginning in the Romantic era.

Since the Ancient Greek philosopher Empedocles outlined his theory about the four "roots" of matter, classical, medieval, and early modern writers considered the four classical elements—water, earth, air, and fire—as foundational to all earthly entities.

¹¹¹It is worth mentioning again that these constructions of competition are just that: constructions. White supremacist ideologies ultimately profit when whiteness is invisibilized, when racialized groups are incorrectly interpreted as monoliths, and these monoliths are put in competition with one another against the invisible, "naturalized" or universalized, unreachable standard of whiteness. To the twenty-first century audience, this clearly calls to mind "the model minority" myth, a tool of systematic American inequality that "pits people of color against one another and creates a hierarchy in which Asian people are often represented at the top. By putting people of color in competition with one another, the myth distracts us from striving together toward liberation for all" (Sarah-Soonling Blackburn, "What is the Model Minority Myth?" *Southern Poverty Law Center*, 21 March 2019, <<https://www.learningforjustice.org/magazine/what-is-the-model-minority-myth>>). While by no means a direct comparison, this framework does allow us to consider the fundamental *constructedness* of Prospero's hierarchization and how it elides Prospero's active role in making and sustaining this hierarchy.

These elements were assigned attributes and often hierarchized, usually with fire or air atop the hierarchy. Anaximenes, for instance, “considers air to be a god, infinite and always in motion.”¹¹² Earth, by contrast, is “the grossest of the elements, settling at the very bottom of the cosmos.”¹¹³ Throughout the play, Prospero's rhetoric associates Ariel and Caliban with air and earth respectively. While, as Sasha Engellmann and Derek McCormack note, elements can be rhetorically used “offer compelling philosophical resources for complicating the dualistic and reductivist categories that have framed western metaphysics and politics for so long,”¹¹⁴ there is also a “the double edge of thinking with the elements as devices that can play into ‘master narratives’ about the organization of society and the state.”¹¹⁵ This dual possibility comes about because of the “particular tension” inherent to discussions about and invocations of the elements, in which they, on the one hand, “invoke or suggest something basic or fundamental to the composition or understanding of something else,” and on the other are necessarily “vague or excessive categories.”¹¹⁶ From their inception as Empedocles’ “roots,” the four classical elements are indeed considered “basic or fundamental” to the structure of people and environments; this in itself does not necessarily denote the stratified, colonial

¹¹²Gabriella B. Carone, “The Classical Greek Tradition,” in *A Companion to Environmental Philosophy*, ed. Dale Jamieson (Oxford, UK: Wiley, 2008), 68.

¹¹³Frederick A. De Armas, “The Four Elements: Key to an Interpretation of Villamediana's Sonnets,” *Hispanic Journal* 4, no. 1 (1982): 63.

¹¹⁴Sasha Engellman and Derek McCormack, “Elemental worlds: Specificities, exposures, alchemies,” *Progress in Human Geography* 45, no. 6 (2021): 1419.

¹¹⁵*Ibid.*, 1421.

¹¹⁶*Ibid.*, 1419.

hierarchization I suggest throughout this chapter, and indeed as Engelman and McCormack note, has the potential to offer a solution to this type of categorization.

However, the “vagueness” of the elements does leave them susceptible to such manipulation, wherein they become building blocks for the fashioning of colonial hierarchies of body and being, thus situating them as part of the “master narrative” Engelman and McCormack rightly suggest. We can see this master narrative begin to unfold within *The Tempest* moments after we are introduced to the spirit Ariel, whose very name denotes the airy element with which he is associated. Prospero engages in a ventriloquism of Ariel’s history on the island. Scott Oldenburg calls this a “question-and-answer format reminiscent of a catechism, a kind of indoctrination into a very specific belief system.”¹¹⁷ Much like Acosta imposes his own version of history onto a diverse people whose own recounting of their history he *claims* is “more like unto dreams,” Prospero embeds the answers he wishes to hear into the questions he asks, leaving Ariel only to respond in monosyllabic confirmation. In one of many examples, after recounting in a story that he claims Ariel “forget’st” (1.2.263) monthly, Prospero asks, “Is not this true?” leaving Ariel to reply only, “Ay, sir” (1.2.267-8). Like an investigator supplying leading questions, Prospero constructs his own version of Ariel’s history, a history that leaves no interpretive space for debating who the villain is and who the savior is in Ariel’s story.

¹¹⁷Scott Oldenburg, “The View from Here: The *Tempest* and Race in New Orleans,” *English: Journal of the English Association* 69, no. 264 (2019), 74.

