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The Abyss Stares Back

Encounters with Deep-Sea Life

Stacy Alaimo

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For Kai

He told me that science was not about beauty

—Robin Wall Kimmerer, *Braiding Sweetgrass*

Initial starting conditions of spontaneous acts of combustive generosity and impossible unconditionalities. Making space, without liens, for the arrival of strangers whose trajectories are unmappable in advance.

—Eileen Joy, “You Are Here: A Manifesto”

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Preface

Deep-sea life is having a moment—a long-overdue moment of accelerating scientific discovery, popular regard, and political advocacy. This sudden attention to abyssal life seems paradoxical because the deepest zones of the ocean were long thought to be devoid of life, due to the darkness, cold, and immense pressure of the water column. But the depths have also been seen as an extraordinary biome capable of harboring living fossils, or species that managed to survive unchanged through evolutionary and geologic time scales. Indeed, not only do many deep-sea species live at slower temporalities, but also some elements of their habitats, such as benthic manganese nodules, develop extremely slowly—a few millimeters per million years. Such unfathomable temporalities along with inconceivable conditions for life (dark, cold, under pressure) results in thinking of the depths—if indeed one considers them at all—as another world, intact, far from the reach of anthropogenic harms. If only that were the case. Deep-sea life faces several existential challenges, such as industrial fishing and trawling, but most dramatically the impending threat of deep-sea mining, which could, at an unthinkably precipitous pace, destroy colossal areas of the seafloor, kill a multitude of living creatures, and disrupt interrelated ecosystems, perhaps even exacerbating climate change.

Against the immense threats to abyssal life that propel this book, astonishingly beautiful images of often newly discovered deep-sea animals appear through such outlets as social media, magazines, newspapers, TED talks, films, videos, art, and coffee-table books. Despite the mind-boggling remoteness of the deep, such creatures somehow seem to be suddenly at hand, immediately present for aesthetic appreciation, regard, and speculation. I have found this to be deeply weird. While the aesthetic seems a flimsy, fragile, and inadequate mode of confronting the grave magnitude of the anthropogenic harms to ocean life, it may nonetheless be vital for inspiring a sense of connection

and concern for abyssal species. While an oceanic aesthetic has long been cast as sublime, propelled by views across the vast surface of the seas, here I argue for an aesthetic more appropriate for the depths, especially in an era of extinction, specifically a creaturely aesthetic of highly mediated encounters with particular species. Analyzing the science, art, and literature of deep-sea animals from William Beebe and Else Bostelmann in the 1930s to the Census of Marine Life and other works in the beginning of the twenty-first century and extending to the current moment marked by abyssal clickbait as well as more intimate mediations, this book overflows with fabulous, strange, surreal, astonishing, spectacular, intriguing, breathtaking, and affecting deep-sea life. The aesthetic, embodied, emotional responses to deep-sea creatures, as they appear within paintings, photographs, films, videos, scientific histories and memoirs, and science fiction, disorient, captivate, and inspire. I hope readers will find the aesthetic, philosophical, and ethical currents pulsing through the science, literature, and art of abyssal species to be illuminating and perplexing, inciting a sense of encounter with enigmatic abyssal beings who seem to stare back. Even as such encounters are mediated, staged, and speculative, when the abyss stares back, the occasion calls for recognition, reckoning, and a radical expansion of environmental concern. I also hope the book will be of use to scholars, artists, activists, and others who are concerned about ocean life, from the shore to the bottom of the sea. I am grateful to everyone working in deep-sea biology and ecology, marine biology, marine conservation, marine science studies, the blue humanities, critical animal studies, environmental studies, posthumanism, Indigenous studies, Black studies, Oceanic/Pacific studies, and related fields. I am also grateful for the environmental organizations, volunteers, activists, and wildlife rehabilitation practitioners (including River Alaimo) who do such invaluable work for plants, animals, and ecosystems. Multiple, overlapping modes of intellectual, creative, and political work are necessary to inspire and mobilize concern for the abyss at hand.

Introduction

Caring about the Abyss

A *New Yorker* cartoon opens *The Silent Deep: The Discovery, Ecology, and Conservation of the Deep Sea,* by marine ecologist Tony Koslow. The caption states, "I don't know why I don't care about the bottom of the ocean, but I don't"[1] (Figure 1). The middle-aged, middle-class white women, snug in their domestic comforts, inhabit a world unfathomably different from that of the deep seas. The wry contrast between the bottom of the ocean and the arid tea party lightens the woman's confession, excusing her exhausted empathy. It also suggests that environmentalists have gone too far. How deep must people's sympathies be expected to travel? How much concern can unknown, unrecognizable life-forms elicit? When considered by a marine ecologist such as Koslow, however, the cartoon suggests the challenges facing deep-sea biology and conservation. The cartoon has struck many a nerve, it seems, as deep-sea biologist Cynthia Van Dover notes that "nearly every deep sea biologist has a dog eared copy."[2] Stronger popular interest in the depths could increase funding for ocean research and conservation. Recalling this cartoon, a "senior scientist at a major oceanographic institution," calling the speaker "Mildred," responds to her lack of interest: "What motivates me is not to make Mildred happy. What motivates me is almost the romance of exploration, to know that when you're down in a submarine and you're looking out of the window, that you're the first human ever to see that."[3] The "romance of exploration" may spark interest in deep-sea exploration, but such romance is also drenched in colonial histories. While this white, middle-class domestic scene is terribly confined, it does broach the question of what it would take to motivate popular concern for distant marine environments.

Why care about life at the bottom of the ocean? Because the start of the twenty-first century is, according to deep-sea biologist Helen Scales,

"without a doubt a golden era for deep sea exploration,"[4] and in the words of Edith Widder, we "are poised on the brink of massive destruction of oceanic ecosystems."[5] This moment of crisis—a time when both deep-sea exploration and the devastation of oceanic ecosystems are accelerating—demands the attention of scientific experts, policymakers, activists, artists, filmmakers, writers, scholars, governments, NGOs, consumers, and publics. Even the life dwelling in the deep oceans, seemingly safe from human incursions, is precarious, as industrialized overfishing, impending deep-sea mining, heating and acidifying waters, and pollutants (plastic, chemical, radioactive, sonic, and other) harm even benthic animals and ecosystems. The title of marine biologist Helen Scales's book telegraphs the magnificent life in the deep as well as its precarity: *The Brilliant Abyss: Exploring the Majestic Hidden Life of the Deep Ocean, and the Looming Threat That Imperils It.* While making the case that environmentalists must be optimists, given the multiple, daunting threats to the continuation of life on this planet, Widder con-

cludes *Below the Edge of Darkness: A Memoir of Exploring Light and Life in the Deep Sea* by stating, "We're left with only one option: We're going to have to 'science the shit out of this.' "[6]

Widder, a celebrated oceanographer and marine biologist, ventures into the realm of the arts and humanities when she argues that everything depends on the public reception of scientific disclosures: "Our survival on this planet depends on fostering a greater sense of connection to the living world, and wonderment is key to forging that link. I have long believed that bioluminescence provides a means to reveal the wonder in this unseen world to a public that is alarmingly unaware and, thus, largely indifferent to what makes life possible on our planet."[7] Stressing wonder, along with imagination and curiosity, transports scientific understanding of the bioluminescent depths to a public imaginary. Widder's aesthetic musings in *Below the Edge of Darkness* continue a tradition in which writers, artists, and scientists accentuate the aesthetic dimensions of the seas. As the blue humanities—the oceanic and more generally aquatic counterpart to green or terrestrial environmental humanities—develops, the question of what the aesthetic means or does as it circulates through science, culture, and art will be essential. Marine biology is saturated with stylized aesthetics that suggest the currents that run between science, sensation, and public reception. *The Abyss Stares Back* investigates how aesthetic images of deep-sea life circulate through science, scientific memoir, science fiction, art, popular culture, and environmental advocacy, mainly but not exclusively in the United States. After this theoretical introduction, the book examines William Beebe's legendary dives in his bathysphere in the 1930s, continues with the strategies of containment within science writing and science fiction of the mid- to late twentieth century, arrives in the early twenty-first century to plunge into the ambitious and aesthetically rich Census of Marine Life, and concludes in the present moment of clickbait, racist voids, intermeshed models of kinship, and mediated intimacies. The fact that visual representations of nature—be they the classic landscape paintings that shaped the constructed viewpoints of the Grand Canyon or contemporary Sierra Club calendars—have been essential for the development and popularization of U.S. environmentalism has been well established within environmental studies. The deep seas, however—which are not accessible to tourists and ramblers; which can only be experienced

through highly mediated, expensive, scientific expeditions; and which are frequently labeled as alien worlds—require their own examination in terms of the aesthetic reception of the beautiful, the surreal, the strange, and the unknowable.