Prospero begins to construct an elemental hierarchy when he recounts Ariel's previous enslavement by Caliban's mother Sycorax—a moment in which he also gives himself a rarefied and exceptional place in Ariel's story:

[...] thou wast a spirit too delicate
To act her earthy and abhorred commands,
Refusing her grand hests, she did confine thee [...]
Into a cloven pine, within which rift
Imprisoned thou didst painfully remain
A dozen years; within which space she died
And left thee there, where thou didst vent thy groans.
(1.2.272-4, 277-80)

Prospero sets up an opposition between Ariel's 'delicate' airiness and Sycorax's so-called 'earthy' commands. Ahmet Süner writes that the "figure of fear in *The Tempest* is the evil Sycorax [...] the form of a fundamental fear that shapes the thematic contents of the play."¹¹⁸ Prospero builds this ethos of fear surrounding Sycorax, one that hinges on earthen rhetoric. As he constructs her, Sycorax's earthiness is connected, via the conjunction "and," with the abhorredness of her commands. When Ariel's airy nature disallows him from carrying out these earthy comments, Prospero reports that he became completely encased in plant-life. Bringing the earth up around Ariel, she confines him in "a cloven pine." Jason Hogue writes that as Ariel "does time" in a tree, he "does not find any pleasure in 'becoming one with nature.'" In fact, his tree-immersion experience is very painful."¹¹⁹ Prospero has used this pain to cultivate an aura of fear for Ariel around

¹¹⁸Ahmet Süner, "'Be Not Afeared': Sycorax and the Rhetoric of Fear in *The Tempest*," *REN* 71, no. 3 (2019): 187.

¹¹⁹Jason C. Hogue, "Ariel's Anguish: Doing (Arboreal) Time in *The Tempest*," *ISLE: Interdisciplinary Studies in Literature and Environment* 28, no. 4 (2021): 1482.

ever becoming immersed in earth again: this fear—this weaponized ecophobia—is one he wields over the air spirit with great relish, celebrating his own role as “savior”:

Thou best know'st
What torment I did find thee in: thy groans
Did make wolves howl, and penetrate the breasts
Of ever-angry bears. It was a torment
To lay upon the damned, which Sycorax
Could not again undo. It was mine art,
When I arrived and heard thee, that made gape
The pine and let thee out [...]
(1.2.286-293)

Prospero reports that he recognizes the “torment” the air spirit felt in his earthy prison and was driven to free him. We begin here to see how Prospero organizes air and earth, taking classical principles that situate air at the top of the hierarchy, “always in motion,” and earth at the bottom, “the grossest of the elements,” and applying these traits to the beings around him, using these elemental principles to sort them via his colonial logic. This initial construction of elemental hierarchy in which earth is degraded elevates Ariel’s airiness by contrast. Importantly, these constructions reveal nothing about the inherent characteristics of the peoples in question, but rather, of how the colonial subject uses environmental rhetoric to map “inherent” qualities onto these groups that justify the control and authority the colonial subject wants to impose upon them.

Prospero’s cultivation of ecophobia and his emphasis on the power of his “art” to “let thee out” does not come without strings attached. If Ariel does not follow his commands, he “will rend an oak / And peg thee in his knotty entrails till / Thou hast howled away twelve winters” (1.2.294-6). Prospero’s ecophobic rhetoric of air and earth serves to fortify his ill-gotten mastery over Ariel, as he uses rhetorically conjured

ecophobia of the earthly element to control and enslave the air spirit. As has been argued elsewhere, this construction is highly hypocritical. Oldenburg writes that “Prospero seems to argue that even when his actions are substantially similar to those of Sycorax, they are to be judged by a different standard.”¹²⁰ Indeed, moments before the above scene, Prospero accuses Ariel, “Thou [...] think’st it much to tread the ooze / of the salt deep / to run upon the sharp wind of the north / to do me business *in the veins of the earth*” (1.2.252-255, my emphasis), and Ariel simply responds, “I do not, sir” (1.2.256). Prospero’s demands, too, are markedly earthy. While Ariel is absolutely not a willing servant,¹²¹ this demand of Prospero’s shows the degree to which the story of elemental hierarchization he imposes onto Ariel is simply that of his own making, constructed to suit what best serves his desire to control Ariel in any given moment.¹²² The characteristics of earth become, to an extent, a floating signifier that applies differently to different types of people. This conjures Stuart Hall’s formulation of race as a floating signifier, wherein attempts to ground racial differences objectively or scientifically are consistently shown to be inadmissible. This makes iterations of racial difference a socio-cultural formation whose definitions or attributes morph across cultural contexts, gaining

¹²⁰Oldenburg, “The View from Here,” 75.

¹²¹Melissa Sanchez writes, “Ariel is as reluctant to perform Prospero’s “earthy and abhorrent commands” (1.2.273) as he was to obey Sycorax” (“Seduction and Service in ‘The Tempest’,” *Studies in Philology* 105, no. 1 [2008]: 60).

¹²²Oldenburg continues, “Whether Prospero’s account is accurate or not, it is clear that he sees the story as useful in asserting his own identity and control” (“The View from Here,” 74).

meaning in its own, created signifying field¹²³—the earthen rhetoric here operates in a similar way. Prospero’s characterization of earth also recalls Oldenburg’s assertion that the gap between what Prospero claims about Sycorax’s earthy demands and his own is better described as “the ‘white magician’ appealing to white male privilege.”¹²⁴ There is no perceivable difference apparent between his and Sycorax’s orders, apart from the ecophobia Prospero constructs around the racialized character of Sycorax, which he markets to Ariel “[o]nce a month” (1.2.262).

By seeding his own version of Ariel’s history, Prospero creates a rhetoric of ecophobia around the element of earth before the reader officially meets Caliban, the character most associated with earth through the play. While meeting the man whom Prospero first addresses as “thou earth thou,” we hear some of Caliban’s backstory in his own words:

When thou cam’st first,
Thou strok’st me and made much of me, wouldst give me
Water with berries in ’t, and teach me how
To name the bigger light and how the less,
That burn by day and night. And then I loved thee,
And showed thee all the qualities o’ th’ isle,
The fresh springs, brine pits, barren place and fertile.
(1.2.332-338)

Here, we see something of Prospero’s ignorance and the implicit fear he has of this unknown land he desires to colonize; Prospero himself admits to Miranda, “as ’tis, / We cannot miss [Caliban]” (1.2.310-311). Though Prospero perpetuates a hierarchy of the

¹²³See: Stuart Hall, “Race, the Floating Signifier: What More Is There to Say about ‘Race’? [1997],” in *Selected Writings on Race and Difference* (Durham, NC: Duke University Press, 2021), 359-73.

¹²⁴Oldenburg, “The View from Here,” 74.

elements in which earth is the “grossest,” Caliban’s “earthiness” was valuable to Prospero when he first arrived on the island, as he is the only person who understands the island’s “fertile” places, as Charlotte Scott has argued.¹²⁵

As he does in his interactions with Ariel, Prospero thus brings hypocrisy to his interactions with Caliban. For instance, the current way that Prospero treats Ariel—styling him as “my dainty Ariel” or “my Ariel, chick,” (5.1.95, 318)—is much like what Caliban reports of Prospero’s past treatment of him, as he “strok’st me and made much of me” (1.2.333). Caliban’s self-reported backstory draws attention to how Prospero exploited him, extracting what Prospero considered useful knowledge from him, and then enslaving him when this extraction ran its course.¹²⁶ Prospero’s “extractive view” thus recalls many such figures in my previous chapters, who accumulate tangible or intangible capital from people or the environment, and then leave these entities behind with little thought for their continued wellness or autonomous existence. Gitanjali Shahani links this type of exploitation to the play’s island environment, writing that “island plays afford a vantage point from which to view the machinations of capital.”¹²⁷ This “vantage point”

¹²⁵See: Charlotte Scott, “Prospero’s Husbandry and the Cultivation of Anxiety,” in *Shakespeare’s Nature: From Cultivation to Culture* (Oxford, UK: Oxford University Press, 2014), 187-216, esp. 208.

¹²⁶Prospero’s “extractive view” thus recalls many such figures in my previous chapters, who accumulate tangible or intangible capital from people or the environment, and then leave these entities behind with little thought for their continued wellness or autonomous existence. Gitanjali Shahani links this type of exploitation to the play’s island environment, writing that “island plays afford a vantage point from which to view the machinations of capital” (*Tasting Difference*, 148). This “vantage point” recalls other extractive vantage points I have mentioned through this dissertation, such as the “birds eye view.” Though Shahani focuses on Prospero’s culinary magic performed for the shipwrecked nobles, she describes how he “stands invisible above, while manipulating the action at several levels, orchestrating the meal from a distance” (149).

¹²⁷Shahani, *Tasting Difference*, 148.

recalls other extractive vantage points I have mentioned through this dissertation, such as the “birds eye view.” Though Shahani focuses on Prospero’s culinary magic performed for the shipwrecked nobles, she describes how he “stands invisible above, while manipulating the action at several levels, orchestrating the meal from a distance.”¹²⁸ As Prospero manipulates the fearful specter of shipwreck to regain his lost imperial power and authority—displaced by Antonio—it is now Ariel who is most imminently useful to Prospero, drawing Prospero’s diminutives, ecophobic manipulation, and colonial constructions of elemental hierarchization alike.¹²⁹

In addition to being rhetorically fashioned by Prospero as “thou earth, thou,” Caliban is also degraded and dehumanized by other European characters. This reaches its fullest iteration in his interactions with Trinculo and Stefano. Upon seeing Caliban for the first time, Trinculo narrates: “What have we here, a man or a fish? Dead or alive? A fish, he smells like a fish—a very ancient and fishlike smell, a kind of not-of-the-newest poor-John. A strange fish” (2.2.24-26). Confronted by someone unlike anyone he has ever seen before, Trinculo’s infamous reaction betrays fear of the unknown, which immediately transitions into a series of dehumanizing—indeed, ecophobic—insults. Ecophobic rhetoric, ultimately, is not content merely to express fear, but advances narratives that “exploit these fears, that nurture and coddle them, and that magnify and pervert them to

¹²⁸Ibid., 149.