As a cultural and theoretical foray focusing on the travels of aestheticized creatures, rather than a marine biology text or scientific history, what constitutes the deep will vary throughout the chapters, from Beebe's "half mile down" (800 meters) in the 1930s to the current designations of the bathypelagic (1,000–4,000 meters), abyssalpelagic (4,000–6,000 meters), and hadalpelagic zones (6,000–1,100 meters), along with their benthic (bottom) counterparts. As a nonscientist discussing nearly a century of science, art, film, and literature, I refrain from imposing definitions or distinguishing between bathypelagic, abyssalpelagic, and so on. Instead, I follow my sources and echo their terminology, often alternating between "deep sea" and "abyss." The term "abyss" is certainly not neutral, as it resonates with the cultural imaginaries of the deep. While the depths are widely understood to be exceptional habitats with extraordinary creatures, the most capacious definition of the deep ocean asserts that it begins at two hundred meters down, where darkness begins, which means that it includes 90 to 95 percent of the volume of the ocean, making it the largest biome on the planet. Alan Jamieson and coauthors argue for a less sprawling definition, restricting the deep sea to the waters below a thousand meters, drawing this line so as not to "confuse the matter with habitats, species, and anthropogenic impacts that though they might be present in the deep sea, are typically found in the upper layer."[8] In any case, the deep seas are neither eccentric nor negligible. The Deep Sea Conservation Coalition definitively declares that "all life on earth, including human life, depends on the deep sea."[9] As life itself hangs in the balance, the deep sea epitomizes this moment, termed the Anthropocene, when the scale of anthropogenic harm overwhelms the political will and the ability to change course.

While this book ponders the magnitude of the deep-sea biome, especially in terms of scientific captures, speculative mapping, posthumanist unmooring, and Anthropocenic scale shifting, deep-sea animals, in their shimmering multiplicity, steal the show, graciously and metonymically extending their magnetism throughout their biome.

The Abyss Stares Back brackets marine mammals and other so-called charismatic megafauna, focusing instead on animals such as hatchetfish, siphonophores, and cephalopods. Many of these animals not only have little history within human cultures but are also profoundly different from what humans (as terrestrial mammals) expect animals to be. Jellyfish and other gelatinous animals whose bodies are 95 percent water, for example, float at the far reaches of our ability to construct sturdy interspecies connections, posing both conceptual and ethical or biopolitical challenges. What sort of ethical response to gelatinous creatures is possible when even some of the most esteemed and beloved mammals, such as cetaceans and our fellow primates, struggle for survival? Because most of the ocean is inaccessible to humans and abyssal life is extraordinarily diverse, deep-sea creatures seem beyond the reach of human comprehension and responsibility. Are deep-sea animals simply too distant and too strange to spark concern? Perhaps. Yet aesthetic encounters, even those that are highly mediated, can dodge conventional alienation from abyssal life. The aesthetics of the breathtakingly beautiful, adorable, diaphanous, radiant, weird, and surreal pulse with a kind of intimacy, sparking an emotional sense of connection that in turn ignites curious speculations about species' being and creaturely lifeworlds. Abyssal life may seem to exist worlds away, yet the experience of an aesthetic encounter seems immediate, affecting, and potent. The abyss stares back in depictions, framings, stagings, and designs that are anything but disinterested.

Despite the abundance of dazzling images of deep-sea life traveling through marine science, art, and popular culture in the twenty-first century, which call publics to imagine abyssal worlds, both cultural and scientific conceptions of the deep seas are rather recent. As Nicole Starosielski notes, "the ocean did not always have depth or volume in the popular imaginary." By attending to the history of undersea cables, she argues that although "all forms of depth are mediated in a general sense by cultural forces and specifically by instruments and representational technologies," the "depth of the ocean was critically mediated by network infrastructure in both of those senses."[10] Mediations of the depths involve infrastructure, technology, and the practices of science. The deep sea has long posed formidable problems for science, as it has been difficult to capture "specimens" and, until relatively recently,

impossible to observe species in their habitats and ecosystems. As Renisa Mawani explains, the very "materiality of oceans—their changing temperatures, moving currents, and dynamic forces—posed a significant challenge to technological innovation and human mastery."[11] This is even more the case for the oceans' deepest zones. Without much information about species and their interrelations, the initial recognition of abyssal life is often highly aesthetic. However, the aesthetic response—which can be emotional, personal, and unsettling—can complicate conventional scientific epistemologies. Paradoxically, the beauty of deep-sea life has both threatened scientific authority and amplified scientific reception. When at the start of the twentieth century William Beebe resisted the strict separation of art from modern science, he was critiqued for being a mere showman, not a proper scientist. However, by the turn of the twenty-first century, the Census of Marine Life featured and finessed the aesthetic dimensions of their findings, and nearly a quarter of the way into the twenty-first century, a creature feature such as *Meg 2: The Trench*,[12] poses scientists against capitalist extractivism, aligning them with an aesthetically potent (albeit campy) conservationist politics. Even as aesthetic encounters disrupt standard scientific epistemologies, they can nonetheless provoke scientifically informed speculations and foster public imaginaries necessary for marine conservation.[13] What seems to be an epistemological or scientific failure can instead be a recognition of the magnitude of biodiversity that swamps human knowledge systems and inspires more capacious, philosophical, aesthetic, and perhaps ethical relations with abyssal lifeworlds. Such epistemological failures may check the Western drive to master, objectify, contain, and flatten an externalized nature, instead prompting a volumetric vision of the astonishingly heterogenous forms of life on this planet. This book traces the cultural work of creaturely aesthetics as they flow through science, art, literature, film, and popular culture, asking how they disrupt conventional scientific epistemologies, how they are implicated in a colonizing environmental gaze, how they populate abyssal voids with beings that spark attachment and concern, and how they function within the Anthropocenic horizons of extinction. What do we see when we see a siphonophore? What can such an image do? What would it take for such an image to inspire more capacious and potent ecological visions?

Casting Around in the Void: Abyssal Knowing and Being

The rather sudden appearance of deep-sea life, circulating through terrestrial human media, is remarkable. While medieval maps warn "here be monsters" on the open seas, featuring lively images of dragons and other fantastical creatures attacking ships or lounging on the water's surface, who knew what lurked far below? In the mid-nineteenth century, the azoic theory of British naturalist Edward Forbes declared that *nothing* could lurk below, as the extreme cold, darkness, and pressure of the deep seas prohibited life. Helen Rozwadowski notes that by the 1860s, "hydrographers, deep-sea fishermen, and whalers had found evidence of organisms at great depths," yet naturalists of the time seemed oblivious to this evidence, as they lived in different "intellectual and social worlds" from the seamen.[14] When the repair of Mediterranean cables in 1860 brought sea animals to the surface from about a thousand fathoms, "a multitude of unfamiliar creatures" was discovered, and knowledge of them was disseminated to "men of science" as well as publics.[15] Nonetheless, the technological, logistical, and financial barriers to scientific exploration of the depths have been formidable, especially in the case of gelatinous creatures, which, when dredged up as specimens, become unidentifiable mush. Yet even after evidence of life in the depths surfaced, the conception of the abyss as a void has endured with the potency of myth. Moreover, the volumetric expanses of the ocean have been flattened by capitalist enterprises; they are imagined as a merely horizontal plane for transportation, as Philip E. Steinberg argues in *The Social Construction of the Ocean.*[16] While capitalism has flattened the conception of the ocean, rendering the depths immaterial, the deep seas, conceptualized as an abyss, have long been drenched in racist formulations of Blackness. Calvin L. Warren, in *Ontological Terror: Blackness, Nihilism, and Emancipation,* argues, discussing the philosophy of Martin Heidegger, that "nothing is the essence of science—the void, the abyss, the unruly thing is the repressed ground of scientific inquiry." He continues: "How do you quantify nothing? How do you render nothing tangible, an object for observation."[17] Provocatively, he argues that "Blackness enables a scientific encounter with the horrors of an entity that is nothing and something at the same time."[18] Chapter 4 will draw on Warren's arguments

to make sense of the nonsensical episode of David Attenborough's famous 2017 documentary, *Blue Planet II,* which depicts the depths as horrifically black yet somehow simultaneously "nothing and something at the same time." Indeed, many of the clickbait depictions of "weird" or "monstrous" abyssal life could be read as dog-whistling disavowals of, as Warren would put it, "black ~~being~~." By contrast, the work of Nnedi Okorafor and Alexis Pauline Gumbs, also discussed in chapter 4, depicts ocean life as allies, kindred, or intermeshed being, never alien and never abject.