¹²⁹Importantly, there is no inherent opposition or competition between Ariel and Caliban—only in Prospero’s ecophobic construction of opposition between air and earth, which he imposes upon them. As I have briefly discussed, there are many moments of slippage and hypocrisy where the constructedness of this colonial binarism betrays itself.

sell a story or a product or a politician.”¹³⁰ Trinculo, of course, intends to “sell”

ecophobia in just this way, claiming:

Were I in England now, as once I was, and had but this fish
painted, not a holiday fool there but would give a piece of
silver. There would this monster make a man. Any strange
beast there makes a man. When they will not give a doit to
relieve a lame beggar, they will lay out ten to see a dead
Indian.
(2.2.26-31)

Trinculo here reveals the inherent relationship between ecophobia and racism: midway through his speech he switches between “strange beast” and “dead Indian.” Ecophobia is, as ever, extremely economically lucrative for the colonizing force. Trinculo’s words betray how environmental rhetoric can be used to exploit and market a fear of perceived strangeness for economic gain. But “strange” is quickly revealed to merely be code for racism and xenophobia—here, the environmental rhetoric he uses to label Caliban as a “fish” seeks to obscure and invisibilize this association. Trinculo’s speech demonstrates how environmental rhetoric can alternatively obscure and make evident racist hierarchies of personhood imposed by the colonial subject—Acosta, Prospero, Shakespeare himself.

Prospero has positioned the hierarchy of air and earth not as constructions that are man-made, but as something that simply *is*: displacing his own colonial agency in creating this hierarchy is a key factor in exercising his imposed control and authority over Ariel and Caliban. Caliban himself points out the constructedness of Prospero’s so-called power and authority. He eventually allies with Stefano and Trinculo due to the strength of

¹³⁰Estok, *The Ecophobia Hypothesis*, 8.

his hate for his enslaver, Prospero, and they decide to overthrow him. Caliban instructs them,

[...] Remember
First to possess his books, for without them
He's but a sot, as I am, nor hath not
One spirit to command. They all do hate him
As rootedly as I. Burn but his books.
(3.2.87-91)

Caliban's directive brings up two important details: that Prospero's power is lodged in his books, and that his spirits hate him as much as Caliban does. Ambereen Dadabhoy writes that Shakespeare, through Prospero, employs "the sinister technology of empire [...]" obfuscated under the guise of art, magic, and play."¹³¹ As I previously discussed in the play's opening scene of shipwreck, the ecophobic spectacle was not brought about by any "power" of Prospero's, but in his "art," a "technology of empire" which is employed in controlling *Ariel's* power. The control that Prospero styles himself as having over the elements is not in any way inherent to his person; it is entirely constructed through his magic books. In this talk of magic books, one cannot help but be reminded of travel narratives like Acosta's *Historie*, whose depictions of populations such as the Tawantinsuyu and Mexica "satisfied the European lust for the exotic and popularized

¹³¹ Ambereen Dadabhoy, "'May the odds be ever in your favor': Reading Shakespeare's *The Tempest* through the Hunger Games," *CEA Critic* 79, no. 1 (2017): 71.

fantasies of the colonial ‘Other’,”¹³² which was in turn used to justify colonial projects such as the genocide of Indigenous peoples and enslavement of African peoples.¹³³

The spectacle inherent in this colonial project has a natural co-conspirator in a popular genre like drama; Daniel Vitkus comments on the non-coincidence of “the opening of the commercial playhouses in London in the 1570s coincid[ing] with the revival and expansion of the English overseas economy[...a] cross-cultural moment [that] engendered an increased interest in people, places, and things that existed beyond the shores of Britain.”¹³⁴ This staged and dramatized exotica was brought to England in books—Acosta’s translation into English by Grimstone was testament to their popularity¹³⁵—and their ideologies spread through the population via multiple genres, which engaged with and disseminated ideologies most conducive to the burgeoning colonial project. The elemental manipulation and control centered in Prospero’s books provide an uncanny parallel to this larger project; that Prospero’s books can be so easily destroyed denotes, perhaps, the underlying anxiety surrounding the tenuousness of these systems of colonial hierarchy and the supposed control and authority they engender.

¹³²Susan Arndt, “Myths and Masks of ‘Travelling’: Colonial Migration and Slavery in Shakespeare’s *Othello*, The Sonnets, and *The Tempest*,” *Anglistentag 2008 Tübingen: Proceedings*, ed. Lars Eckstein and Christoph Reinfandt (Trier, GER: Wissenschaftlicher Verlag Trier, 2009), 213. Arndt goes on to say that this phenomenon found a “critical commentator” in Shakespeare, a point on which I vehemently disagree.

¹³³Also related, of course, is the pejorative view writers like Acosta take to the lack of books for record-keeping in Indigenous communities, which also speaks to the perceived “power” of books in establishing so-called legitimate narratives and power structures.

¹³⁴Daniel Vitkus, “Adventuring Heroes in the Mediterranean: Mapping the Boundaries of Anglo-Islamic Exchange on the Early Modern Stage,” *Journal of Medieval and Early Modern Studies* 37, no. 1 (2007): 75.

¹³⁵Acosta’s original 1589 narrative was translated by Grimstone in 1604; the first recorded performance of *The Tempest* is November 1, 1611.

While the ecophobic colonial constructions we can read throughout *The Tempest*, and the way that environmental rhetoric is manipulated to subjugate peoples are indeed disturbing, Arthur L. Little Jr. writes that “[w]hat disturbs here lies not in Shakespeare’s play but in our (un)critical habits.”¹³⁶ Little’s words ask critics: will we take the bait, and accept these as natural, scientifically objective distinctions? Perhaps unsurprisingly, the “magic books” of early *Tempest* criticism have in large part taken this bait offered by Prospero. Helen Tiffin has suggested that *The Tempest* was “part of the process of ‘fixing’ relations between Europe and its ‘others’, of establishing patterns of reading alterity at the same time as it inscribed the ‘fixity’ of that alterity, naturalizing difference within its own cognitive codes.”¹³⁷ If the ideological project of colonial travel narrative like Acosta’s *Historie* and contemporary drama like *The Tempest* is to use environmental rhetoric in ecophobic ways that “read” alterity into people via ecophobic rhetoric concerning elements or environmental factors, and additionally, to “fix” or naturalize these constructions—we might be justified in saying that this project *has succeeded* in a certain sector of criticism about the play.

Picking up on the critical dehumanization of Caliban, Jeffrey R. Wilson remarks that “Caliban’s body never comes to us uninterpreted [...] early critics like John Dryden and Joseph Warton envisioned a demonic Caliban [...] an earth creature, a fish-like thing, or an animal-headed man. Prospero’s derisions, ‘earth’ (1.2.313-4) and ‘mountain’

¹³⁶Arthur L. Little Jr., “Re-Historicizing Race, White Melancholia, and the Shakespearean Property,” *Shakespeare Quarterly* 67, no. 1 (2016): 95.

¹³⁷Helen Tiffin, “Post-Colonial Literatures and Counter Discourse,” in *The Post Colonial Studies Reader*, ed. Bill Ashcroft, Gareth Griffiths, and Helen Tiffin (London: Routledge, 2006), 101.

(4.1.255) encouraged Romantic critics like Schlegel, Coleridge, and Hazlitt [...] to imagine the islander as some outgrowth of the ground.”¹³⁸ These uncritical repetitions of Prospero’s rhetoric interpret his colonial constructs as objective fact. Etienne Balibar writes that “theories of academic racism mimic scientific discursivity by basing themselves upon visible ‘evidence’” (19). This is how “insidious loops” of ecophobia—indeed, racism—are integrated into academic discourse, and indeed, this is the reason why I began this chapter by discussing the scientific inclinations of Acosta’s narrative and the rhetoric it establishes. As Wilson pinpoints Romantic-era academic criticism as a key moment in which this rhetoric becomes naturalized, it is there I turn to first. While the project of assimilating colonial racism and subsequent constructions of white supremacist discourse into scientific paradigms may certainly be present and ideologically active in medieval and early modern travel narratives, the post-Enlightenment emphasis on scientific racism continues to leave massive traces on twenty and twenty-first century discourse, and it certainly set the stage for Romantic critics like Samuel Taylor Coleridge and August Wilhelm Von Schlegel to present their analyses in ways that perpetuate and normalize the ideological projects—expressed via ecophobia—that this chapter has identified across early modern genres.

In a lecture, Coleridge identifies Ariel as an embodiment of Shakespeare’s ‘genius’:

If a doubt could ever be entertained whether Shakespeare was a great poet [...] that doubt must be removed by the character of Ariel [...] In air he lives, from air he derives his

¹³⁸Jeffrey R. Wilson, “Savage and Deformed,” *Medieval and Renaissance Drama in England* 31 (2018): 146.

being, in air he acts; and all his colours and properties seen
to have been obtained from the rainbow and the skies [...] like a may blossom kept suspended in air by the fanning breeze.¹³⁹

The rhetoric used to describe Ariel echoes the diminutives Prospero uses to “strook’st” and make “much of” the air spirit. Coleridge’s description calls to mind Anaximenes’ characterization of air as “infinite and always in motion.” These characteristics are not only mapped onto Ariel but are assigned inherent qualitative value in Shakespeare’s designation as a “great poet.” Coleridge continues,

We feel that such a state of bondage is almost unnatural to him, yet we see that it is delightful for him to be so employed. It is as if we were to command one of the winds in a different direction to that which nature dictates, or one of the waves, nor rising and now sinking, to recede before it bursts upon the shore: such is the feeling we experience, when we learn that a being like Ariel is commanded to fulfil any mortal behest.¹⁴⁰

Though Ariel, due to his airy association, might sit atop this colonially constructed elemental hierarchy, Coleridge’s words implicitly remind us of the purpose of these constructed hierarchies to begin with. While he might claim that enslavement is ‘delightful’ for Ariel—a popular, if grotesque piece of pro-enslavement propaganda¹⁴¹

¹³⁹Samuel Taylor Coleridge and Thomas Ashe, “Lecture IX,” in *Lectures and Notes in Shakespeare and Other English Poets* (London: G. Bell and Sons, 1884), 140-1.