Casting the abyss as an emptiness where knowledge meets its end and being becomes unfathomable elicits epistemological drama. The ocean surfaces in unlikely places, enlisted as a metaphor for an unknowable void. W. J. T. Mitchell, in *What Do Pictures Want? The Lives and Loves of Images,* for example, writes: "We theorize to fill a void in thought, we speculate because we don't have an explanation or a narrative; and so we cast a hypothetical net into the sea and see what swims in."[19] We are plunged, metaphorically at least, into the abyss, where theory begins as a "void in thought," an opening into what we don't understand, can't conceptualize, and fail to verbalize. Such failures, often performed, as Margaret Cohen argues, as the "underwater *je ne sais quoi,*" are striking in themselves, especially during moments when scientists, such as William Beebe, whom we will encounter in chapter 1, are undone by aesthetic awe.[20] Mitchell notes that his titular question—what do pictures want?—"has overtones of animism, vitalism, and anthropomorphism," cautioning that the "epithet for our times" is not " 'things fall apart,' but an even more ominous slogan: 'things come alive.' "[21] While things coming alive may be the stuff of horror films, it is also a posthumanist, new materialist corrective to the deadening of the world through capitalism, colonialism, Enlightenment dualisms, the dwindling number of plants, animals, and other living beings, and the proliferation of concrete, asphalt, and plastic.[22] More playfully, we can read the animacy in this passage in terms of an ontoepistemology in which material and multispecies agencies propel knowledge or provoke theory. If you cast your net of not-knowing, something fabulous might just swim in.

Such frameworks evoke epistemological humility and muddle the conceptual chasm between natural reality and cultural representation as well as between land and sea. Given the scale of the global seas and

the limits of scientific knowledge about marine creatures and ecologies, the blue humanities and marine science studies could be considered as a fluid process of catch and release: something swims in, but it must be released back into the intraacting flows, relations, and systems that demand Anthropocenic scale shifting along with an assessment of harms, entanglements, and modes of fierce, politicized care. "Capture," with its undertones of cruelty, objectification, and animal resistance, is a candid term for thinking through both the scientific and aesthetic disclosures of deep-sea creatures, as it conveys both an ontoepistemology of the process of accessing and understanding a living world as well as the ethicopolitical responsibilities inherent within these processes. "Capture" is a key term throughout this book because of its multimodal valences. It can be understood literally in terms of the violent seizure of live animals as specimens; more methodologically or theoretically as an aspect of "mangled" scientific practice that discloses a material reality, to use Andrew Pickering's term; and as photographic or video capture, in which a moment in place and time is rendered into an image—a "circulating reference," in Bruno Latour's terms, that retains something of what was captured.[23]

"Capture" might lead us off course, however, as it could imply mastery, objectification, and epistemological stasis, or the separation of subject from object. Captures could be understood in terms of more fluid notions of what it is to see and to know within networks of human knowledge practices and technologies as they interact with nonhuman agencies. Against the buoyant quote by Mitchell, we could consider D. Graham Burnett's more agonized attempts to think with cetaceans in ways that are not merely metaphorical. Burnett concludes his massive, extensively researched, nearly eight-hundred-page volume *The Sounding of the Whale: Science and Cetaceans in the Twentieth Century* by stating, "The fundamental lesson I have taken from the research and writing of this book amounts to nothing less than a kind of sweeping epistemological humiliation."[24] What is "exportable" about his undertaking is, he contends, an "anti-analysis" he has "not figured out."[25] While a recognition of epistemological limits has been articulated as an ethical stance within feminist, environmental, and decolonial theory as a means of countering colonizing epistemologies of mastery, Burnett seems stranded within his own strict division between archives of whale sciences and actual whales. He warns us, early

on, that there will be no whales in this book but "only words about whales."[26] He continues, "What were the whales saying? I have no idea. Do I give too much agency to (human) words? Maybe. It is ever thus with bookish folk. If it is whales you want, you have to go to sea."[27] As tempting as it is to set out to sea to encounter whales, not words, the larger epistemological problematics posed by what it means to apprehend most oceanic species cannot be so readily resolved, as all encounters, even those at sea, are always already mediated and would not yield the solid knowledge that Burnett seems to seek. The multitude of historical, mythic, scientific, literary, and philosophical musings on whales in Herman Melville's novel *Moby-Dick*, for example, unmoor readers from the drive of the plot, which includes direct and gory contact with whales, dispersing knowledge into never-ending provisional disclosures, speculations, and creations. On page 675, Burnett admits, "Knowing things is hard." True, but perhaps the critics of Western epistemologies and scientific objectivity would add that "things"—solid, factual objects—should not be the target. The inability to pin down, say, what whales are is a failure worth emulating because it dramatizes the limits of epistemologies that distance, circumscribe, and objectify. I should add here that even though I use the term "species" throughout this study, "species" must be read as *sous rature* because evolution entails both the interrelation of species and their transformation. Taxonomic captures and cuts cannot be but provisional and arbitrary, given not only the common ancestry of living beings but also the many different definitions of "species" within and beyond Western science.

While Burnett mocks the idea of giving whales "agency," sequestering the term with scare quotes, a more generous engagement with feminist science studies, starting perhaps with Donna J. Haraway's prodigious scholarship,[28] could foster something besides "a sweeping epistemological humiliation"—or, even better, could alchemize humiliation into an environmental ethics of humility. For example, Mette Bryld and Nina Lykke, in their 1999 volume *Cosmodolphins*, begin by aligning themselves with feminist cultural studies scholars who share "a disbelief in the traditional dichotomies between theory and empirical objects of study, between knowing subjects and objects of knowledge."[29] Similarly, Donna J. Haraway, in a chapter on "Tentacular Thinking" in *Staying with the Trouble: Making Kin in the Chthulucene*, asserts: "The tentacular ones tangle me in SF. Their main

appendages make string figures; they entwine me in the poesis—the making—of speculative fabulation, science fiction, science fact, speculative feminism, *soin de ficelle*, so far."[30] By listing multiple meanings of sf, Haraway suggests their distinctiveness and relations. There is no gulf here between words and whales but rather tentacular tangles, inspiring academic work that is speculative, sometimes even fictional. There is a rich generativity in this mess. Moreover, Burnett's epistemological or methodological white flag—his witty confessions of failure—can be read more generatively as an aestheticized outburst of awe, not unlike many of the reactions to deep-sea creatures that will be discussed throughout this book, most notably those of William Beebe.