¹⁴⁰ Ibid., 141.

¹⁴¹Of Ariel’s eventual freedom, Coleridge says that, “We are sensible that the liberated spirit ought to be grateful” (141). Frederick Douglass discusses the myths that associate songs (Ariel sings multiple times within the play) with contentment in enslavement: “I have often been utterly astonished, since I came to the north, to find persons who could speak of the singing, among slaves, as evidence of their contentment and happiness. It is impossible to conceive of a greater mistake. Slaves sing most when they are most unhappy” (Frederick Douglass, *Narrative of the Life of Frederick Douglass: an American Slave*. *Ibiblio*, https://www.ibiblio.org/ebooks/Douglass/Narrative/Douglass_Narrative.pdf, accessed 15 March 2021, 12).

that is clearly disproven by both Ariel and Caliban's own reports—what is truly delightful to Coleridge is the (white) audience or reader watching Prospero subject a being such as Ariel to his control and commands. Command over Ariel is command over the elements themselves, again grouping Prospero's construction alongside ecophobia's Adamic "constitutional moment" in Western discourse.¹⁴²

In his ruminations on Caliban, Coleridge takes Prospero's hierarchization of Ariel and Caliban in stride, writing, "He is a sort of creature of the earth, as Ariel is a sort of creature of the air. He partakes in the qualities of the brute [...] all the images he uses are drawn from nature [...] Caliban gives us images from the earth, Ariel images from the air."¹⁴³ Von Schlegel uses a similar juxtaposition of the two figures: "In the zephyr-like image of Ariel the image of air is not to be mistaken, his name even bears an allusion to it; as, on the other hand Caliban signifies the heavy element of earth."¹⁴⁴ The qualitative adjectives Von Schlegel uses betray his bias: the soft grace of a zephyr for Ariel, and the burden of heaviness for Caliban. Like Prospero himself, Romance criticism embraces the false divide Prospero creates between the two beings he enslaves.

Regarding Caliban, Von Schlegel continues:

A mixture of gnome and savage, half daemon, half brute, in his behavior we perceive at once the traces of his native disposition, and the influence of Prospero's education [...] taming his rooted malignity: it is as if reason and human speech were communicated to an awkward ape [...] The magical world of spirits, which the staff of Prospero has

¹⁴²Estok, *Ecocriticism and Shakespeare*, 5.

¹⁴³Coleridge, "Lecture IX," 142.

¹⁴⁴August Wilhelm Von Schlegel and Alexander James William Morrison. "Lecture XXIV," in *Lectures on Dramatic Art and Literature* (London: G. Bell and Sons, 1889), 395-6.

assembled on the island, casts merely a faint reflection into
his mind, as a ray of light which falls into a dark cave,
incapable of communicating to it either heat or
illumination.¹⁴⁵

This clearly racist description falls into what Jeffrey R. Wilson calls the nineteenth-century critical styling of Caliban as the “Cro-Magnon man.”¹⁴⁶ Why Von Schlegel claims that Caliban has no understanding of the world of spirits is as mysterious as it is unsupported; as I have previously discussed, Caliban has a profound understanding of both Prospero’s books and the true feelings of the spirits that Prospero enslaves. The insults slung at Caliban are thus supported not by the text itself, but by the “insidious loops” of rhetoric that criticism has lifted from Prospero, as he struggles to justify his command over these beings. Caliban is called a savage two times in the text, first by Miranda (1.2.354) and then by Stephano (2.2.55), and a “demi-devil” (5.1.275) once by Prospero—never, for instance, an ape. That particular rhetoric is an antebellum descendent of textual characterizations such as “savage” or “brute.” Von Schlegel thus participates in the same dehumanization project that Trinculo and Stephano do—calling Caliban an “awkward ape” is an ecophobic construction that participates even more directly in the project of “scientific” racism growing throughout the nineteenth century.¹⁴⁷

¹⁴⁵Ibid., 395.

¹⁴⁶Wilson, “Savage and Deformed,” 147.

¹⁴⁷While this rhetoric on the one hand feels characteristic of antebellum and Jim-Crow era United States, it has real afterlives in the racist and white supremacist discourses today. Famously, Roseanne Barr tweeted of Valerie Jarret, former President Barack Obama’s senior advisor: “muslim brotherhood & planet of the apes had a baby=vj” (Monica Castillo, “ABC cancels ‘Roseanne’ after its star comedian tweets racist ‘joke’ about former Obama aide Valerie Jarrett,” *The Washington Post*, May 29, 2018 <<https://www.washingtonpost.com/gender-identity/abc-cancels-roseanne-after-its-star-comedian-tweets-racist-joke-about-former-obama-aide-valerie-jarrett/>>).