Feminist epistemologies, at least since Carolyn Merchant's *The Death of Nature*, have critiqued Enlightenment models of knowledge for their gendered paradigm of "penetrating" a feminized nature.[31] Luce Irigaray, in *Marine Lover of Friedrich Nietzsche*, inhabits such gendered dualisms to subvert them, granting the ocean sovereign vastness. She notes that "the loftiest gaze does not penetrate thus far into her depths" because she is "much deeper than the day ever conceived her to be."[32] The trope of the ocean as unfathomably vast, however, can place it beyond the scope of environmental concern. Even Rachel L. Carson believed—at least until 1951, when *The Sea Around Us* was published—that the ocean was too immense for anthropogenic harm. Moreover, the conception of the sea as unknowable because of its magnitude can be detrimental. Irus Braverman and Elizabeth R. Johnson explain in their introduction to *Blue Legalities: The Life and Laws of the Sea* that the oceans have historically been "characterized by inaccessibility and indeterminacy." Still today, "ignorance remains central to the seas' legalities": "In the legal literature, the opacity of the oceans is most often understood to incapacitate managers of marine resources or conservationists who seek to curb pollution and battle other perils."[33] They underscore an essential point: "One of the challenges for blue legalities is figuring out how to insist on accountability and justice in the absence of complete knowledge."[34] The precise articulation of what it means for the abyss to be unknowable matters, as magical thinking poses the depths as a separate realm where human harms dissolve into invisibility. Astrida Neimanis warns, writing about chemical waste in Sweden's Gotland Sea, that conceptualizing the ocean as "universal solvent" and "pure alterity" enables us to ignore responsibility

for anthropogenic harms: "Those matters swallowed up by the sea become part of its unknowable abyss—not only forgotten but rendered unintelligible."[35] As we encounter different aesthetic and scientific captures of deep-sea creatures, the question of what it means for the depths to be unknowable will repeatedly arise—as a way to dodge legal and financial responsibility, as an admission of scientific or scholarly failure, as a pervasive cultural trope, as a mathematical impasse, as an impetus for environmentally ethical epistemologies, or as an ordinary, even clichéd, sense of the wondrous or sublime.

The Sublime: Surface Void or Posthuman Provocation?

If there is one aesthetic category persistently associated with the ocean in Western art and philosophy, it would be the sublime. Yet *The Abyss Stares Back* veers away from the sublime of Immanuel Kant, Edmund Burke, Caspar David Friedrich, or even J. M. W. Turner. As a cultural studies scholar, I intend to remain open to what swims in. In other words, I attempt to read texts on their own terms rather than confining them within already established philosophical conceptions. As a feminist scholar, I hope that openness to the sources at hand offers possibilities for dodging rather than repeating dominant concepts within the Western canon of philosophy, literature, and art. Furthermore, at this point, multiple definitions and renditions of the sublime have made the term contradictory and diffuse. Although the concept of the sublime is sometimes applied to contemporary art, it seems more relevant to the eighteenth and nineteenth centuries. This project, however, begins in the 1930s and continues to the present moment—a moment in which technologies of aesthetic and scientific capture and circulation differ from those of past centuries. Finally, Kant's emphasis on aesthetic judgment as disinterested does not provide a hospitable habitat for contemporary concerns about extinction and biodiversity. Disinterest is inimical to tracing how aesthetic encounters can spark creaturely attachment and deeper environmental concern.[36]

In terms of the blue humanities, it may be useful to note, however, that not only landscapes but also seascapes have been depicted as quintessentially sublime. Sublime seascapes like Turner's, however, usually represent the stormy *surface* of the ocean, with ships being tossed about by tremendous winds and waves, dramatizing the pow-

erful forces of nature rather than depicting marine life in sympathetic modes. In effect, the surface of the sea is cast as a kind of elementally potent void; air, water, waves, and wind toss turbulently, but marine life is scant. Moreover, some meanings of the word "sublime" manifest vertical hierarchies that privilege the sky over the depths, such as this example from 1633: "As clouds . . . being elevated and sublimed toward the upper regions of the aire, are rarefied"—or this example from 1845: "Thoughts rise from our soul as from the sea the Clouds sublimed in Heaven."[37] Abyssal aesthetics must descend rather than ascend, saturating marine life with inherent value and scrambling the vertical semiotics of good versus evil, heavenly versus hadal. Even though the vastness of the depths is consonant with prevalent conceptions of the sublime, pelagic and benthic realms do not lend themselves to seascape depictions, given their darkness, their staggeringly volumetric immensity, and, in the case of pelagic or open seas, the lack of geological features. That word, "staggering," paired with "immensity," catches me up in the inescapable stickiness of the sublime. True confession: I do evoke that sort of sublime throughout the book, but with an orientation toward posthumanism rather than humanism or Romanticism. The recognition of abyssal realms as so astonishing as to destabilize reason addresses how the aesthetic potency of deep-sea life exceeds the limits of thought and the conventional parameters of scientific epistemologies. While the sheer magnitude of the abyss is important to reckon with, however, much of this book emphasizes a creaturely aesthetics that circulates in heterogenous forms. Abyssal aesthetics includes the beautiful, the adorable, the surreal, the weird, the monstrous, the grotesque, the psychedelic, the unfathomable, and even the self-reflexively Anthropocenic. Divergent creaturely aesthetics play out within larger frameworks pertaining to scientific practice, taxonomic framing, epistemology, mediation, containment, objectification, intimacy, care, concern, kinship, responsibility, pleasure, captivation, awe, and disanthropocentrism. One aesthetic term—even a supremely protean one—cannot encompass scientific and aesthetic encounters with abyssal life.

Global Visions

Extending global environmental concern across immense pelagic realms and down to the seafloor requires volumetric visions. The coffee-table

cartoon, worlds apart from such visions, expresses a stubborn commitment to disinterest. What would it mean, what would it take, for people to become interested in life on the bottom of the ocean? Would the interest of these ostensibly unmarked people be permeated by what Aileen Moreton-Robinson terms the "white possessive"? How do the histories and practices of scientific exploration,[38] settler colonialism, commodifying taxonomies, and genetic bioprospecting saturate depictions of the otherworldly creatures of the deep? We might pause to consider the iconic Captain Nemo, the man without a country in Jules Verne's *Twenty Thousand Leagues under the Sea*,[39] as he takes whatever creatures he wants for food, energy, or aesthetic pleasure, epitomizing the fantasy of unencumbered voyages that grant unmediated and unlimited possession of marine life. While Verne's taxonomic descriptions of Nemo's collections appear as lackluster lists of species, in the early twenty-first century, stunning images of recently discovered deep-sea creatures circulate, glowing on our computer screens and shimmering in coffee-table books. Highly mediated, contemporary digital images of wondrous deep-sea creatures echo the *wunderkammer*, or cabinet of curiosities. Captured in photographs, the creatures captivate their viewers, who are rapt with wonder and curiosity, affective and cognitive states that open us to fresh contemplations of the world. As beings extracted from their aquatic zones, framed as aesthetic specimens, they raise questions about Anthropocene visions, mapping, and mediation even as the aesthetic encounter shimmers with an impossible immediacy, provoking speculation about the animals' habitats in terms of scale, depth, volumetric expanse, and water column pressure.

The Anthropocene would seem to demand that we learn to scale up as climate change, the sixth mass extinction, pollution, ocean acidification, and other environmental crises are wickedly global problems. Naomi Oreskes, in "Scaling Up Our Vision," a beautifully lucid history of marine science and climate change, proclaims, "Our future will depend not only on understanding our relationship to the world ocean . . . but also on finding some means to change that relationship. It is time for us to take on the scale of the ocean—the scale of the planet—in our thinking and, in doing so, scale up our imagination of the human. It is time to scale up our vision."[40] What forms such a scaling up would take, whose perspective it would install, and what life it would make visible are questions that render scaling up anything but simple. In the penul-

timate chapter of my book *Exposed: Environmental Politics and Pleasures in Posthuman Times*, "Your Shell on Acid: Material Immersion, Anthropocene Dissolves," I critique this sort of scaling up, arguing that the predominant visual images of the Anthropocene attempt to represent the enormity of temporal and geographic scale by zooming up and away from the planet, epitomizing what Donna J. Haraway called the "God's eye trick" of ostensibly objective Western epistemology.[41] In this predominant mode of visualizing the Anthropocene, as well as in Dipesh Chakrabarty's influential essay, "The Climate of History," the human knower becomes an abstract, transcendent, disembodied creature who surveys the world he has affected from a safe distance.[42] This human who sees and knows stands apart from the material flows of the Anthropocene and the systems of privilege and precarity. This erases differential culpabilities and vulnerabilities of particular human groups. The formulation of the transhistorical human, the *anthropos*, acting on the planet as a geological force, often ignores biological and chemical alterations of the biophysical, ecological world. Moreover, nonhuman species vanish from sight, as they are almost never depicted in iconic Anthropocene visualizations. It is as if the sixth mass extinction had already concluded, leaving no species other than the human. Macarena Gómez-Barris, in *The Extractive Zone: Social Ecologies and Decolonial Perspectives*, describes similar vertical visions as an "extractive view": "colonial visual regimes normalized an extractive planetary view that continues to facilitate capitalist expansion, especially upon resource-rich Indigenous territories." In short, "vertical seeing normalized violent removal."[43] As Haraway argues, the view from nowhere distances the knowing subject from the object of knowledge, objectifying a passive "nature," as a "resource."[44] Gómez-Barris, analyzing a film by Carolyn Caycedo, which "draws from Indigenous relational understandings of land," proposes a "fish eye perspective," an example of how "Global South epistemologies and philosophies of race and racism . . . differently imagine knowledge and perception as the foundation of planetary inhabitance."[45] David A. Chang (Native Hawaiian), in *The World and All the Things Upon It: Native Hawaiian Geographies of Exploration*, explains that in "Hawaiian grammar and Hawaiian discursive practice . . . one almost always speaks from a place," and "this usage structurally preserves the perspectivalism at the heart of Kanaka geographic thought."[46] The view from above not only makes

it seem as if the unmarked knower floated in the sky but also distances the knower from the known, as if an abyssal emptiness stretches between the two. By contrast, Karin Amimoto Ingersoll's *Waves of Knowing: A Seascape Epistemology* emphasizes immersion, interaction, and transformation, epitomized by the practice of surfing. Her Kanaka Maoli (Native Hawaiian) seascape ontoepistemology "evolves as an interactive and embodied ontology; a kinesthetic engagement and reading of both the physical and metaphysical simultaneously, enabling an alternative epistemology for Kanaka."[47] In an analysis of the work of New Zealand Maori author Keri Hulme, Elizabeth M. DeLoughrey writes that "the use of Indigenous ontologies in relation to more-than-human nature, particularly the creatures of the sea, offers a vital critique of neoliberal extractivist regimes that are undermining Maori sovereignty of the foreshore and seabed."[48] All of these arguments offer potent critiques and alternatives to the extractive view, yet it would be appropriative for settler colonialists to take up (the common academic parlance betraying hierarchical verticality, use, appropriation, and theft) Indigenous philosophies and traditional ecological knowledges, especially given how deep-sea creatures are made present through the mediations of big science.[49]

We have drifted far from the coffee-table scene, yet Gómez-Barris, Chang, Amimoto, and DeLoughrey underscore alternatives to a universalized, transparent perspective on "the world"—a world that awaits attention. The moment one would choose to care or not care while sitting still betrays an expansive, commodifying, and often visually constructed sense of entitlement. Moreton-Robinson argues that an unmarked global vision is undergirded by "a white possessive logic." If, as Moreton-Robinson writes, "white subjects are disciplined, though to different degrees, to invest in the nation as a white possession that imbues them with a sense of belonging and ownership,"[50] then is the expansion of environmental concern, extending to the very depths of the sea, itself an extension of white possessive logic? As a middle-class white woman who grew up in Michigan on Ojibwe or Saginaw Chippewa lands, I am implicated in global visions that deliver marine creatures as aestheticized life-forms that elicit concern. Enthralled by Jacques Cousteau TV specials, learning to bodysurf during childhood visits to Florida, then snorkeling and scuba diving as an adult, my love

of ocean life has been mediated by television, tourism, and (ableist) adventure culture, as well as by environmental ethics, love of marine life, and concern for all living creatures.

Kinship with marine life manifests ontological interrelation, a more intimate interconnection across species lines compared to that of conventional modes of environmentalism that externalize "the environment." Inuit stories of Sedna highlight kinship as the foundation of care for marine life, a relational mode that will also be discussed in chapter 4.[51] Sedna, whose father, to save himself, cut off her fingers as she clung to his boat in a storm, illustrates a particularly striking counterpoint to the coffee-table scene. Her fingers became marine mammals, and, in the words of Jace Weaver, drawing on Laura Adams Weaver, in turn drawing on accounts of Inuit peoples as recorded by Franz Boas, "Sedna was deified," becoming "the mistress of the Sea, responsible for her children, the marine mammals who sprang from her body. If the Inuit anger her, she will withhold the sacrifice of her children, and the Inuit will starve. A prime responsibility of Inuit shamans is to travel to the bottom of the ocean and comb Sedna's hair—because she has no hands—and keep her from becoming displeased."[52]

Even in this brief retelling, a rich sense of ethical relations, intimate kinship, and ecological responsibility resonates. Artist Ningiukulu Teevee (Kinngait) has created several depictions of Sedna, including "Sedna's Creation," in which a hand with cut fingers, placed in the middle of the work, radiates into a fluid array of lively marine mammals. In her lithograph "Sedna's Wonder," a curving half-fish, half-woman figure, underwater, reaches up to touch and marvel at a jellyfish, the waters gorgeously blue.[53] By contrast, Teevee's black-and-white "Untitled (Sedna by the Sea)" depicts a despairing Sedna, sitting alone on a rock, without her marine mammal kin, smoking a cigarette, watching garbage being dumped into the sea.[54] Alison Cooley calls the drawing "a grim view of a world where industry dominates and the seas suffer so deeply that their goddess is forced to abandon them."[55] The composition suggests an inversion of extractivism's verticality, as the garbage trucks at the top of the page dump waste that pours into the waters in the middle of the page, sinking down to where Sedna sits—on land, but also, more figuratively, at the bottom of the page and the sea. The bleakness of this black-and-white drawing contrasts with

many of Ningiukulu Teevee's other works, which are brightly colored, featuring animals, people, and hybrid figures swimming or otherwise being in or near the water.

The possessive logic that suffuses vertical, extractive visions of the world whitewashes the banal processes of capitalist consumption and waste, where harms are rendered invisible and untraceable, except through explicitly activist mappings of, say, how plastic bags kill ocean life, industrial fishing harms Indigenous peoples, and electronic waste harms peoples in the global south. These long transcorporeal maps of culpability begin in human terrains, tracing the strange scales in which quotidian practices result in colossal violences. Even those who refuse to consume ocean life caught by horribly wasteful industrialized fishing, reduce the use of plastic, and shun cruise ships still purchase things that contain resources extracted through industrialized fishing and mining. Much garbage, even when supposedly recycled, ends up in the belly of a fish, seabird, or whale—not to mention the deadly effects of sonic pollution on marine mammals; the looming catastrophes caused by industrialized people's release of carbon dioxide, such as acidification, melting polar ice caps, and hotter oceans; marine extinctions; and the degradation of ocean ecologies. As ocean life is assaulted by global capitalism, colonialism, climate change, and pollution, the effects on certain groups of people, such as fishing communities and Pacific Islanders, have already been horrifically uneven.

In *African Ecomedia,* Cajetan Ikheka analyzes a potent series of photographs by Fabrice Monteiro, who lives and works in Dakar, Senegal. This series of photographs, *The Prophecy*, features majestic female figures, including versions of Mami Wata, who wear gorgeous dresses made from garbage. Iheka argues that by "staging bodies of waste, remnants of animal bodies, and other materials exhumed from the sea, Monteiro reestablishes a crime scene, one that indicts humanity for unbridled consumption."[56] Such environmental art provokes the viewer into tracing long lines of responsibility, both temporal and geographic, within capitalism and colonialism. Depicting culturally immersed scenes from different continents, Teevee and Monteiro reveal entangled harms to specific groups of people as well as to ocean life, underscoring the power of art to keep viewers from just looking away. Michel Serres in *Malfeasance: Appropriation through Pollution*, proposes an aesthetic of "dis-appropriation": "What if seeing the world's

beauty—and that of human works and bodies—would merely consist in removing the waste of appropriation? To discover: to take away this covering, this deluge of garbage."[57] Such an aesthetic of removal would ironically conceal and improperly dispose of the crime scene that Iheka dramatizes. Monteiro's photographed figures, splendidly arrayed in oceanic garbage, including a thick coating of what looks like black oil, provoke a more vexing aesthetic response, their striking beauty interlaced with a disturbing recognition of harms, networks, and complicities. It is worth noting here, however, that the contemporary photos of stunning deep-sea creatures, which will be discussed in chapter 3, circulate as "dis-covered" in Serres's terms, scientifically and aesthetically captured and framed, but presented as belonging to themselves, not the viewer.