William Hazlitt, writing roughly fifty years after Coleridge and Von Schlegel, uses similar language: “[Caliban] grows out of the soil where it is rooted, uncontrolled, uncouth and wild, uncramped by the meanness of custom. It is ‘of the earth, earthy.’ It seems almost to have been dug out of the ground.”¹⁴⁸ Referring to Caliban consistently as *it*, Hazlitt sees him as some fundamental outgrowth of the earth, his “uncouth and wild” side an inseparable by-product of his association with the element. Hazlitt takes Prospero's hierarchization of Ariel and Caliban and situates them as even more fundamentally opposed than Prospero does, extractively imagining that what has been subtracted from the person of Caliban is added to that of Ariel:

Shakespeare has, as it were by design, drawn off from Caliban the elements of whatever is ethereal and refined, to compound them in the unearthly mould of Ariel. Nothing was ever more finely conceived than this contrast between the material and the spiritual, the gross and the delicate.¹⁴⁹

Hazlitt imagines refinement—by which he seems to mean distinctly white, western habits—siphoned off of Caliban and to Ariel. Using elementality and ecophobic rhetoric, nineteenth and early twentieth century criticism casually reinscribes the hierarchies imposed onto Ariel and Caliban, effectively invisibilizing Prospero's defining role in the creation and imposition of this hierarchy and enshrining it into academic discourse.

Perhaps because of the invisibilization of the fundamental constructedness of this ecophobic dichotomy, similar descriptions of Ariel and Caliban persevere through the

¹⁴⁸William Hazlitt, “The Tempest,” in *The Collected Works of William Hazlitt*, vol. 1, ed. A.R. Waller and Arnold Glover (London: J.M. Dent and Co, 1902), 239.

¹⁴⁹*Ibid.*, 241.

twentieth and twenty-first centuries. Critiquing the post-colonial turn in *Tempest* criticism in the 1990s, Paul Franssen calls such theoretical approaches “fashionable interpretations” of the text,¹⁵⁰ and argues that a focus on postcoloniality sacrifices “traditional allegorical readings of *The Tempest* in terms of such universal categories as elements [...] or nature” which by comparison “have come to seem ahistorical.”¹⁵¹ The master narrative Prospero proposes and the “insidious loops” this narrative has undertaken through the centuries have sought to render the play’s use of elements not as subjective, ideological constructions, but as “universal,” and Franssen’s repetition of this rhetoric demonstrates the partial success of this project. As I hope I have demonstrated through this chapter, rhetoric of environment and elementality is not at all universal or objective and can become easily embedded in ideological projects such as colonialism and racist hierarchizations.

These critical constructions of Caliban continue in some late twentieth and twenty-first criticism, which in general focus much more on Caliban than on the fetishized Ariel. In 2016, Tom Lindsey wrote that Caliban “represents evil, incivility, or wild nature.”¹⁵² Famous Shakespearean commentators Vaughn and Vaughn imaging Caliban as subhuman in 1991, writing “He is, in sum, a borderline figure in a borderline environment, the body of a man with the habits of an animal living in an animal’s world:

¹⁵⁰Paul Franssen, “A Muddy Mirror,” in *Constellation Caliban: Figurations of a Character* (Amsterdam: Rodopi, 1997), 32.

¹⁵¹Franssen, “A Muddy Mirror,” 23.

¹⁵²Tom Lindsay, “‘Which first was mine own king’: Caliban and the Politics of Service and Education in ‘The Tempest’,” *Studies in Philology* 113, no. 2 (2016): 398.

humankind at its most primitive.”¹⁵³ Amanda Bailey, stripping Caliban to his flesh in an overtly dehumanizing way, writes, “By considering Caliban as ‘strange flesh,’ that is, as part-human/part-fish, or as partial in his human-fleshedness, we can explore how this character confronts us with the conundrum of the flesh as that which is temporally and conceptually antecedent of the body.”¹⁵⁴ Downing Cless calls Caliban “half-human, fish-like, witch-begotten.”¹⁵⁵ Debra Charlton more directly invokes the material characteristics of earth in her description of Caliban, writing, “Caliban is both an odd mishap of nature and a quintessential product of the Earth—heavy, cloddish, unformed, and perhaps soulless.”¹⁵⁶ Charlton leaves unexplained how Caliban is somehow both an odd mishap of nature *and* a quintessential product of earth—but this betrays something of Prospero’s own contradictions and floating signifiers. Heavy, cloddish, unformed: these are adjectives meant to invoke unsightly ‘clods’ of dirt, synonymized by Charlton with the otherwise seemingly disparate adjective *soulless*, much like Prospero himself links “earthy” and “abhorred” in his discussion of Sycorax.