The shift Serres proposes, from Kant's disinterested aesthetic to a "dis-appropriated" aesthetic, would seem to directly counter the long history of the "white possessive," as it intends "the dispossession of the world."[58] Such an aesthetic, however, may operate as a settler "move to innocence," a "dispossession" that seems merely philosophical or metaphorical,[59] whereas a recognition of entanglement within global networks of harm can counter dominant narratives of innocent deep-sea discovery and adventure. Take, for example, the highly publicized expeditions into ocean depths by extremely wealthy white men—James Cameron, Victor Vescovo, Ray Dalio, as well as the five men who died in the *Titan* submersible implosion in 2023.[60] In the wake of the *Titan* implosion, science journalist William J. Broad defended such touristic descents, contending that the "adventure factor" helps "generate wide appreciation among the public for the wonders of the world's oceans."[61] Given that the *Titan* descended for the thrill of touring the wreckage of the *Titanic,* I doubt the trip sparked interest in the marvels of marine life or cultivated concern about anthropogenic assaults on marine ecologies. Moreover, the prevalent and weirdly anachronistic discourse of heroic deep-sea discovery revels in the "innocence" afforded by realms that are uninhabited by humans, constructing a convenient *aqua nullius* seemingly untouched by unappealing colonial histories of explorers and conquerors. The expeditions of Cameron and Vescovo can be understood in terms of Tiffany Lethabo King's argument that the "production of the White conquistador-settler is an ongoing process of violent autopoesis that must be continually rewritten and revised."[62]

The racist structure she analyzes on an eighteen-century map is not unlike the dominant vertical and disembodied vision that I have been critiquing in which "the privileged position of humanity is that which remains beyond the realm of embodied visuality."[63] In this instance, however, I would stress that what needs to be seen isn't the corporeality of these twenty-first-century explorers but rather the way their wealth affords them an unremarkable possessive relation to everything on the planet—a planet that they harm disproportionately by "virtue" of their extreme wealth. They need not settle anywhere; they need not directly harm anyone to epitomize their lineage as conquistador-settlers if we trace the trails of slow violence[64] radiating from the ways in which they exploit the systems, materials, ecosystems, and lives at their disposal.

Biological and ecological sciences of the depths also reiterate problematic global visions. The counting of species, assessment of biodiversity, and concern for marine ecologies cannot be separated from histories and ongoing practices of colonial taxonomy, biopiracy,[65] and genomic bioprospecting. While the scientific and popular imaginaries of deep-sea creatures do not reckon with colonial histories, they do seem to counter capitalist and extractivist relations to the oceans by populating an imagined ocean with unimaginable creatures, as two of the Census of Marine Life's coffee-table books suggest. The cover of *World Ocean Census: A Global Survey of Marine Life* features a bright orange jellyfish, glowing against a dark violet background, positioned in a way that suggests a faceless head facing the viewer, daring viewers to see this creature as a living being worthy of concern. Even a creature without eyes can seem to stare back. And *Citizens of the Seas: Wondrous Creatures from the Census of Marine Life* (Plate 5) stages spectacular creatures, some within their stylized grids, others escaping them.[66] Such conceptions of sea life being welcomed as citizens will be discussed in chapter 3. For now, it is enough to consider that these portraits attempt to populate the abyss with beings worthy of regard and consideration.

Multispecies Perspectives and Ontological Musing

The question of whether or how speculations about species being can inspire volumetric environmental visions or maps of concern surfaces throughout this book. We could consider this question, following Bruno

Latour, as a "compositionist" matter, proceeding from the knowledge that the ocean is not "nature" in the modernist sense because it is not "always already assembled" but rather must be "composed" from "discontinuous pieces."[67] Latour's quest for the "Common World," however, even though it is "slowly composed instead of being taken for granted and *imposed* on all," suggests a unified transcendental perspective from which someone or something composes the arrangement of pieces.[68] While other entities and beings are represented as part of this composition, the belief in a resulting composition seems to be propped up by transcendent, immaterial composers. By contrast, Isabelle Stengers declares, in the volume *A World of Many Worlds*, "The global West is not a 'world' and recognizes no world. A world destroying machine cannot fit with other worlds."[69] Noting that she herself had "evaded" or "tamed" the "question of other-than-human beings," she argues that an "ontological politics demands that we take seriously the existence and power of other-than-human beings," even when it threatens to destroy "all resources for thinking."[70] In critiquing the phobic Western denial of animism, Stengers suggests that other beings—as inert resources—are so fundamental to Western modes of thought that an ontological politics threatens thinking itself. What would it mean to think with—rather than upon, about, or against—more-than-human beings? Perhaps thought itself, as a rational, objective, disembodied, and depersonalized practice of mastering an externalized reality, needs to be muddled with more relational, embodied, and aesthetic vectors that attempt to think with a multitude of species and to imagine the fluid ontologies of the depths while relinquishing solid foundations of knowledge that would, say, capture and taxonomize living beings. However fraught and formidable, the philosophical project of imagining the perspectives of various creatures could invite thought that does not objectify the dazzling and precarious life in the sea. Several writers in this study, from William Beebe to Rachel Carson to John Wyndham to Nnedi Okorafor and Alexis Pauline Gumbs, engage in multispecies speculations, creating narratives from the perspectives of abyssal creatures, recognizing them as kin, or vertiginously spinning as they confront the impossibility of imagining the perceptions and lifeworlds of unfathomable beings.

As the impending horror of deep-sea mining threatens to destroy colossal benthic ecosystems, many scientists are not hopeful about the

ability to prevent this massacre. Marine biologist Helen Scales quotes Daniel Jones of the British National Oceanography Centre: "Even if we found unicorns living on the seafloor," he says, "I don't think it would necessarily stop mining." Scales notes how easy it is to ignore the depths: "As soon as you stop thinking about it, the deep can so easily vanish out of mind—more so than that other great distant, realm, outer space."[71] However, she underscores the "invisible connections" that "lead far and wide from the deep sea, keeping balance in the atmosphere and climate, storing away and pouring our vital substances, all processes without which life on Earth would be unbearable or impossible." Emphatically, "every living thing needs the deep."[72] While her environmental passions drive the logical arguments and presentation of scientific data, she also includes vivid depictions of marvelous creatures, but her attempt to depict the horrors of seabed mining from the perspective of benthic and other sea creatures may be what is most compelling:

> Plumes of mining tailings would inject dust storms into their midst, including fine sediments that would hang suspended for years and get carried by ocean currents for hundreds of miles. Delicate animals of so many kinds—ctenophores and siphonophores, gossamer worms and bomber worms, larvaceans and jellyfish—would be smothered and dragged down by particles settling on them, their gills and delicate feeding apparatuses clogged so they can't breathe or eat. Dust clouds would substantially absorb blue light, selectively blocking the most common color the bioluminescent animals use to communicate. Their blinking lights and messages to lure and warn would be muted and erased in the murk.[73]

This terrifying scene, told from the third person but focalized through the perspectives of abyssal animals, is complemented by warnings that deep-sea mining could stir up toxins that would contaminate fisheries as well as churn up stores of carbon, thus exacerbating climate change. The book concludes, however, with a bleak impasse between the need for new energy systems and the contention that those systems require the metals found in the deep sea. This information is presented in a cold, factual, and distant manner, leaving readers feeling disconnected from the problem, with no orientation toward political activism, ethical practices, or ocean conservation. Ultimately, Scales does not help

us develop a sense of "our own situatedness" that would illuminate our "patterns of consuming the world," as Marietta Radomska and Cecilia Åsberg put it, or an "ethical imagination" adequate for the Anthropocene.[74] A recent call for a ban on deep-sea mining explains how the "cultures across the Pacific" see the ocean as a "sacred space for creation, a provider, an ancestor," underscoring familial interdependence. This petition, "Indigenous Voices for a Ban on Deep Sea Mining," emanates not from the cold, disconnected ontoepistemology of scientific objectivity or anthropocentric and utilitarian "environmentalisms" but instead from kinship networks that extend to the seafloor: "For millennia our people have lived in a relationship with the natural world that is defined by respect, gratitude, responsibility, and love. Our genealogies, woven across space and time, connect us physically and spiritually to animals and plants from the highest mountains to the deepest ocean."[75] In itself, this is a potent, cohesive, and inspiring protest against mining. While many non-Indigenous scientists and environmentalists have stressed evolutionary models of kinship with ocean life, those origin stories often conclude without any ontological, ethical, or political significance, without any concern for marine life.[76] Moreover, Indigenous views can be encased within non-Indigenous frameworks—included in a manner that does not disrupt the dominant framing. The "Indigenous Voices" petition, signed by seventy-two Indigenous groups as of July 2024, appears as part of the Blue Climate Initiative website, which also features "Mineral and Genetic Resources" as one of its projects. The term "resource"—implying inert matter waiting to be used by extractivist capitalism and colonialism—resonates more with objectifying "development" regimes than with kinship and Indigenous sovereignty.[77] Once relatives are reduced to resources, respect and responsibility cannot flourish.

Because, as Scales suggests, it is easy to forget about the existence of deep-sea life, speculating about the perspectives of marine animals is a vital practice for creating imaginaries that expand environmental concern. Jakob von Uexküll contemplates the standpoint of different animals, proposing that even space and time are relative to each creature. For the deep-sea medusa, which moves in a constant rhythm, for example, "the same bell always tolls, and this controls the rhythm of life."[78] Michael Marder, in *Plant Thinking: A Philosophy of Vegetal Life*, contends that the "spatiality of all living beings—unmoored from

objective determinations and emancipated from a global, disincarnated perspective that disavows its own perspectivalism—will require that a different sense of what is above and below, etc., be laboriously worked out from the standpoint of each particular life-form in question."[79] Laborious indeed! While it would be impossible for anyone to create such a map, imagining what it would entail renders transcendent global visions delusional. Imagining species perspectives, as a practice undertaken against a horizon of impossibility, may be an ethicopolitical incitement. Jonathan Balcombe, attempting to elicit empathy for "our underwater cousins" and convince readers that fishes "are individual beings whose lives have intrinsic value" and should be "included in our circle of moral concern," devotes chapters in his popular science book *What a Fish Knows* to what a fish "Perceives," "Feels," and "Thinks," how they socialize, and more. One chapter concludes by stressing the contextuality of intelligence, churning up conventional hierarchies that leave fish near the bottom: "When fishes outperform primates on a mental task, it is another reminder of how brain size, body size, presence of fur or scales, and evolutionary proximity to humans are wobbly criteria for gauging intelligence. They also illustrate the plurality and contextuality of intelligence, the fact that it is not one general property but rather a suite of abilities that may be expressed along different axes."[80] Along with Widder, we can marvel at an axis of intelligence signaled by the possibility of bioluminescent communication, heralded as the most ubiquitous mode of communication on the planet. Unlike the oft-forgotten fishes, cephalopods provoke not only philosophical speculation but fandom. Vilém Flusser and Louis Bec in *Vampyroteuthis Infernalis,* for example, their weird meditation on the vampire squid from hell, attempt to conjure the Dasein of this cephalopod, to "begin to see with its eyes and grasp with its tentacles: This attempt to cross from our world into its is, admittedly, a 'metaphorical' enterprise, but it is not 'transcendental.' We are not attempting to vault out of the world but to relocate into another's. Our concern is not with a 'theory' but with a 'fable,' with leaving the real world for a fabulous one."[81] What could be more fabulous than imagining a constellation of multispecies perspectives, even if each one is merely a tentative glimpse, a fleeting impression, a speculative foray?

Despite Emily Dickinson's musings, the brain is not "deeper than the sea"; the human brain cannot absorb it "as sponges buckets do"

because there is no "it" there, no "sea" as such (whatever that "as such" could mean), but instead multitudes of interacting species, each with (or without) its own brain, as well as ecologies, substances, and forces that make marine animal studies, like the marine sciences, a formidable venture.[82] Dickinson's characteristic dashes—epistemological fits and starts that infuse the confident assertions with skeptical whimsy—may be the truest aspect of the poem. Cary Wolfe, in *Ecological Poetics, or Wallace Stevens's Birds,* draws on Jacques Derrida's *The Beast and the Sovereign,* systems theory, theoretical biology, and more to argue for a "*nonrepresentational* understanding of ecopoetics" in Stevens's poetry, noting that as contemporary biology asserts, "no organism has a representational relationship to its environment, in the sense of a neutral transparent access whose veracity and usefulness is calibrated to the degree of this neutrality and transparency."[83] Instead of seeking to represent an objective reality, freezing it into an accurate map of what is, we can understand, with Wolfe and Stevens, ecological space as "*virtual* space" because "any such space is populated by myriad wildly heterogenous life-forms that create their worlds, their environments, through the embodied enaction, unfolding dynamically and in real time, of their own self-referential modes of knowing and being, their own autopoesis."[84] Unlike conventional models of representation that still predominate in the humanities, this virtual space overflows with the knowing, doing, being and (self-)making of a multitude of more-than-human species. This is not less real but more so, as Wolfe notes "it's a wild, crisscrossing dance of an almost unimaginable heterogeneity of living beings, at different scales and at different temporalities, doing their own thing."[85] Wolfe develops this heterogeneity further with the term "jagged ontologies," concluding: "Paying serious attention to the question of 'the Animal' forces us to think more clearly and more rigorously about the biosphere in all its singularity and uniqueness in ways that reach far beyond the question of climate change and the Anthropocene. To make sense of any of these, we have to start with the realisation that what's needed here is not flat but ever more jagged ontologies."[86]

Contemplating heterogenous life-forms as they create their worlds would be vertiginous enough on land, but with a million or more species in the ocean (plus those that are as yet unknown), such contemplations warp into something akin to nitrogen narcosis. Irigaray's poetic

ecofeminist deconstruction of Friedrich Nietzsche imagines a radically egalitarian oceanic multitude of beings: "The sea shines with a myriad eyes. And none is given any privilege. Even here and now she undoes all perspective."[87] While Irigaray subverts mythical and philosophical misogyny and anthropocentrism in this passage, by both critiquing and inhabiting a feminized sea, gender dualisms as well as the distance between human and sea creature disappear in Jorie Graham's poem "Deep Water Trawling," which conveys the violence of trawlers who smash the habitat and destroy "hundreds of species," at "2000 meters and more— / despite complete darkness that surrounds me— / despite my being in my place under strong pressure."[88] Graham graphically depicts the horror of being a deep-sea animal, with the "midwater nets like walls closing around us" and "the hammer" that "knocks the eyes out," while mentioning the pervasive anthropogenic harms to life in the sea: industrialized fishing that discards up to 90 percent of the catch, pesticides, dead zones, abandoned ghost nets that kill forever, and, ultimately, the end of the world.[89] Whose world? The poem answers that question by condemning human presumptions of ownership as wrong while, even more provocatively, posing the speaker as simultaneously or sequentially a deep-sea being and a human at the start: "am I human we don't know that."[90] Despite the bleak portrayal of anthropogenic ecocide, the speaker expresses an anachronistic and idealized sense of what the human could be: "Did you ever kill a fish. I was once but now I am / human. I have imagination. I want to love. I have self-interest. Things / are not me."[91] The speaker rejects objectification in a paradoxical, tentative, even contradictory manner, asserting that "things" are "not me" rather than speaking as a subject to say, more directly, "I am not a thing." Once the speaker becomes human, not fish, awkwardly, the being of the fish is unnamed: "I was once but now I am." This suggests both that the species is unknown to humans and that this mode of creaturely being was, in the past, a vital mode of being in a way that to be "but now" human is not. If imagination and love are predicated on self-interest, and if objectification of others shores up the self, then an ecological imagination of life in the ocean depths must be as disconcerting as this poem, which speaks as something that both is and is not human, calling the perpetrators of this invisible destruction to account while crushing the claims to innocence

or disconnection that would deny the depth, breadth, and temporal scale of anthropogenic harm.