Charlton’s criticism perseveres in juxtaposing Caliban and Ariel by virtue of their elemental association, writing, “Like the Air after which he is named, the spirit Ariel is

¹⁵³Alden T. Vaughn and Virginia Mason Vaughn, *Shakespeare’s Caliban: a Cultural History* (Cambridge, UK: Cambridge University Press, 1991), 62.

¹⁵⁴Amanda Bailey, “Race, Personhood and the Human in The Tempest,” in *Renaissance Personhood: Materiality, Taxonomy, Process*, ed. Kevin Curran (Edinburgh: Edinburgh University Press, 2020), 152. Additionally, figuring non-white persons as “antecedent” of white Europeans is also a stronghold of scientific racism, and features heavily in colonial travel narrative.

¹⁵⁵Downing Cless, “Shakespeare’s A Midsummer Night’s Dream and The Tempest,” *Ecology and Environment in European Drama* (New York: Taylor and Francis Group, 2010), 104.

¹⁵⁶Debra Charlton, “Art, Science, and Mysticism: *The Tempest*,” in *Holistic Shakespeare: An Experimental Learning Approach* (Bristol, UK: Intellect Books Ltd, 2012), 139.

invisible and capricious. He provides an ideal foil to the earthy Caliban, functioning as his physical and metaphorical opposite.”¹⁵⁷ With Ariel occupying one side of this comparison, and Caliban the other, as *foils* to each other, Prospero’s hand in composing this binary is once again rendered invisible. Charlton invokes other early modern hierarchies to justify this opposition as supposedly natural: “On the Great Chain of Being, the subhuman Caliban is situated lower than the other characters. Not quite human, his liminal status makes him the object of the humans’ fear, loathing, and bullying.”¹⁵⁸ She portrays his ‘earthiness’ as a cause for ‘fear,’ again invoking the entwined projects of ecophobia and racism.

Conclusion: “Pervasive and Historically Entrenched”

Envisioning Caliban as anything but a human maligned by invisibilized racist rhetoric, constructed by Prospero in ways that parallel ecophobic discourses in colonial travel narrative and are further perpetuated by centuries of scholarship, is simply another contribution to a body of academic discourse historically rooted in and benefitting from projects of dehumanization perpetuated in rhetoric, including environmental imagery. The history of environmental and elemental discourse in constructions of systemic racism

¹⁵⁷Ibid., 139.

¹⁵⁸Ibid., 139. Charlton also claims that Caliban “gives free access to his uncontrolled passions and animal lust by attempting to rape Miranda” (139). Heidi Hutner argues that “Caliban’s role as sexual threat to Miranda is overdetermined—it is Prospero’s and Shakespeare’s justification for the oppression of the other in the name of Christian decency and sexual morality” (*Colonial Women: Race and Culture in Stuart Drama* [Oxford, UK: Oxford University Press, 2001], 35). Kim Hall writes that “the rape threat is the prime image formed by the racist imagination” (*Things of Darkness* [Ithaca, NY: Cornell University Press, 1995], 142) and Susan Arndt similarly characterizes this moment as a “the rape fantasy with which Prospero libels Caliban” (“Myths and Masks of ‘Travelling’,” 214).

is both long *and* overlooked in literature and criticism. In an era of environmental decline—of the racially diverse “Asthma Alley” in the South Bronx, the appropriation of Western Shoshone and South Paiute land to test nuclear weapons, the construction of the Dakota Access Pipeline through Standing Rock Sioux land, the line of oil refineries and petrochemical plants along the predominantly Black “Cancer Alley” section of the Mississippi River, or the ongoing clean water crisis in Flint, Michigan—racial justice and environmental issues are hardly separate matters.

Brian Deyo writes that “[e]cophobia is most destructive when it’s most pervasive and historically entrenched. When it becomes normalized, it’s that much more difficult to acknowledge and redress.”¹⁵⁹ By attending to various iterations of ecophobia across early modern genres, we can begin to better identify how these discourses become intertwined and trace their “insidious loops” into contemporary discourse. In early modern criticism, this means not only deconstructing ecophobic rhetoric as it exists within early modern genres themselves, but how and where criticism has perpetuated these discourses. On the precipice of a future characterized by imminent environmental catastrophe and overwhelming racial and economic inequality and disenfranchisement, in a world in which the value of the humanities is increasingly called into question, understanding historic and contemporary ecophobia in legacies of literary and cultural discourse becomes an invaluable tool to emphasize the value of attending to literature, rhetoric, and its legacies. After all, as Estok writes, only when ecophobia is made “visible” and

¹⁵⁹Deyo, “Tragedy, Ecophobia, and Animality,” 200.

“understandable” within the complex frameworks in which it exists can we finally make it “subject to action.”¹⁶⁰

¹⁶⁰Estok, “Introduction,” 384.

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