While we may marvel at visual images of deep-sea creatures, that aesthetic experience is ultimately meaningless without a commitment to the survival of marine life. We might note, bleakly, that the title of the Deep Sea Conservation Coalition's online video game is called "Game Over," with the subtitle "Is It Game Over for Residents of the Deep?"[92] Sue Reid, writing about the "sessile ones," the inhabitants of the deep-sea floor who will be devastated by mining, argues: "At a time when planetary environmental systems are in stress and decline, there is a vital place for imaginaries with which we might all navigate and transition. Thinking and imagining relationally and ecologically cultivates more sensitive interactions with ocean ecologies."[93] Envisioning the deep seas in a way that would matter ecologically demands not only that we envision the beings, lives, and worlds of animals in the depths but also that the invisible capitalist plunder of the open and deep seas becomes a matter of concern, a strong current of activist knowing that impels action in multiple domains. Such epistemological, ethical, and political work, undertaken by transcorporeal environmental subjects who find themselves immersed in networks of risk and responsibility, may seem to exist in another world, one far from the stunning images of abyssal life, which are portrayed as perfect specimens, dazzling aesthetic objects, or aliens from a distant realm, untouched by anthropogenic harms. It would, alas, be easy to slip into an abyss of cynicism and despair, not only because ocean ecologies face accelerating destruction but also because biodiversity and extinction have been overshadowed by an environmentalism concentrated almost exclusively on climate change and devoted to shoring up the lives of the most privileged peoples. Moreover, the very images of deep-sea creatures that inspire concern for the abyssal biome arrive through some of the same technologies used by industries that threaten ocean ecologies. Such troublesome circuits of mediation and knots of entanglement are complicated to navigate. Yet Radomska and Åsberg's call for a "low trophic" theory resonates: "How can we theorise in ways cognizant of our own patterns of consumption, potential violence, complexity and ecologies in which we as subjects, living beings, creators and knowledge producers are implicated?"[94] Such theories and practices require

scientific and activist knowledges, which may be inspired by mediated aesthetic encounters with abyssal life.

Aesthetics as a Lure for Creaturely Speculation

Haraway charges that "these times called the Anthropocene are times of multispecies, including human, urgency: of great mass death and extinction; of onrushing disasters, whose unpredictable specificities are foolishly taken as unknowability itself; of refusing to know and to cultivate the capacity of response-ability; of refusing to be present in and to onrushing catastrophe in time; of unprecedented looking away."[95] While it is possible to find videos, photos, and illustrations of the destructiveness of deep-sea trawling, massive industrialized fishing ships, and the heaps of bycatch routinely killed by the fishing industry, for the most part, the scale of death and ecological decimation on the high seas would certainly qualify as an "unprecedented looking away." At the same time, however, the iconic "newly discovered" deep-sea creatures, weird and wonderful, appear in popular media. We might rewrite John Berger to say, "Everywhere ocean creatures disappear. In digital images and coffee table books they constitute a monument to their own disappearance."[96]

When we look at a photograph of a deep-sea animal, what relation can there be between that being—so distant, so strange, so alien—and the viewer? Kaja Silverman, in *World Spectators,* insists on the power of visual pleasure as well as the agency of what is seen. Critiquing the poststructuralist insistence on the primacy of language, she insists not only that "visual perception comes first" but that we look at "other creatures and things" "in response to their very precise solicitation to do so."[97] Drawing on Freud, she argues, "The pleasure principle can best be defined as the enabling force behind a particular kind of looking: the kind of looking which is *creative* of beauty or preciousness. It is the impetus driving us to find visual gratification in perceptions that only imperfectly replicate our memories, and—in so doing—*to ennoble* ever new creatures and things. It is that to which we owe our capacity to affirm the phenomenal multiplicity of our earthly habitus: to become world spectators."[98] *World Spectators,* published in 2000, telegraphs the need for the nonhuman turn. In the previous quote, for example, Silverman states that it is human viewers who "create"

the beauty of these creatures and "ennoble" them. In her formulation, "the world," seemingly a single entity outside the human, seduces us. She writes, "The world does not simply give itself to be seen; it gives itself to be loved."[99] This conceit, while it turns on the world's agency in giving of itself, concludes with a crushing anthropocentric embrace. Silverman insists, "It is we alone who provide the light by means of which creatures and things appear."[100] Reading this in the wake of critical posthumanism, animal studies, multispecies studies, and the environmental humanities underscores its blatant human exceptionalism. Yet for the matter at hand, there is some truth in the idea that "it is we alone who provide the light by means of which creatures and things appear," in terms of the capture and dissemination of these highly mediated images. Moreover, the way these images circulate corresponds to Silverman's contention that "the phenomenal forms of the world invite us to make them part of our singular language of desire—to make them components of the rhetoric through which 'we care.' "[101] Beauty, desire, pleasure, and caring are imbricated. In Silverman's more recent volume, *The Miracle of Analogy*, which ignores posthumanism and environmental theory, she nonetheless casts photography as a leveling, disanthropocentric medium, calling it an "ontological calling card" that "helps us to see that each of us is a node in a vast constellation of analogies." This vast constellation of relations seems rather ecological, especially because "authorless and untranscendable similarities . . . structure Being," giving "everything the same ontological weight."[102] Chapter 3 discusses the stunning oversize photographic collection of deep-sea life by Claire Nouvian. Nouvian's compositions pose even the faceless abyssal animals in a portrait-like manner, each creature holding "the same ontological weight," presenting viewers with an enticement to reflect on their being without hierarchal scales of high and low. At the far reaches of Silverman's theory is the contention that "it is only through this interlocking that we ourselves exist. Two is the smallest unit of being."[103] It is breathtaking to consider coming into an intersubjective, multispecies mode of being—even as a wispy, billowy moment—through such highly mediated relations and "ontological calling cards." Yet if we remove ourselves from the scene, we could also ponder an aesthetics of the abyss that does not require humans as audience or composer, asking with the deep-sea scientist from J. M. Ledgard's novel *Submergence*, "Did the abyss sing of itself?"[104]

Such a poetic question is alluring. It is not possible to ever know what it is like to be a bat (with Thomas Nagel),[105] or a whale (with Burnett), or a hatchetfish (with Beebe), but the practice of creaturely speculation may nonetheless be vital for animal ethics and environmentalism. Steve Mentz, in *At the Bottom of Shakespeare's Ocean,* suggests that the ocean poses a "basic challenge: to know an ungraspable thing." He states that "Shakespeare's plays write the sea as opaque, inhospitable, and alluring, a dynamic reservoir of estrangement and enchantment."[106] The sea, both enchanting and opaque, entices us to contemplate its being and beings. Against the overwhelming scale of the imagined entity of the ocean, distinct species and organisms appear, inviting a paradoxical intimacy that propels the pleasure of wonder and the commitment to concern. We can tack between aesthetic pleasure that seems like a sensual, intimate encounter with another being and the provocation posed by the realization that the image conveys something of the being depicted, yet little understanding of that creature. Aesthetic pleasure sparks speculation—not only about creaturely lives but about species' habitats and precarious futures. María Puig de la Bellacasa writes in *Matters of Care: Speculative Ethics in More Than Human Worlds:* "That things could be different is the impulse of speculative thinking," adding that the term "speculative" refers to a "mode of thought committed to foster visions of other worlds possible," a "political imagination of the possible."[107] To imagine—as part of an environmental politics, or more specifically an oceanic environmentalism—is to foster a sense of concern that provokes public support, policies, laws, and a multitude of everyday practices.

As a feminist, environmentalist, posthumanist, and cultural studies scholar rather than a philosopher, I steer *The Abyss Stares Back* away from rarified debates about aesthetics in favor of attending to flagrant accounts of the beautiful, the dazzling, the surreal, the weird, the unfathomable, and the alien as they circulate through science, art, and popular culture. Rather than precisely parsing the differences between the sensual, the sublime, the emotional, and even the cognitive, I hover with the aesthetic as a mode where these responses swirl together. While humanities scholarship values definitional precision, in this instance, taxonomizing or narrowing the concept of the aesthetic would be counterproductive to the posthumanist work I intend the concept to do. A capacious, inclusive, and potent creaturely aesthetic muddles

scientific objectivity with emotion, ungrounds gendered dualisms of thought and feeling, and invokes a sense of multispecies encounters that are staged through networks of scientific and artistic capture. To label and divide different modes of the aesthetic at the outset would be to resist the siren song of the aesthetic pull of abyssal life, which seduces us with promises of mediated intimacy, sparks curiosity and awe for the singularity of a multitude of aquatic creatures, and, it can be hoped, provokes more expansive, volumetric, animal-oriented terrains of environmental concern. Perhaps deep-sea creatures can propel a shift from the ontoethicoepistemological of new materialist theory[108] to an even more vast and murky place where the aesthetic—the predominant mode in which deep-sea life is encountered—not only claims a place alongside the ontological, epistemological, and ethical but also slips in dodgy inhuman modes of the political, infusing all of these categories with pleasure, sensuality, relationality, affirmation, and awe.

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